

EIA SCREENING STATEMENT

In respect of

**Santa Sabina SHD
Proposed Alterations to Reg. Ref.: F17A/0615**

At

**Site that formerly formed part of Santa Sabina
Dominican College and Convent Complex,
Greenfield Road, Sutton, Dublin 13**

Prepared by

John Spain Associates

On behalf of

Parsis Ltd

March 2020



39 Fitzwilliam Square
Telephone: (01) 662 5803
E-mail info@johnspainassociates.com

1.0 INTRODUCTION

- 1.1 On behalf of the applicant, Paris Ltd, we hereby submit this Environmental Impact Assessment Screening Statement to assess the potential impacts on the environment of a Strategic Housing Development at the site that formerly formed part of Santa Sabina Dominican College and Convent Complex, Greenfield Road, Sutton, Dublin 13. St. Dominic's Convent Santa Sabina, located to the east of the application site, is a protected structure (RPS No. 0794).
- 1.2 The development comprises alterations to aspects of the permitted development on the subject site, Reg. Ref.: F17A/0615, which is currently under construction. The proposed alterations to the permitted development relate to 102 no. residential units, including the provision of 47 no. additional residential units and alterations / redesign to 55 no. permitted residential units, which results in an increase in the permitted number of residential units on the site from 96 to 143. The application site extends to approximately 2.46 ha, however, the proposed alterations only relate to the RS zoned portion of the site and an area of c. 0.76 ha.
- 1.4 This Statement accompanies a Strategic Housing Development application to An Bord Pleanála. The possibility of impacts from the proposed development on the environment has been examined as detailed below.
- 1.5 The purpose of this report is to provide an Bord Pleanála with the information required under Schedule 7A of the Planning and Development Regulations 2001, as amended, to enable the Board to determine in light of the criteria set out under Schedule 7 of those Regulations whether the proposed development is likely to have significant effects on the environment. If it determines that the proposed development is not likely to have significant effects on the environment, the application can be determined without an Environmental Impact Assessment Report (EIAR) having been submitted.
- 1.6 In the event that the screening determination carried out by the Board reaches the conclusion that the proposed development is not likely to have significant effects on the environment, the Board's attention is specifically drawn to the requirement that the Board's screening determination must comply with the requirements of Article 299C(2) of the Planning and Development Regulations, as amended, which provides:

“(2) (a) Paragraph (b) applies where the screening determination is that the proposed development would not be likely to have significant effects on the environment and the applicant has provided, under article 299B(1)(c), a description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment of the development.

(b) The Board shall specify such features, if any, and such measures¹, if any, in the screening determination.”

¹ Commonly referred to as mitigation measures.

- 1.7 This EIA Screening Statement and the proposed development has been informed by accompanying application documents including the following:
- AA Screening and Natura Impact Statement, and Ecology Report prepared by BES, which includes a note on bat fauna prepared by Brian Keeley MCIEEM, in association with Brady Shipman Martin;
 - Visual Impact Assessment, including Photomontages, prepared by BSM;
 - Arborist Report and Impact Assessment prepared by Arborist Associates;
 - Engineering Services Report, Construction and Environmental Management Plan, Site Specific Flood Risk Assessment Report, and an Outline Demolition and Construction Waste Management Plan prepared by DBFL Consulting Engineers;
 - A Traffic and Transport Assessment, which includes a Construction Traffic Management section, prepared by AECOM;
 - Operational Waste Management Plan prepared by Byrne Environmental Consultants;
 - Wind Microclimate Study prepared by ARUP Consulting Engineers;
 - Hydrological and Hydrogeological Qualitative Risk Assessment Report prepared by AWN consulting; and
 - Sunlight and Daylight Assessment prepared by Digital Dimensions.
- 1.8 The following sections of this Screening Statement refer to mitigation measures which are set out within the accompanying documentation outlined above. For the avoidance of doubt, the mitigation measures within these accompanying reports, which are referred to in this Statement, should be considered as mitigation for the purposes of the Competent Authority's EIA screening determination.
- 1.9 When undertaking the EIA Screening Assessment in respect of the current application, and the written determination for same, it would be appropriate for the Board to refer to these mitigation measures which are referenced in this Screening Statement.
- 1.10 For ease of reference, the Construction Environmental Management Plan prepared by DBFL has been included as an appendix to this Statement. The CEMP sets out the majority of the relevant mitigation measures relating to construction traffic, construction methodology, noise and vibration, sediment and water pollution, surface water drainage works, and dust control. The other relevant specialist reports referenced above are included under separate covers as part of this planning application.
- 1.11 The various reports address a variety of environmental issues and assess the impact of the proposed development and demonstrate that subject to the various construction and design related mitigation measures recommended that the proposed development, which alters an extant permission which is under construction, will not have a significant impact on the environment. This EIA Screening Report should therefore be read together with these other relevant reports.
- 1.12 This document is submitted in response to Section 11 of the Application Form which requests that a statement be submitted identifying the potential impacts of the proposed development on the environment.

2.0 EIA SCREENING METHODOLOGY

Legislation & Guidance

2.1 This EIA Screening exercise has been guided by the following documents:

- European Union (Planning & Development) (Environmental Impact Assessment) Regulations 2018;
- Planning and Development Act 2000 (as amended);
- Planning and Development Regulations 2001 (as amended);
- Planning and Development (Housing) and Residential Tenancies Act 2016 (as amended);
- Directive 2011/92/EU;
- Directive 2014/52/EU;
- Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems – Key Issues Consultation Paper (2017; DoHPCLG);
- European Commission Environmental Impact Assessment of Projects Guidance on Screening (2017);
- Preparation of guidance documents for the implementation of EIA directive (Directive 2011/92/EU as amended by 2014/52/EU) – Annex I to the Final Report (COWI, Milieu; April 2017);
- Guidelines on the information to be contained in environmental impact assessment reports, EPA, 2017 (Draft)
- Environmental Impact Assessment – Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018; DoHPLG).
- Guidance for Consent Authorities regarding Sub-threshold Development (2003; DoEHLG)

2.2 With reference to the above documents it has been possible to carry out a desktop EIA Screening using the best available guidance while operating within the applicable legislation. It is noted that Directive 2014/52/EU has been transposed into Irish Legislation through the Planning & Development Act 2000, as amended, and the Planning & Development Regulations 2001-2019.

2.3 The requirements for Screening are contained in Article 4 of the EIA Directive, Annex IIA, and Annex III to the Directive.

2.4 The methodology employed in this Screening Statement is in accordance with the EIA Guidelines published in August 2018 by the DoHPLG and the contents of Schedule 7 and 7A of the Planning and Development Regulations 2001-2019.

2.5 The European Commission Guidelines on EIA Screening (2017) state the following:

“The purpose of Screening is to determine whether or not an EIA is required for a particular Project listed in Annex II of the EIA Directive. Projects listed in Annex II will hereafter be referred to as ‘Annex II Projects’.

Screening has to implement the Directive’s overall aim, i.e. to determine if a Project listed in Annex II is likely to have significant effects on the environment and, therefore, be made subject to a requirement for

Development Consent and an assessment, with regards to its effects on the environment. At the same time, Screening should ensure that an EIA is carried out only for those Projects for which it is thought that a significant impact on the environment is possible, thereby ensuring a more efficient use of both public and private resources. Hence, Screening has to strike the right balance between the above two objectives.”

- 2.6 Mitigation measures for the proposed development during the construction phase are set out in the Construction and Environmental Management Plan (CEMP) which is included as Appendix 1 of this Statement for ease of reference.

EIA Screening Study Team and Guarantee of Competency and Independence

- 2.7 This *Environmental Impact Assessment Screening Statement* was completed by John Spain Associates (JSA) with the assistance of an experienced project team as set out in the Introduction to this Statement.
- 2.8 This EIA Screening Statement has been prepared by Luke Wymer, BA, MRUP, Dip Environmental and Planning Law, Dip PM, Associated Director at John Spain Associates and was reviewed by Paul Turley, BA MRUP, Dip Environmental and Planning Law, Executive Director with John Spain Associates. Luke has 3 years of experience in the co-authoring and coordination of EIARs and EIA Screening Statements, while Paul has over fifteen years experience as a Planner, including significant experience in Environmental Impact Assessment during this time. Both Paul and Luke are full corporate members of the Irish Planning Institute.
- 2.9 JSA confirm that the experts involved in the preparation of this EIA Screening Statement are fully qualified and competent in their respective fields.

EIA Thresholds

- 2.10 Schedule 5 of the Planning and Development Regulations 2001-2019 sets out the thresholds for which if a project exceeds, must be subject to an Environmental Impact Assessment.
- 2.11 Part 2 of Schedule 5 lists the following that are relevant to the proposal:

‘10. Infrastructure projects –

(b) (i) Construction of more than 500 dwelling units;

(ii) Construction of a car-park providing more than 400 spaces other than a car-park provided as part of, and incidental to the primary purpose of, a development;

(iii) Construction of a shopping centre with a gross floor space exceeding 10,000 square metres;

(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere;

(In this paragraph, ‘business district’ means a district within a city or town in which the predominant land use is retail or commercial use).

13. *'Changes, extensions, development and testing –*

(a) *Any change or extension of development already authorised, executed or in the process of being executed (not being a change or extension referred to in Part 1) which would: -*

(i) *result in the development being of a class listed in Part 1 or paragraphs 1 to 12 of Part 2 of this Schedule, and*

(ii) *result in an increase in size greater than –*

- 25 per cent, or

- an amount equal to 50 per cent of the appropriate threshold, whichever is the greater.

15. Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7.'

2.12 The proposal relates to a development of 143 no. residential units in total (permitted and proposed), 102 no. of which are additional / altered as part of this SHD application and is therefore significantly below the 500 residential unit mandatory EIA threshold set out in Schedule 5 of the Planning and Development Regulations 2001 (as amended).

2.13 The application site area is circa 2.46 hectares and is therefore significantly below the 10 hectare threshold for urban development in a built up area as set out above, as the application site is not located in a 'business district' where the 2 hectare threshold applies. Therefore, mandatory Environmental Impact Assessment is not required in this instance.

2.14 We note that the Class 13(a) threshold relates to any change or extension of development where an increase in size greater than 25% must relate to a project listed in paragraphs 1 to 12 of the schedule. Under Class 10, the threshold for a residential scheme is 500 units or urban sites greater than 10 hectares. Therefore, as the total number of units and site area the subject of this SHD application for alterations to a Section 34 planning permission remain below the required threshold for EIA and the increase in size criteria under Class 13(a) does not apply as the lands / development have never been subject to EIA.

2.15 Paragraph 15 of Schedule 5 relates to projects likely to have significant effects on the environment having regard to Schedule 7 of the Planning and Development Regulations 2001-2019.

2.16 It is considered that the proposal does not fall within any of the EIA thresholds arising under Schedule 5 having regard to the following sections which provide information to facilitate the screening of this proposal as a sub-threshold project.

Sub-Threshold Projects Requiring EIA

- 2.17 An Environmental Impact Assessment Report (EIAR) is required to accompany an application for permission for Strategic Housing Development of a class set out in Schedule 5 of the Planning and Development Regulations 2001 as amended, which equals or exceeds, as the case may be, a limit, quantity or threshold set for that class of development. As seen above, the relevant thresholds have not been exceeded in the present case.
- 2.18 An EIAR will nonetheless be required in respect of sub-threshold Strategic Housing Development where the Board considers that the proposed development would be likely to have significant effects on the environment².
- 2.19 Sub-threshold development means '*development of a type set out in Part 2 of Schedule 5 which does not equal or exceed, as the case may be, a quantity, area or other limit specified in that Schedule in respect of the relevant class of development*'.
- 2.20 Schedule 7A of the Planning and Development Regulations 2001 (as amended) outlines the information to be provided by the applicant or developer for the purposes of screening sub-threshold development for environmental impact assessment, as set out below:

'1. A description of the proposed development, including in particular—

(a) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works, and

(b) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.

2. A description of the aspects of the environment likely to be significantly affected by the proposed development.

3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—

(a) the expected residues and emissions and the production of waste, where relevant, and

(b) the use of natural resources, in particular soil, land, water and biodiversity.

4. The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7'.

- 2.21 Schedule 7A(4) refers to the criteria set out in Schedule 7 which should be used in determining whether sub-threshold development listed in part 2 of Schedule 5 should be subject to an environmental impact assessment.
- 2.22 The criteria under Schedule 7 are grouped under three broad headings:

² See s. 172(1)(b) of the Planning and Development Act 2000, as amended.

- Characteristics of proposed development;
- Location of proposed development; and
- Types and characteristics of potential impacts.

2.23 Section 3 of this Statement below provides the information required pursuant to Schedule 7A for the purposes of screening sub-threshold development for Environmental Impact Assessment, and takes into account, where relevant, the criteria outlined in Schedule 7.

3.0 EIA SCREENING STATEMENT

Introduction

3.1 The following sections provide the information as required by Schedule 7A for the purposes of screening sub-threshold development for environmental impact assessment.

1. A description of the proposed development, including in particular—

(a) a description of the physical characteristics of the whole proposed development and, where relevant, of demolition works, and

(b) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.

Physical Characteristics of the Proposed Development

3.2 Before outlining details of the proposed development, it is considered relevant in environmental terms to discuss the permitted / under construction development on the subject lands, which this SHD application seeks to alter.

Permitted / Under Construction Development

3.3 In November 2018, Parsis Ltd. received planning permission from Fingal County Council (FCC Reg. Ref.: F17A/0615) for a residential development of 96 no. dwelling units, a crèche, a revised access to the proposed development and a new access to the Santa Sabina Dominican College & Convent Complex, on a c. 2.46 hectare site off Greenfield Road, Sutton, Dublin 13.

3.4 The applicant prepared and submitted the relevant “prior to commencement” compliance submissions to the Planning Authority in February 2019.

3.5 Works for the provision of the new entrance and revised access to the college and convent complex, together with associated surface water attenuation and infrastructure works, commenced in February 2019. All trees scheduled for removal under the permission were felled as part of the initial works in February 2019. The new entrance and revised access were opened in summer 2019 and associated works were completed in late 2019. Tree and shrub planting scheduled for revised entrance/access was programmed for completion in February 2020.

3.6 Construction works associated with the permitted residential scheme are currently on-going on site and include tree protection measures;

establishment of site compound, site stripping, topsoil storage, provision of a second surface water attenuation tank and associated services; construction of site access, which utilises the route of the permitted development access road, and excavation of the permitted basement located under Apartment Blocks A-B1, B2-B3, C1 & C2.

Proposed Alterations to the Permitted Development

3.7 The development comprises alterations to the development permitted under Reg. Ref.: F17A/0615 (currently under construction) and comprise of the following:

- Provision of 2 additional storeys to Block A-B1 and alterations / redesign to the 3 permitted storeys below to provide a five storey building containing 42 no. apartments (consisting of 9 no. 1 beds, 29 no. 2 beds and 4 no. 3 beds), and including associated alterations to the courtyard communal amenity space.
- Provision of 2 additional storeys to Block C1 and alterations to the 3 permitted storeys below to provide a five storey building containing 28 no. apartments (consisting of 28 no. 2 beds).
- Replacement of Block D, comprising 10 no. two and three storey semi-detached houses, with 3 no. three storey apartment buildings (Block D1, D2 and D3) containing 32 no. apartments (consisting of 6 no. 1 beds, 21 no. 2 beds and 5 no. 3 beds), and including provision of communal amenity space to the north.
- The alterations to Block A-B1 and C1 include associated alterations to the basement under these blocks primarily relating to the omission of a core and associated alterations to plant, waste storage, car and cycle parking provision.
- The proposed alterations include the provision of balconies / terraces to the external elevations of Block A-B1, C1, D1, D2, and D3.
- An ESB substation and switchroom building and bin collection point are proposed in place of three permitted car parking spaces adjoining the western boundary of the site.
- The proposal includes alterations to the permitted car and cycle parking at basement and ground level, resulting in the provision of a total of 168 no. car parking and 270 no. bicycle spaces.
- The proposed alterations include all associated ancillary site development works.

3.8 The proposed alterations to the permitted development relate to 102 no. residential units, including the provision of 47 no. additional residential units and alterations / redesign of 55 no. permitted residential units, which results in an increase in the total number of residential units on the site from 96 to 143.

3.9 The proposed alterations to the permitted development are located entirely on lands zoned RS- Residential. No alterations are proposed to Block B2-B3 (24 no. units) and C2 (17 no. units), which contain a total of 41 no. permitted apartments and a creche. The permitted access road to the adjacent school has been implemented and other site development works associated with the permitted residential development, which are not the subject of the proposed alterations, have commenced on the application site as provided for under Reg. Ref.: F17A/0615.

- 3.10 The extent of the proposals the subject of this SHD application are illustrated in Figure 3.1 below. For further detail on the physical characteristics of the proposed development please refer to the architectural drawings, Design Statement, Engineering Services Report, Landscape Report, and the landscape drawings which accompany the application.



Figure 3.1: Proposed Site Layout Plan

Source: OMP Architects

Location of the Proposed Development

- 3.11 The application site, which has an area of c. 2.46 ha, formerly formed part of Santa Sabina Dominican College and Convent Complex, at Greenfield Road, Sutton, Dublin 13. St. Dominic's Convent Santa Sabina is a protected structure. The site is irregular in shape, flat and bounded by St. Fintan's Church and Presbytery with its attendant grounds on its western side (a protected structure), a boundary wall to the rear gardens of Glencarraig, a housing estate to the north and by the School and Convent (including an indoor sports hall) with its attendant grounds to the east.

- 3.12 All trees scheduled for removal under the permission were felled as part of the initial works in February 2019. The new entrance and revised access were opened in summer 2019 and associated works were completed in late 2019. The site also takes in existing access routes and surrounds an existing all-weather sports pitch which is surrounded by a mesh fence.
- 3.13 To the south of the subject site is the R105 Greenfield Road, beyond which is an area of grass / open space, with cycle / pedestrian route, along the seafront. The location of the subject site is in the bend of Dublin bay, where the isthmus of Sutton meets the higher ground of Howth Head.



Figure 3.2: Recent aerial image of application site and surrounding area

Source: Google Earth

- 3.14 There is a variety of architectural styles and building types and scales in the surrounding area, including detached and semi-detached houses in the Glencarraig and Offington Park residential areas (to the northwest and northeast respectively). Greenfield Road in the vicinity of the subject site accommodates a range of building typologies and heights, including three storey residential dwellings and several two storey detached houses of contemporary design, which adjoin the seafront and back onto the strand and Dublin Bay.
- 3.15 Adjoining the subject site, the Santa Sabina school and convent complex comprises a mix of buildings of varying ages, including a two-storey building which was converted to its current use from previous use as a house. The building dates from the 19th century and it and its attendant walled garden are a protected structure as identified within the Fingal County Development Plan (Ref. 794). The school / convent complex also takes in more recent buildings of little architectural merit with pebble-dashed facades and corrugated metal roof treatments. The sports hall abutting the subject site is an oval-shaped tent-like structure with solid walls and a bowed roof supported by a metal exoskeleton.

- 3.16 To the west, St Fintan's Roman Catholic church dates from the early 1970s. Designed by Robinson Keefe and Devane, the structure features a copper-clad roof and a chimney-like belfry. The church is accessed from Greenfield Road and does not directly abut the subject site, which it is separated from by an area of surface car parking and a treeline along the site boundary.



Figure 3.3: St Fintan's Church, located to the west of the subject site

- 3.17 The application site is located just within c. 1km away of Sutton Dart Station, is adjacent to a bus stop and is within c. 600 m from further bus services at Sutton Cross and associated district centre services. The accessibility of the site is illustrated in Figure 3.4 below.



Figure 3.4: Public Transport Accessibility

- 3.18 This EIA Screening Statement pertaining to the proposed alterations to the permitted development for which permission is sought, is supported and informed by the accompanying application documents including an AA Screening / Natura Impact Statement and Ecological Impact Assessment prepared by BES, a Landscape and Visual Impact Assessment, including

Photomontages, prepared by BSM, an Engineering Services Report, a Construction and Environmental Management Plan, a Demolition and Construction Waste Management Plan prepared by DBFL Consulting Engineers, a Hydrological and Hydrogeological Assessment Report prepared by AWN and a Sunlight and Daylight Assessment prepared by Digital Dimensions, which address a variety of environmental issues in assessing the proposed development.

- 3.19 The proposal is considered to be compatible with its immediate adjoining land uses, which are a mix of residential, religious, and educational uses. The suitability of the site for a residential development is established by its land use zoning, with the location of all alterations proposed as part of the current SHD application being subject to a residential zoning objective.
- 3.20 The Traffic and Transport Assessment prepared by AECOM and submitted herewith confirms that the road network in the vicinity of the site has the capacity to accommodate the proposed development, based on the total proposed car parking provision of 168 no. spaces on foot of the alterations now proposed.
- 3.21 The subject site is located in close proximity to the North Bull Island SPA and the North Dublin Bay SAC. To the south of the site, between the adjacent roadway and the strand is a patch of grass / amenity space which is used from time to time by light bellied Brent geese.
- 3.22 The information prepared to allow for Appropriate Assessment Screening identified that in the absence of mitigation, the qualifying interests of a number of European Sites could potentially be affected, as a potential Pathway exists between source and receptor. These potential impacts are addressed further below where reference is also made to the Hydrological and Hydrogeological Risk Assessment prepared by AWN and to the Natura Impact Statement prepared by BES, both of which reports accompany this application. As set out further below, based on the mitigation measures put forward within the Natura Impact Statement, the proposed development will not result in any impact on the integrity of any European Site. The Natura Impact Statement notes that the development site is currently dominated by bare soil and built land, and on this basis the site has no potential to support ex-situ species associated with any of the European Sites within a 15km radius of the site.
- 3.23 In terms of “*the relative abundance, quality and regenerative capacity of natural resources in the area*”, the proposed development will not, individually or in combination with other projects, significantly impact on the integrity of natural resources in the area, having regard to the nature and extent of the proposed development and the character of the receiving environment and the surrounding area. The area in the immediate vicinity of the proposed development has good absorption capacity in terms of any environmental effects of the proposed scheme. Each of the sections below addresses the aspects of the environment and its absorptive capacity

2. A description of the aspects of the environment likely to be significantly³ affected by the proposed development.

- 3.24 This section is intended to provide a clear statement on the aspects of the environment that are likely to be affected by the proposed development. The likelihood of significant impacts of the proposed development on these aspects of the environment will be addressed later in this report.
- 3.25 The subject lands are greenfield in an urban context. The majority of the site is recently cleared ground (as part of the implementation of Reg. Ref.: F17A/0615) and had previously been amenity grassland as part of the school complex. The proposed alterations to the permitted development primarily relate to increased height on the two western apartment blocks and replacement of 2 and 3 storey housing on the northern part of the site with 3 storey apartment buildings, thereby achieving an increase in density without significantly altering the layout of the permitted development.
- 3.26 The proposals are brought forward for the subject lands to seek to maximise the land resource within this suburban location within Dublin City. The immediate surroundings consist of community / institutional uses to the west and east, residential development to the north and north west and amenity lands to the south.
- 3.27 The Appropriate Assessment Screening Report and Natura Impact Statement prepared by BES demonstrates that the proposed alterations to the permitted development do not have the potential to impact on the integrity of Natura 2000 sites.
- 3.28 The Construction and Environmental Management Plan and Demolition and Construction Waste Management Plan prepared by DBFL Consulting Engineers provide further details on the measures that will be implemented on site during the construction stage to mitigate against localised environmental impacts.

Population & Human Health

- 3.29 European Commission guidance relating to the implementation of the 2014 Directive, in reference to “*human health*” states “*Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study*”.⁴

³ The wording of this heading under Schedule 7A would appear to literally pre-empt the conclusion as to the significance of the effects of the proposed development and, presumably for that reason, is not intended to be interpreted literally.

⁴ *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, European Commission, 2017 <http://ec.europa.eu/environment/eia/eia-support.htm>

- 3.30 The Draft EPA Guidelines on the information to be contained in environmental impact assessment reports state that *'in an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc'*.⁵
- 3.31 The TTA submitted herewith, which was prepared by AECOM Consulting Engineers, notes that the roads and access infrastructure associated with the development are being implemented as permitted under Reg. Ref.: F17A/0615. As such, the access arrangements for the site do not fall to be considered under the current application for alterations to the permitted development. Notwithstanding this, the TTA does not identify any risk to human health relating to access or traffic safety.
- 3.32 The proposed amendments to a permitted residential development are being brought forward to provide additional residential units at an accessible site located within the Dublin Metropolitan Area. The proposal will make optimal use of the subject lands and deliver compact growth and densification at an appropriate location. The proposed use will complement its surroundings and constitutes sustainable development of the site.

Biodiversity

- 3.33 The subject lands are greenfield and are located in an urban context. The majority of the site is recently cleared ground (as part of the implementation of Reg. Ref.: F17A/0615) and had previously been amenity grassland as part of the school complex. The proposed alterations will not involve the removal of any additional trees (compared to the parent permission which is currently being implemented) and there are no significant species present on the site.
- 3.34 There are no open streams or drainage channels on site. The nearest watercourse is the Howth Stream located 1.7 km upgradient of the site. This stream, which flows through the Deerpark Estate, discharges into Baldoyle Bay on the north side of the peninsula. It is not connected to the site.
- 3.35 Existing stormwater drainage from the site is to an existing 750mm diameter concrete surface water sewer running along the western boundary between the site and St. Fintan's Church lands. This currently drains the areas of the Glencarraig estate to the north and Saint Fintan's Catholic Church site to the west before discharging to Sutton Creek (Dublin Bay) to the south of Greenfield Road.
- 3.36 As set out within the AA Screening Report / NIS submitted, no part of the study site is covered by a nature conservation designation. However, the site is close to Sutton Creek which is part of the North Bull Island/North Dublin Bay complex, which is designated as follows:
- North Dublin Bay Special Area of Conservation (code 00206)
 - North Bull Island Special Protection Area (04006)

⁵ *Guidelines on the information to be contained in environmental impact assessment reports, EPA, 2017 (Draft)*

- 3.37 Any potential impacts on European sites are fully appraised in the accompanying AA Screening Report and Natura Impact Statement.
- 3.38 The Ecological Impact Assessment and AA Screening Report and Natura Impact Statement, which accompany the application, assess the impact of the proposed alterations to the permitted development on biodiversity.

Lands and Soils

- 3.39 The subject lands are greenfield in an urban context. The majority of the site is recently cleared ground (as part of the implementation of Reg. Ref.: F17A/0615) and had previously been amenity grassland as part of the school complex.
- 3.40 The application is accompanied by a series of engineering reports prepared by DBFL Consulting Engineers. The reports prepared by DBFL demonstrate (due to the alterations proposed not significantly increasing the built footprint of the blocks or the basement of the development) that the proposals are not likely result in any significant effects on the environment with regard to lands and soils due to the site being connected to public foul, storm and water services. The Construction Environmental Management Plan (CEMP) demonstrates the range of standard and site specific practices that will be implemented during the construction phase to avoid impacts.

Water

- 3.41 The proposed development is located to the north of Sutton Strand. Natural drainage is expected to be direct to Sutton Strand. There are no open streams or drainage channels on site. There is an existing 750mm diameter concrete surface water sewer running along the western boundary of the site which currently drains the upstream areas of the Glencarraig estate to the north and Saint Fintan's Catholic Church site to the west before discharging to Sutton Creek to the south of Greenfield Road.
- 3.42 The Engineering Services Report addresses the surface water, water and foul drainage requirements of the proposed development. The Ecological Impact Statement and AA Screening Report / Natura Impact Statement assesses these aspects of the proposal and demonstrates that there is no potential for significant adverse impacts on the environment in terms of biodiversity based on the implementation of mitigation measures. A Hydrological and Hydrogeological Risk Assessment has also been undertaken by AWN as discussed further below.

Air & Climate

- 3.43 Air quality monitoring programmes have been undertaken by the EPA and Local Authorities over the past number of years. The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides up to date monitoring data. The nearest monitoring points to the subject site are located at St. Anne's, Marino and Ringsend.
- 3.44 At the time of writing this report, all three of these monitoring stations recorded 'Good' air quality across all pollutants monitored for.

- 3.45 The design of the development, including the water attenuation and drainage systems on site, take into account an additional 10% intensity of storm events based on future climate change.
- 3.46 The application is accompanied by a Wind and Microclimate assessment prepared by ARUP Consulting Engineers. The report notes that the site, given its proximity to Sutton Strand, is exposed to southwesterly winds blowing off Dublin Bay.

Noise & Vibration

- 3.47 The proposed development is located within an existing built up area, to the north of an existing roadway, and development is currently progressing on site on the implementing of the permitted development thereon, which the current application seeks to alter.
- 3.48 The DBFL noise calculation note appended to the NIS submitted herewith sets out that the existing roadway to the south of the site, Greenfield Road, emits noise of c. 70dB.
- 3.49 There is likely to be noise and vibration during the construction phase. As set out within the Construction and Environment Management Plan submitted with the application, construction activities will be carried out in compliance with the recommendations of BS 5228, Noise Control on Construction and open sites part 1 and comply with BS m6187 Code of Practice for Demolition. Noise monitoring will be undertaken on site to ensure that there is no risk of a significant environmental impact in this regard.

Landscape

- 3.50 There are no landscape designations pertaining to the subject site. The majority of the site is recently cleared ground (as part of the implementation of Reg. Ref.: F17A/0615). The proposed alterations to the permitted development are consistent with the zoning and urban development policies promoted by the Government, has regard to the surrounding context. The proposed alterations do not result in the removal of any additional trees on site, *vis a vis* the permitted development to which the alterations relate.
- 3.51 The visual impact of the proposed development on the surrounding area is assessed in the Landscape and Visual Impact Assessment (LVIA) and illustrated in the photomontage brochure accompanying this application, which have been prepared by BSM. It illustrates the permitted and proposed development and surrounding context and that the proposals provide an appropriate form of development for this location.
- 3.52 It is considered that the retention of existing trees along the boundary of the site and landscape planting will assimilate the development in its local context and contribute towards an improved and attractive landscape.
- 3.53 The proposed landscaping plan is considered an enhancement in comparison to the do-nothing scenario.

Material Assets

- 3.54 The land on which the site is situated is a material asset. The area of the site subject to the proposed amendments to the permitted development is zoned for residential development, and as such, the use of this material asset in a manner compatible with the zoning designation, is entirely appropriate. Once constructed, the operational phase will provide an important material asset for the residents in terms of providing residential accommodation and associated public open space for amenity and recreation.
- 3.55 The land on which the development will be situated is undergoing active development at present on foot of the permitted development on site, to which the alterations now proposed relate.
- 3.56 The subject site is located on an existing road network and the access arrangements for the development are permitted under the parent permission which is being implemented on site. The site is served by public transport including Dublin Bus routes 31 and 31b, which stops within 50 metres of the site entrance. High frequency bus routes are within walking distance at Sutton Cross, c. 500 metres away. The development site is a c. 1km walk from Sutton Railway Station, which is served by the Bray/Greystones – Howth rail line, with a frequency of c. 20 minutes in each direction.
- 3.57 The accompanying TTA prepared by AECOM Consulting Engineers sets out the baseline traffic and transport environment and the transport infrastructure serving the subject site.

Archaeology, Architecture and Cultural Heritage

- 3.58 In terms of the archaeological environment, it is noted that the majority of the subject site is recently cleared ground, on foot of works being undertaken on the implementation of the parent permission on site as permitted under Reg. Ref.: F17A/0615.
- 3.59 The subject application relates to alterations to a permitted development which does not alter the footprint of the permitted development and therefore has no potential for additional impacts in respect to archaeology.
- 3.60 In terms of architectural heritage in the surrounding area, as set out within the accompanying Conservation Report prepared by Cathal Crimmins Architects, the subject site is proximate to St Dominic's Convent forming part of the Santa Sabina complex to the east, which is a protected structure. The site is also proximate to Saint Fintan's Church, which is also a protected structure.
- 3.61 St. Dominic's College Convent is a detached five-bay two storey over basement building with a projecting entrance porch dating from the 18th and 19th century with early 20th century additions. St. Fintan's Church is a 20th century church designed by Andy Devane of Robinson Keefe and Devane Architects.
- 3.62 The impact of the proposed alterations to the permitted development in terms of additional building height and the relationship with the protected structures on the sites to the west and east is assessed in the Architectural Heritage Report prepared by Cathal Crimmins Architects. The report demonstrates that

the proposals do not negatively impact on the setting of these protected structures.

Vulnerability of the project to risks of major accidents and/ or disasters

- 3.63 The subject lands are not proximate to any Seveso/COMAH designated sites.
- 3.64 The site is identified as falling within Flood Zone C. The accompanying Site-Specific Flood Risk Assessment report prepared by DBFL Consulting Engineers notes that the alterations proposed as part of the current application will not change the footprint of the main apartment blocks or significantly alter the surrounding landscape compared to the previous permission. Notwithstanding this, the Site Specific Flood Risk Assessment report addresses the flood risk associated with the overall site to which the current application for alterations relates. The SSFRA proposes mitigation measures to ameliorate flood risk which are discussed further below.

3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—

- (a) the expected residues and emissions and the production of waste, where relevant, and***
(b) the use of natural resources, in particular soil, land, water and biodiversity.

- 3.65 It is expected that there will be some normal residues/emissions during the construction stage associated with the development works for the permitted development which is ongoing on site which include ground preparation works, development of site infrastructure, road infrastructure works, construction of buildings and hardstanding areas and landscaping of the site including open soft landscaped areas. It is considered that the impact of the proposed alterations under the current SHD application will not lead to any significant change in the quality or duration of the construction phase or its impacts.
- 3.66 Standard mitigation measures as referred to below and within the accompanying documents referenced herein will be employed and monitored during the construction phase. As such residues and emissions are not considered likely to have potential to cause significant effects on the environment. These will be considered under each of the relevant aspects of the environment in the next section.
- 3.67 There will be some waste materials produced in the construction of the proposed development on site which will be disposed of using licensed waste disposal facilities and contractors. The scale of the waste production in conjunction with the use of licensed waste disposal facilities and contractors does not cause concern for likely significant effects on the environment. Reference is made to the Outline Demolition and Construction Waste Management Plan prepared by DBFL Consulting Engineers, which should be considered in this context.
- 3.68 There will be no large scale use of natural resources associated with the proposed development which might result in a significant environmental impact. The main use of natural resources will be land which is zoned for

residential development (the permitted development on site included a small portion of development on CI zoned lands, but all of the alterations now proposed under the SHD application relate to lands zoned for residential development under the Fingal County Development Plan).

- 3.69 Other resources used will be construction materials which will be typical materials used in construction of residential developments. The scale and quantity of the materials used will not be such that would be likely to result in significant effects on the environment.
- 3.70 The construction or operation of the scheme would not use such a quantity of water to cause concern in relation to significant effects on the environment. The use of natural resources in relation to the proposed development is not likely to cause significant effects on the environment.

4.0 TYPES AND CHARACTERISTICS OF IMPACTS – SCHEDULE 7, PARAGRAPH 3

- 4.1 Paragraph 3 of Schedule 7 of the Planning and Development Regulations, 2001 as amended, which is headed “*Types and characteristics of potential impacts*”, refers to:

“The likely significant effects on the environment of proposed development in relation to criteria set out under paragraphs 1 and 2, with regard to the impact of the project on the factors specified in paragraph (b)(i)(I) to (V) of the definition of ‘environmental impact assessment report’ in section 171A of the Act, taking into account—

- (a) the magnitude and spatial extent of the impact (for example, geographical area and size of the population likely to be affected),*
- (b) the nature of the impact,*
- (c) the transboundary nature of the impact,*
- (d) the intensity and complexity of the impact,*
- (e) the probability of the impact,*
- (f) the expected onset, duration, frequency and reversibility of the impact,*
- (g) the cumulation of the impact with the impact of other existing and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(b) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment, and (h) the possibility of effectively reducing the impact.*

- 4.2 Therefore, this section sets out the likely effects of the development on each of the aspects of the environment likely to be affected by the proposed development referred to under *paragraph section 171A (b)(i)(I) to (V)*, namely-

- “(I) population and human health;*
- (II) biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive;*
- (III) land, soil, water, air and climate;*
- (IV) material assets, cultural heritage and the landscape;*
- (V) the interaction between the factors mentioned in clauses (I) to (IV),”*

Population and Human Health

- 4.3 The construction phase of the proposed development will provide for the temporary employment of construction workers which is likely to provide benefits for local businesses providing retail or other services to construction workers and potentially could create some additional secondary employment in the area.
- 4.4 The proposed development will provide residential accommodation within an existing built up area which is well served by public transport and a broad range of facilities and amenities. The proposal will address the established need and demand for housing in Dublin and within the surrounding area of Sutton. The provision of housing and increased number of residents is likely to result in a slight positive effect on the population of the local area.
- 4.5 It is expected that there will be some residues/emissions such as material excavated on site and waste associated with construction works during the construction stage, which are typical to development works of the kind proposed and which have the potential to affect human health and the population within the vicinity of the proposed development, in particular. The construction works include ground preparation works, development of site infrastructure, construction of buildings and hardstanding areas and landscaping of the site including open soft landscaped areas. Works are ongoing to implement the permitted development on site, to which the current alterations relate.
- 4.6 The implementation of mitigation measures as described in the Construction and Waste Management Plan prepared by DBFL Engineers will be employed and monitored as described in each section below.
- 4.7 Following the implementation of mitigation measures described within the CEMP (included as Appendix 1) in relation to each aspect of the environment considered, the impacts on human health during the construction phase are likely to be short term, local and minor. The environmental effects arising during the operational phase will be long term and are considered to be moderately beneficial but not significant in environmental terms.
- 4.8 Following implementation of the mitigation measures described below in respect of each of the different aspects of the environment, it is considered that the residues and emissions arising from the proposed development are not considered likely to have significant effects on population and human health during either the construction or operational phase.

Biodiversity

- 4.9 The proposed alterations will not involve the removal of any significant vegetation (the alterations will not result in the removal of any additional trees) and there are no significant species present on the site.
- 4.10 An AA Screening and NIS, and Hydrological Assessment have been prepared and are submitted with the application. The NIS submitted herewith concludes that -

“...the possibility of any adverse impacts on the integrity of any European Site having regard to its conservation interests, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.”

- 4.11 The NIS acknowledges that the site proposed for development is an active permitted construction site and is entirely unsuited to use by Brent geese and other over-wintering bird species. The AA Screening Report and NIS assesses in detail the impact of the proposed development on Brent geese on nearby sites and concludes that the potential impacts through disturbance, both during the construction and operational phases can be screened out.
- 4.12 This conclusion is reached based on mitigation measures set out within the NIS document which will serve to mitigate against any significant effects on European Sites. To review these mitigation measures, the reader is referred to the Natura Impact Statement prepared by BES.
- 4.13 An Ecological Report has also been prepared by BES and is submitted herewith. The mitigation measures set out within the report allow the author to conclude that the proposed alterations will not result in any significant impact on ecological receptors. Please refer to the accompanying Ecological Report for these mitigation measures. The report concludes as follows:

“It is considered that, following the implementation of the mitigation measures set out in this report (and in the accompanying NIS) there will be no long-term residual impact on any ecological receptors within or in the vicinity of the site, or associated with any site designated for nature conservation as a result of the proposed development.”

- 4.14 A note on bat fauna has also been prepared by BSM in consultation with bat specialist Brian Keeley, MCIEEM. The note forms Appendix 1 of the Ecology Report prepared by BES. The note on bat fauna concludes that post mitigation this development will have no direct impact on the conservation status of bats. This conclusion is reached based on the undertaking of the mitigation measures set out within the note.
- 4.15 On the basis of the foregoing, and having regard to the evidence and mitigation measures set out within the AA Screening Report and NIS and the Ecological Report, and the nature and extent of the proposed alterations it is considered that the proposed alterations will not result in any likely significant impact on biodiversity.

Land and Soils

- 4.16 The lands to which the current alterations relate are primarily recently cleared ground (as part of the implementation of Reg. Ref.: F17A/0615) and had previously been amenity grassland as part of the school complex.
- 4.17 The proposed alterations do not significantly alter the footprint of the permitted development on site (for which EIA was not required). The excavation of the basement and other site works (as part of the implementation of Reg. Ref.: F17A/0615), which the current alterations will not affect, are currently underway on site.

- 4.18 As set out within the accompanying CEMP prepared by DBFL Consulting Engineers (which is also included as Appendix 1), the majority of the site has been cleared of topsoil to facilitate the works permitted under the parent permission on site which is currently being implemented. No contaminated soils have been identified on the subject site and based on testing it has been confirmed that there is no issue with disposal of soil from site to a suitably licenced landfill (refer to the DBFL CEMP for further details).
- 4.19 A specialist ground works contractor will be appointed to carry out the basement excavation works and will carry out a full risk assessment prior to the commencement of work. The basement to be excavated on site will be undertaken under the parent permission on site, and the current alteration proposals will not materially alter the permitted basement footprint.
- 4.20 As set out within the accompanying CEMP, boreholes have been carried out and the ground conditions are generally consistent across the site. These comprise topsoil, alluvial sandy gravel on glacial till. Groundwater was noted within the gravel stratum and may be affected tidally given the proximity of the site to Dublin Bay. Control of groundwater will be required during basement construction and service trenches.
- 4.21 The ground works operation will be carried out in order to ensure that material removed from the ground is taken away at regular intervals in order to reduce the amount of material that can be stored on site. Excavated material will be reused on site where possible subject to the WAC analysis.
- 4.22 IGSL carried out a SILTA Suite (WAC) testing of five samples and these confirmed that the soils were inert, and no issues were raised as to safety of personnel on site or disposal of excavated material to a suitably licensed landfill. A copy of the testing is appended to the CEMP.
- 4.23 On the basis of the foregoing, the impact of the proposed development on land and soils is likely to be long term and slight. No significant environmental impacts are considered likely.

Water

- 4.24 There are no open streams or drainage channels on site. The nearest watercourse is the Howth Stream located 1.7 km up-gradient of the site. This stream, which flows through the Deerpark Estate, discharges into Baldoyle Bay. There is no connection between the stream and the development site.
- 4.25 In accordance with the existing permission, stormwater drainage from the site is to an existing 750mm diameter concrete surface water sewer running along the western boundary of the site and St. Fintan's Church lands, (full details are included in the Engineering Services Report and Drawings prepared for the proposed development by DBFL). This currently drains areas of the Glencarraig estate to the north and Saint Fintan's Catholic Church site to the west before discharging to Sutton Creek (Dublin Bay) to the south of Greenfield Road.
- 4.26 Likewise, in accordance with the existing permission, foul water drainage from the site is to the existing foul water network.

- 4.27 The Engineering Services Report addresses the surface water, water and foul drainage requirements of the proposed development.
- 4.28 The Ecological Impact Statement and Natura Impact Statement assesses these aspects of the proposal and demonstrates that there is no potential for significant adverse impacts on the environment in terms of biodiversity based on the implementation of water-related mitigation measures on site.
- 4.29 In addition, a hydrological and hydrogeological qualitative risk assessment report has been prepared by AWN and is submitted with this application. The report concludes as follows:

“A conceptual site model (CSM) has been prepared following a desk top review of the site and surrounding environs. Based on this CSM, plausible Source-Pathway-Receptor linkages have been assessed “assuming an absence of any measures” in place at the proposed development site that are intended to avoid or reduce harmful effects of the proposed project (i.e. mitigation measures)

It is concluded that while there is an indirect source pathway linkage from the proposed development site via the public sewer and the Ringsend WWTP, the impact of foul effluent from the proposed development will not result in any change to the current regime (water quality or quantity) in any of the Dublin Bay Natural 2000 Sites. There is no other resultant indirect source pathway linkage from the proposed development which could give rise to any such change.

During construction there is potential for a localised spill of hydrocarbons or run-off of water with high suspended solids if unmitigated at the site. It is concluded that there is no likely impact on water quality status within the bay due to the low contaminant loading and attenuation and significant dilution near discharge point. Finally, as outlined in the CEMP report prepared by DBFL (2020), and in line with good practice, mitigation measures have been included in the construction design, management of construction programme and during operation of the proposed development. These specific measures will provide further protection to the receiving soil and water environments.”

- 4.30 As noted above and in the conclusion of the AWN Hydrological and Hydrogeological Risk Assessment Report, the CEMP prepared by DBFL sets out standard mitigation measures relating to sediment and water pollution control and surface water drainage works to be undertaken on site.
- 4.31 The CEMP notes that site works are ongoing on site, including the construction of the attenuation tank and outfall which were permitted under Reg. Ref.: F17A/0615. These elements of the overall development are unaffected by the current proposed alterations.
- 4.32 Having regard to the foregoing, it can be concluded that water quality is not likely to be significantly affected by the proposed development.

Air and Climate

- 4.33 There is potential in the absence of mitigation for a minor degradation of the air quality in a very localised area during certain parts of the construction process. Standard mitigation measures would be appropriate as set out in the

accompanying CEMP. It is considered that there will be no negative impact on air quality or the climate arising from the proposed development following the implementation of mitigation measures.

- 4.34 The Contractor will continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. The CEMP included as Appendix 1 of this Statement contains mitigation measures to ensure that there is no risk of a significant impact in terms of air quality or climate during construction.
- 4.35 The accompanying CEMP prepared by DBFL Consulting Engineers sets out a range of measures to ensure that the proposed development does not have any significant impact on air quality in the area during the construction phase. These include comprehensive measures to ameliorate the risk of dust emissions.
- 4.36 On the basis of these mitigation measures being implemented, it is concluded that the proposed development will not lead to any significant impact on air quality during the construction phase.
- 4.37 As the current SHD application relates to alterations to a permitted residential development on the subject site, it is considered that having regard to the nature and scale of the development, it is unlikely that any significant air quality impacts will arise during the operational phase of the development. The proposed development includes a comparatively modest number of car parking spaces, and basement car parking areas will be provided with adequate ventilation to avoid potential build-up of emissions from vehicles.
- 4.38 In terms of climate, the proposed development incorporates measures to ensure the energy efficiency of the proposed buildings. The Building Lifecycle Report prepared by OMP Architects sets out a range of measures incorporated into the design and fitting out of the scheme to ensure it achieves a high standard of energy efficiency. These include the following:
- High BER ratings will be targeted. It is proposed to target an A2/A3 rating for the apartments this will equate to the following emissions.
 - A2 – 25-50 kwh/m²/yr with CO₂ emissions circa 10kgCO₂/m² year
 - A3 – 51-75 kwh/m²/yr with CO₂ emissions circa 12kgCO₂/m² /year
 - The U-values being investigated will be in line with the requirements set out by the current regulatory requirements of the Technical Guidance Documents Part L, titled “Conservation of Fuel and Energy Buildings other than Dwellings”.
 - Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance Paragraphs 1.2.4.2 and 1.2.4.3 within the Technical Guidance Documents Part L. See below Table 1 of Part L, Building Regulations.
 - The white good package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating.
 - The lighting scheme specifies light fittings which minimise light spill and use low voltage LED lamps.
 - Design measures have been taken to ensure the performance of the apartments is maximised. This includes daylighting to circulation areas, use of natural ventilation to circulation areas, natural ventilation

of the car park, low maintenance landscaping, and use of low maintenance and durable building and roofing materials.

- The scheme features robust, durable landscape treatments.
- Low energy technologies including condensing boilers, natural ventilation, heat recovery ventilation, PV panels, combined heat and power systems and EV charging points will be implemented as required to meet the targeted A2 / A3 ratings for the apartments.
- The Building Lifecycle Report also sets out the accessibility of the site to active transit and public transport facilities, encouraging the use of these modes over private car usage.

4.39 On the basis of the foregoing measures and bearing in mind the scale and size of the proposed alterations, it can be concluded that the proposed development will not result in any significant impact on the climate.

4.40 The design of the development, including the water attenuation and drainage systems on site, take into account an additional 10% intensity of storm events based on future climate change.

4.41 The wind and microclimate assessment report submitted herewith does not identify any significant effects in relation to wind or microclimate, having regard to the design of the scheme which minimises wind exposure and impacts.

4.42 It is not anticipated that the proposed development will have any significant impact on the air and climatic environment of the surrounding area following the implementation of mitigation measures.

Noise and Vibration

4.43 As set out within the CEMP which is included as Appendix 1, construction activities will be carried out in compliance with the recommendations of BS 5228, Noise Control on Construction and open sites part 1 and comply with BS m6187 Code of Practice for Demolition.

4.44 The CEMP sets out a series of measures which will be implemented during the construction phase to monitor and control noise and vibration impacts. Environmental monitoring locations to monitor noise and vibration are identified within Appendix A of the CEMP. It is noted that site works, and environmental monitoring are currently ongoing on the subject site, comprising the implementation of the existing permission to which the current alterations relate.

4.45 As the proposed development comprises the provision of residential units within an existing built up area, it is considered that no significant impacts in terms of noise and vibration will arise during the operational phase.

4.46 It is therefore considered that there will be no significant noise or vibration effects on the environment during the operational phase and construction phases provided that the mitigation measures described within the CEMP are implemented.

Landscape

4.47 The proposed development has been designed to integrate effectively into the existing landscape character of the area. The alterations to the permitted development on site will include the provision of two additional storeys to two permitted apartment buildings, and the replacement of a permitted series of 2/3 storey houses with three storey apartment buildings. The impact of the development has been assessed in the visual impact assessment (VIA) prepared by Brady Shipman Martin. The designed scheme seeks to harmonise and integrate the development within the existing landscape and the broader community. The design rationale employed mitigates potential negative effects on the landscape character of the area.

4.48 The LVIA submitted herewith concludes as follows:

“The SHD application relates to an amendment to the residential component of a previously permitted development and is fully located on ‘RA – Residential’ zoned lands.

Within this context the proposed development is well-sited, being located within the developed sub-urban setting setback from the coast and visually anchored by retained mature trees.

It is clear from the Photomontages, that while the proposed amended development will be more visible than the permitted development it does not alter the existing intrinsic character of the view or its important defining features.

Despite the proposed increase in height, the proposed amended development maintains the visual quality of views to and from the surrounding area and remains in-keeping with the manner in which existing development interacts with the background and the skyline.

In conclusion the proposed amended development does not adversely impact on its immediate or wider setting or on protected or sensitive aspects of the landscape and visual environment, including views of St. Fintan’s Church and grounds and of Santa Sabina Convent (protected structures).”

4.49 On the basis of the contents of the LVIA report submitted herewith, it is concluded that the proposed development will not result in any significant impact on the surrounding landscape.

Material Assets

4.50 The land on which the site is situated is a material asset. The area of the site subject to the proposed alterations to the permitted development is zoned for residential development, and as such, the use of this material asset in a manner compatible with the zoning designation, is entirely appropriate. Once constructed, the operational phase will provide an important material asset for the residents in terms of providing residential accommodation and associated public open space for amenity and recreation.

4.51 The accompanying TTA prepared by AECOM Consulting Engineers confirms that the proposed alterations will not result in a significant impact on traffic or road capacity in the vicinity of the development site.

- 4.52 The TTA states *“it is concluded that the proposals will not result in a material deterioration of existing road conditions and as a result there are no significant traffic or transportation related reasons that should prevent the granting of planning permission for the proposed development.”*
- 4.53 No significant impact on material assets is likely on foot of the proposed development.

Archaeology, Architecture and Cultural Heritage

- 4.54 The subject application relates to alterations to a permitted development which does not materially alter the footprint of the permitted development and therefore has no potential for additional impacts in respect to archaeology. As noted above, the clearance of the site has already occurred pursuant to the existing permission to which the current alteration proposals relate.
- 4.55 The impact of the proposed alterations to the permitted development in terms of additional building height and the relationship with the protected structures on the sites to the west and east is assessed in the Conservation Report prepared by Cathal Crimmins Architects. The report demonstrates that the proposals do not negatively impact on the setting of these protected structures.
- 4.56 The report prepared by Cathal Crimmins Architects concludes as follows:

“The proposed alterations to the permitted development as a result of the proposed increase in height of two floors to Block A-B and C2, and the alteration of 2 and 3 storey houses to 3 storey apartment blocks within the northern part of the site will have little or no impact on the character of either of the existing building complexes. As clear from the visual impact assessment, the proposed buildings will be largely screened by existing tree planting and existing neighbouring buildings. Even where the revised development is visible, the proposed finishes to the exterior elevations ensure that the proposed apartment buildings blend in to the background. This is in contrast to with the elephantine nature of the existing sports hall at Santa Sabina School.

The avenue, which is one of the few surviving demesne features associated with Santa Sabina will be retained in the proposal. The proposed development is located beyond it to the north of the avenue away from the road and St Fintan’s Church and its associated buildings. The existing landscaping will be supplemented to add to the visual separation between the school buildings and the proposed development. St Fintan’s Church will retain its prominence on the corner of the Greenfield and Church Roads, as the proposed buildings are set back and largely screened by planting or the church and its presbytery In conclusion, there will be no significant adverse impact from the proposal.”

- 4.57 On this basis it is considered that the proposed development will not have any significant impact on archaeology, architectural and cultural heritage.

Vulnerability of the project to risks of major accidents and/ or disasters

- 4.58 The current application puts forward proposed alterations to a permitted residential development. There are no characteristics of the project itself which pose any significant risk of a major accident or disaster.
- 4.59 As set out above, the subject lands are not proximate to any Seveso/COMAH designated sites. Therefore, it is considered that there is no particular vulnerability to major accidents or disasters associated with Seveso / COMAH sites.
- 4.60 The accompanying Site-Specific Flood Risk Assessment report prepared by DBFL Consulting Engineers notes that the alterations proposed as part of the current application will not significantly change the footprint of the main apartment blocks or significantly alter the surrounding landscape compared to the previous permission. The SSFRA states that *“It can therefore be assumed there will be no increase in flood risk from these amendments.”*
- 4.61 Notwithstanding this, the Site-Specific Flood Risk Assessment report addresses the flood risk associated with the overall site to which the current application for alterations relates. The site is identified as falling within Flood Zone C. The SSFRA proposes mitigation measures to ameliorate flood risk. Based on the implementation of these mitigation measures, the SSFRA report concludes that the proposed development will not increase the risk of flooding in the adjacent area or on adjacent roads.
- 4.62 Taking cognisance of the other sections contained within this EIA Screening Statement and the accompanying plans and particulars, it is not considered that the proposed development site or the existing context presents risks of major accidents or disasters, including external man made or natural disasters.
- 4.63 Having regard to the foregoing it is considered that no significant impacts arise in terms of the vulnerability of the project to major accidents or disasters.

The inter-relationship between the above factors

- 4.64 It is considered that any of the previously identified relatively minor impacts could not in themselves be considered significant nor would they cumulatively result in a likely significant effect on the environment.
- 4.65 In this regard, the relevant assessments undertaken, including the Natura Impact Statement have examined and addressed the potential for cumulative effects arising from other ongoing, existing, or permitted developments in the vicinity.
- 4.66 No significant environmental impacts are considered to arise.

4. The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7.

- 4.67 Schedule 7 of the Planning and Development Regulations 2001 (as amended) details the criteria for determining whether sub-threshold development listed in Part 2 of Schedule 5 should be subject to an environmental impact assessment.

- 4.68 It is considered that there are no likely significant effects on the environment in terms of each of the chapter headings, individually or cumulatively. The factors referred to under Schedule 7 have been addressed in so far as they are relevant above.

Type and Characteristics of Potential Impacts

Could the type and nature of characteristics of the magnitude and spatial extent of the impact (for example on a geographical area and size of the population likely to be affected) be considered to be likely to cause significant effects on the environment?

- 4.69 The proposed development is located in a suburban context within an existing built up area. The proposed uses are consistent with land in such a location. The proposed alterations to the permitted development represent a high quality, compatible and sustainable land use when compared to that currently existing at the site, and indeed the permitted development. The works during the construction phase may have a minor impact on the immediate area, however, neighbouring residential development is sufficiently set back from site boundaries for these impacts to be reduced.

- 4.70 Neither the works during construction nor the development in its operational phase are of such a scale or extent that would be considered to be likely to cause significant effects on the environment in the geographic area or on any considerable quantum of the population in the vicinity.

Could the type and characteristics of the transboundary nature of the impact be considered to be likely to cause significant effects on the environment?

- 4.71 Any minor impacts will be contained in the immediate vicinity of the site. The subject lands are not located on any geographical or other boundary of relevance to assessment of likely significant effects on the environment.

Could the type and characteristics of the intensity and complexity of the impact be considered to be likely to cause significant effects on the environment?

- 4.72 The proposed development is not of any significant intensity or complexity such that would be likely to cause significant effects on the environment.

Could the type and characteristics of the probability of the impact be considered to be likely to cause significant effects on the environment?

- 4.73 There is potential for minor nuisance impacts (e.g. noise) and pollution during the construction phase to occur. However, construction works in an urban environment are entirely normal and working hours will be limited generally to hours set by condition or as otherwise agreed. All works carried out will be undertaken in accordance with the mitigation measure referred to in the CEMP and other accompanying reports. Any residual effects will be short term, local and minor. Therefore, there is no likelihood of significant effects on the environment.

Could the type and characteristics of the expected onset, duration, frequency and reversibility of the impact be likely to cause significant effects on the environment?

- 4.74 Any of the minor impacts identified would occur during the construction phase, and they will therefore be short in duration. There are no significant negative impacts considered to occur during the operational phase. The frequency will vary throughout the construction phase; however, the impact is still not considered to be significant.

Could the type and characteristics of the cumulation of the impact with the impact of other existing and/or development the subject of a consent for proposed development be likely to cause significant effects on the environment?

- 4.75 The proposed alterations to the permitted development, to provide additional apartment units, fall under this use and is therefore considered acceptable at the location. The development of the site is to be expected in an urban context in order to maximise land resource and deliver compact urban growth. The scale and nature of the proposed scheme and other permitted schemes in the vicinity are not such that the characteristic of any potential impacts in culmination with each other are likely to cause significant effects on the environment.

- 4.76 In preparing this statement and the supporting documentation submitted herewith, the authors and design team have been cognisant of relevant existing, ongoing, and permitted developments in terms of the potential for cumulative impacts on the environment. These include *inter alia* the permitted development (to which the current alterations relate) which is currently being progressed on site and other surrounding developments.

- 4.77 The potential for cumulative impacts is also addressed in detail in the Natura Impact Statement carried out by BES which accompanies this application. The NIS considers permitted developments including recent SHD applications in the surrounding area, and the permitted Greater Dublin Drainage project. Having considered these relevant projects in terms of potential cumulative impacts, the NIS notes *“it is concluded that there will not be an in-combination contribution by the proposed residential development at Santa Sabina to potential adverse impacts on the European sites as discussed.”*

- 4.78 It is concluded that the cumulative effect of the proposed development, in combination with other developments would not have any significant impact on the environment.

Could the type and characteristics of the possibility of effectively reducing the impact be likely to cause significant effects on the environment?

- 4.79 It is considered that there will be no significant effects associated with mitigation measures or methods to be undertaken in order to reduce likely significant effects on the environment.

- 4.80 Any mitigation measures referred to in this report to manage noise, dust and/or pollution during construction and operational phases are subject to standard policies and practices. Please refer to the appended CEMP and the

Construction Waste Management Plan prepared by DBFL Consulting Engineers for further details.

5.0 SUMMARY & CONCLUSIONS

- 5.1 This Environmental Impact Assessment Screening Statement has been prepared to accompany this Strategic Housing Development application to An Bord Pleanála for amendments to the development permitted under Reg. Ref.: F17A/0615 and relates to 102 no. residential units in total, i.e. new or altered, and associated works, at this site that formerly formed part of Santa Sabina Dominican College and Convent Complex, Greenfield Road, Sutton, Dublin 13. St. Dominic's Convent Santa Sabina, located to the east of the application site, is a protected structure (RPS No. 0794).
- 5.2 The Statement has assessed the potential impact of the proposed development on the environment in response to the requirements of the Regulations and Section 11 of the SHD application form. The proposed development is substantially below the thresholds for a mandatory EIAR. The screening exercise has been completed in this Statement and the methodology used has been informed by the available guidance, legislation and directives.
- 5.3 The preceding sections of this Screening Statement refer to mitigation measures which are set out within the accompanying documentation outlined above. For the avoidance of doubt, the mitigation measures within these accompanying reports, which are referred to in this Statement, should be considered as mitigation for the purposes of the competent authority's EIA screening determination.
- 5.4 When undertaking the EIA Screening Assessment in respect of the current application, and the written determination for same, it would be appropriate for the Board to refer to these mitigation measures which are referenced in this Screening Statement.
- 5.5 It is considered that a sub threshold EIAR is not required for the proposed development for the following reasons as set out in this screening exercise:
- The proposal falls significantly below the thresholds under Schedule 5 of the Planning and Development Regulations 2001-2019;
 - The proposal relates to alterations to a permitted development, under which site enabling, infrastructure and clearance works / development have already been undertaken;
 - The site makes optimum use of a greenfield land resource and utilises existing servicing provision;
 - The development will be connected to public services such as water, foul and storm sewers;
 - The site will not have any significant impact on any European Sites or other sites or structures designated for protection.
 - Surface water is to be directed through the public surface water system which ultimately enters Dublin Bay. Surface water will be

subject to oil and hydrocarbon filters and attenuated in the proposed surface water system for the proposed scheme;

- The proposed drainage strategy will contribute to improved retention of surface water on site through attenuation measures;
- The mitigation measures set out in the CEMP will be employed to mitigate any risk of noise, dust or pollution;
- No identified impact in this screening exercise, cumulatively or individually is considered likely to cause significant effects on the environment.

5.6 A Natura Impact Statement has been prepared by BES and accompanies the application. The NIS reaches the following conclusion in respect of the proposed development:

“This Natura Impact Statement has considered the potential impacts of the proposed amendments to the permitted residential development at Santa Sabina on the integrity of the European sites within 15 km of the subject site.

It is considered that this Natura Impact Statement provides sufficient relevant information to allow the Competent Authority (An Bord Pleanála) to carry out a Stage 1 AA Screening, and if necessary a Stage 2 Natura Impact / Appropriate Assessment, under Article 6 of the Habitats Directive (92/43/EEC) in light of their conservation objectives.

It has already been concluded at the previous screening stage above that the risk of any significant effect on any European Site arising from foul drainage impacts of the proposed development, whether considered on its own or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available

On the basis of the second stage assessment carried out above, it can be concluded that the possibility of any adverse impacts on the integrity of any European Site having regard to its conservation interests, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.”

5.7 In conclusion, it is considered that the proposed development will not have any significant impacts on the environment. All recommended mitigation measures and standard practices will be employed throughout the construction and operational phase of the development to ensure that the proposed development will not create any significant impacts on the quality of the surrounding environment.

5.8 In the event that the screening determination carried out by the Board reaches the conclusion that the proposed development is not likely to have significant effects on the environment, the Board’s attention is specifically

drawn to the requirement that the Board's screening determination must comply with the requirements of Article 299C(2) of the Planning and Development Regulations, as amended, which provides:

“(2) (a) Paragraph (b) applies where the screening determination is that the proposed development would not be likely to have significant effects on the environment and the applicant has provided, under article 299B(1)(c), a description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment of the development.

(b) The Board shall specify such features, if any, and such measures⁶, if any, in the screening determination.”

⁶ Commonly referred to as mitigation measures.

**APPENDIX 1 – CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN
PREPARED BY DBFL**

Project

Santa Sabina SHD - Proposed Alterations to Reg. Ref.: F17A/0615

Report Title

Construction and Environmental Management Plan (CEMP)

Client

Parsis Limited

INFRASTRUCTURE



DBFL CONSULTING ENGINEERS

March 2020

Document Control

Project Title: Santa Sabina SHD- Proposed Alterations to Reg. Ref.: F17A/0615
at site that formerly formed part of Santa Sabina Dominican College
and Convent Complex, Greenfield Road, Sutton, Dublin 13

Project Number: 190008

Report Ref: 190008-DBFL-XX-XX-RP-Z-5002

Author: R. Moynihan

Reviewed By: S.Curran

Approved By: P. Forde

Distribution: Design Team
An Bord Pleanala

DBFL Consulting Engineers

Dublin Office
Ormond House,
Upper Ormond Quay,
Dublin 7

Tel 01 4004000
Email info@dbfl.ie
Web www.dbfl.ie

Waterford Office
Suite 8b The Atrium,
Maritana Gate,
Canada Street,
Waterford. X91 W028.

Tel 051 309500
Fax 051 844913
Email info@dbfl.ie
Web www.dbfl.ie

Revision	Issue Date	Description	Prepared	Reviewed	Approved
P01	11.12.2019	Draft Issue	RTM	SVC	PMF
P02	16.12.2019	Issued for Planning	RTM	SVC	PMF
P03	02.03.2020	Issued for SHD Planning	RTM	SVC	PMF

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	PROPOSED DEVELOPMENT.....	3
3	COMPOUND FACILITIES/ PARKING.....	5
4	ACCESS & TRAFFIC MANAGEMENT	6
5	ROAD CLEANING	10
6	WORKING HOURS.....	11
7	CONSTRUCTION METHODOLOGY.....	12
8	NOISE & VIBRATION	15
9	SEDIMENT AND WATER POLLUTION CONTROL PLAN.....	18
10	BIODIVERSITY PROTECTION MEASURES	20
11	SURFACE WATER DRAINAGE WORKS.....	21
12	DUST CONTROL.....	23
13	CONCLUSION	26
	Appendix A – Potential Environmental Monitoring Locations	
	Appendix B – Environmental Testing	

1 INTRODUCTION

A planning permission for a residential development on this site has been granted by Fingal County Council (FCC) under Reg. Ref.: F17A/0615 for 96 residential units. Under the permitted development the following enabling works are currently being undertaken or have been completed:

- A new access road to serve the neighbouring Santa Sabina School, along with all associated infrastructure including a surface water outfall and attenuation tank, has been constructed
- The construction of 90m of the new access road to serve the proposed residential development is under construction
- The installation of the surface water outfall and attenuation tank
- The watermain connection to the public network

The proposed alterations to the permitted development relate to 102 no. residential units, including the provision of 47 no. additional residential units and alterations / redesign of 55 no. permitted residential units, which results in an increase in the total number of residential units on the site from 96 to 143.

The proposed alterations to the permitted development are located entirely on lands zoned RS- Residential. No alterations are proposed to Block B2-B3 (24 no. units) and C2 (17 no. units), which contain a total of 41 no. permitted apartments and a creche. The permitted access road to the adjacent school has been implemented and other site development works associated with the permitted residential development, which are not the subject of the proposed alterations, have commenced on the application site as provided for under Reg. Ref.: F17A/0615.

This Construction & Environmental Management Plan (CEMP) is for the works associated with the construction of a proposed SHD residential development at Santa Sabina, Greenfield Road, Sutton, Dublin 13.

This CEMP addresses noise and vibration, traffic management, working hours, pollution control, dust control, road cleaning, compound / public health facilities and staff parking, all associated with the construction works.

This CEMP also takes on board the recommendations made in the Demolition and Construction Management Plan submitted to FCC April 2019 for the works being undertaken as part of the Reg. Ref.: F17A/0615 planning permission.

2 PROPOSED DEVELOPMENT

The permission for a strategic housing development at this site that formerly formed part of Santa Sabina Dominican College and Convent Complex, Greenfield Road, Sutton, Dublin 13. St. Dominic's Convent Santa Sabina, located to the east of the application site, is a protected structure (RPS No. 0794).

The development comprises alterations to the development permitted under Reg. Ref.: F17A/0615 (currently under construction) consisting of the following:

- Provision of 2 additional storeys to Block A-B1 and alterations / redesign to the 3 permitted storeys below to provide a five storey building containing 42 no. apartments (consisting of 9 no. 1 beds, 29 no. 2 beds and 4 no. 3 beds), and including associated alterations to the courtyard communal amenity space.
- Provision of 2 additional storeys to Block C1 and alterations to the 3 permitted storeys below to provide a five storey building containing 28 no. apartments (consisting of 28 no. 2 beds).
- Replacement of Block D, comprising 10 no. two and three storey semi-detached houses, with 3 no. three storey apartment buildings (Block D1, D2 and D3) containing 32 no. apartments (consisting of 6 no. 1 beds, 21 no. 2 beds and 5 no. 3 beds), and including provision of communal amenity space to the north.
- The alterations to Block A-B1 and C1 include associated alterations to the basement under these blocks primarily relating to the omission of a core and associated alterations to plant, waste storage, car and cycle parking provision.
- The proposed alterations include the provision of balconies / terraces to the external elevations of Block A-B1, C1, D1, D2, and D3.
- An ESB substation and switchroom building and bin collection point are proposed in place of three permitted car parking spaces adjoining the western boundary of the site.
- The proposal includes alterations to the permitted car and cycle parking at basement and ground level, resulting in the provision of a total of 168 no. car parking and 270 no. bicycle spaces.
- The proposed alterations include all associated ancillary site development works.

The proposed alterations to the permitted development relate to 102 no. residential units, including the provision of 47 no. additional residential units and alterations / redesign of 55 no. permitted residential units, which results in an increase in the total number of residential units on the site from 96 to 143.

The proposed alterations to the permitted development are located entirely on lands zoned RS- Residential. No alterations are proposed to Block B2-B3 (24 no. units) and C2 (17 no. units), which contain a total of 41 no. permitted apartments and a creche. The permitted access road to the adjacent school has been implemented and other site development works associated with the permitted residential development, which are not the subject of the proposed alterations, have commenced on the application site as provided for under Reg. Ref.: F17A/0615.



Figure 1 - Site Location & Approximate Application Boundaries, Santa Sabina College, Greenfield Road, Sutton, Dublin 13.

Note the infrastructural works proposed as part of this application including the roads layout, foul drainage, surface water drainage and watermain layout follow the same design and strategy as that agreed under planning permission Reg. Ref.: F17A/0615

3 COMPOUND FACILITIES/ PARKING

The construction compound serving the construction works under planning Reg. Ref.: F17A/0615 will be utilised for the works associated with this SHD. This compound shall be entirely within the site boundaries. Site accommodation to be provided will include suitable washing / dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure.

The site compound shall not be provided over the attenuation tank constructed under planning application Reg. Ref.: F17A/0615 however this area can be utilised for staff and visitor car parking as the tank has been designed to accommodate this loading. The compound shall be constructed using a clean permeable stone finish and will be enclosed with security fencing. A permeable hardstand area will be provided for staff parking and these areas will be separate from designated machinery / plant parking.

A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.

A series of 'way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.

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.

4 ACCESS & TRAFFIC MANAGEMENT

The site access traffic management plan to service the permitted development works under planning application Reg. Ref.: F17A/0615 was agreed and submitted to FCC mid-December 2019 to facilitate works on site. The alterations submitted under this SHD application will not require a change in strategy in regards to traffic management.

The primary construction access will be provided to the south of the site off Greenfield Road. (see Figure 2). Advance warning signs indicating “CONSTRUCTION TRAFFIC CROSSING” will be erected on the approach to the site in both directions. These signs will comply with the Fingal County Council and TII requirements. Particular care is to be taken due to proximity to the Santa Sabina Dominican College. Warning signage will be provided for pedestrians and other road users on all approaches in accordance with Chapter 8 of the Traffic Signs Manual and the Contractor’s Traffic Management Plan.

An Outline Construction Traffic Management Plan has been prepared by AECOM to support this application. The Contractor has previously prepared and agreed a traffic management plan with FCC for the permitted works under Reg. Ref.: F17A/0615 as outlined above and will prepare a revised Traffic Management Plan for the altered development which will be agreed with FCC prior to the commencement of construction activities on site. This Traffic Management Plan will be in accordance with the principles outlined below and shall comply at all times with the requirements of:

- Traffic Signs Manual Chapter 8 Temporary Traffic Measures and Sign Roadworks (2008);
- Addendum Transport Chapter 8, Temporary Traffic Measures and Sign Roadworks (2008);
- Traffic Management Guidelines, Department of Transport (2003);
- Fingal County Council Development Plan.

The principal objective of the TMP is to ensure that the impacts of all building activities generated during the construction phase upon the public (off-site), visitors to the subject site (on-site) and internal (on-site) workers environments, are fully considered and proactively managed/programmed thereby ensuring that safety is maintained at all times, disruption is minimised and undertaken within a controlled hazard free/minimised environment. The TMP will also ensure that all deliveries to site are co-ordinated to avoid

multiple deliveries arriving on site at the same time. All orders placed with suppliers will refer to this TMP and identify the preferred route to the drop off point.



Figure 2 - Site Access & Egress Routes

During the general excavation of the foundations there will be additional HGV movements from the site. All suitable material will be used for construction and fill activities where possible and appropriate. All spoil material will be removed to a registered landfill site which will be agreed in full with FCC. It should be noted that, as the footprint of the basement of the proposed SHD development remains unaltered to that approved under the previous planning application the volume of material excavated from the site will remain largely unchanged.

In addition to the traffic generated by the disposal of surplus subsoil from the site, there will be traffic generated from deliveries of construction materials and equipment. Construction traffic generated during the development works tends to be during off-peak hours. Such trips would generally be spread out over the full working day and are unlikely to be higher than the peak hour predicted for the operational stage.

Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff. On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. These employees will generally depart after 18:00. It should be noted that a large proportion of construction workers would arrive in shared transport.
- Excavation plant and dumper trucks 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 following estimates have been made in respect of the construction period impacts:

- Appropriate on-site parking and compounding will be provided to prevent overflow onto the local network.
- During the period of excavation and disposal off site, it is likely that up to 2 no. truck trips per hour (maximum) will be generated by vehicles removing unsuitable spoil from the site to allow for the construction of the development and for the removal of demolition waste.

The traffic volumes for the proposed SHD development will only be marginally greater than the volume required to facilitate the construction of the permitted development and turning movements into the site shall be accommodated without delay. In general, the

impact of the construction period will be temporary in nature and less significant than the final post development operational stage.

Reductive/mitigation measures

Traffic Management during Construction

A Traffic Management Plan will be prepared prior to the commencement of construction work on site. This plan will be prepared in consultation with FCC in order to agree on traffic management and monitoring measures are outlined below:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- The surrounding road network will be signed to define the access and egress routes for the development.
- The traffic generated by the construction phase of the development will be strictly controlled in order to minimise the impact of this traffic on the surrounding road network.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- All employees and visitor's vehicle parking demands will be accommodated on-site.
- A programme of street cleaning (at site frontage on Greenfield Road) will be implemented.

5 ROAD CLEANING

Provision will be made for the cleaning by road sweeper etc. of all access routes to and from the site during the works. Road cleaning shall be undertaken as required during the completion of the works.

All road sweeping vacuum vehicles will be emptied off site at a suitably licensed facility. This is in compliance with condition 19 of the grant issued Reg. Ref.: F17A/0615.

6 WORKING HOURS

For the duration of the proposed infrastructure works the maximum working hours shall be 08:00 to 19:00 Monday to Friday (excluding bank holidays) and 08:00 to 14:00 Saturdays, subject to the restrictions imposed by the local authorities. No working will be allowed on Sundays and Public Holidays. Subject to the agreement of the local authorities out of hours working may be required for the watermain connection.

7 CONSTRUCTION METHODOLOGY

Demolition

As the site was a greenfield site no extensive demolition works are noted across the site with the exception of the relocation / removal of an existing oil tank, which will be undertaken under the planning approval Reg. Ref.: F17A/0615.

Protection of Adjacent Areas

Work areas will be segregated from the adjacent public areas including the neighbouring school for the extent of the project by means of a suitable hoarding fence. All hoardings will be designed by a competent Structural Engineer to resist wind loads.

There is an existing 450mm diameter public foul sewer crossing the site and a number of smaller 150mm foul sewers that serve the neighbouring school. All services to be maintained will be protected by the setting up of exclusion zones so heavy plant cannot drive over it.

All materials being hoisted by crane or other means will be controlled using guide ropes where possible.

Site Clearance & Excavation

The majority of the site has been cleared of topsoil to facilitate the works proposed under the previous planning application, refer to **Figure 3**. The remaining topsoil will be removed to facilitate the construction works proposed under this application.

A specialist ground works contractor will be appointed to carry out the basement excavation works and will carry out a full risk assessment prior to the commencement of work.

Boreholes have been carried out and the ground conditions are generally consistent across the site. These comprise topsoil, alluvial sandy gravel on glacial till.

Groundwater was noted within the gravel stratum and may be affected tidally given the proximity of the site to Dublin Bay. Control of groundwater will be required during basement construction and service trenches.



**Figure 3 - Site Clearance Undertaken Under Planning Grant
Reg. Ref.: F17A/0615**

The ground works operation will be carried out in order to ensure that material removed from the ground is taken away at regular intervals in order to reduce the amount of material that can be stored on site. Excavated material will be reused on site where possible subject to the WAC analysis.

It should be noted that IGSL carried out a SILTA Suite (WAC) testing of five samples and these confirmed that the soils were inert, and no issues were raised as to safety of personnel on site or disposal of excavated material to a suitably licensed landfill. A copy of the testing is appended (Appendix B)

Material Hoisting

It is envisaged that tower cranes will be erected to hoist materials on site in the construction of apartments. The cranes will be erected within the building envelope. The

cranes will be designed by a specialist to free stand full height without the need to be connected to the structure.

The crane will be founded on a concrete base foundation designed in consideration of the existing ground conditions and will most likely be seated on piled foundations. It is intended that the tower crane will be erected by a mobile crane from within the site boundary.

Careful consideration will be given to the recruitment of suitably qualified crane drivers and banksmen.

Construction and Demolition Waste Management Plan

The procedures set out in the Demolition and Construction Waste Management Plan are put in place in order to improve waste management on site, increase segregation and minimise construction waste costs. Waste arising from the site will be considered in relation to the waste management hierarchy of prevention, reduce, reuse, recycle, energy recovery and disposal.

As part of the permitted development (Reg. Ref.: F17A/0615), a Demolition and Construction Waste Management Plan was compiled in accordance with the “Department of the Environment Heritage and Local Government Best Practice Guidelines on the preparation of Waste Management Plans for construction and demolition projects”. This plan was submitted to FCC as part of the pre-commencement conditions.

An Outline Demolition and Construction Waste Management Plan is included with this application, refer to 190008-DBFL-XX-XX-RP-Z-5003 Outline Demolition and Waste Management Plan. However, it is noted that the construction waste generated as part of these works will not be significantly higher as the building footprint remains largely unaltered.

8 NOISE & VIBRATION

The construction of the project will involve the use of noise generating construction plant. There will also be an increase in noise relating to delivery of materials to site. It is intended that noise from the construction phase of the development will be kept to a minimum in accordance with:

- “BS 5228: Noise Control on Construction on Open Sites”
- Guidelines for the Treatment of Noise and Vibration in National Road Schemes (NRA, 2014)
- Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5 - Noise and Vibration

The proposed development shall comply with these documents during all phases of construction. Construction work will not be performed at night and will usually be limited to the hours indicated in the relevant planning permission.

The noise limits to be applied for the duration of the infrastructure works are those specified in the B Category of BS 5228. These limits are summarised below and will be applied at the nearest sensitive receptors to the works.

- Night (23:00-07:00) = 50dB
- Evening (19:00-23:00) = 60dB
- Day (07:00-19:00) = 70dB

The total noise (LAeq) which should not be exceeded during daytime is therefore 70dB. DBFL have prepared calculations of the approx. noise level expected to the south of Greenfield Road, refer to Appendix C.

It is also proposed that communications be maintained between the Developer, the Local Authority, the neighbouring School, Church and Local Residences throughout the construction phase of the works to ensure that noise emission and vibrations are maintained at a low level and that any possible complaints can be rectified speedily.

All works on site shall comply with BS 5228-2009 which gives detailed guidance on the control of noise and vibration from construction activities. In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

- Avoid unnecessary revving of engines and switch off equipment when not required.
- Keep internal haul roads well maintained and avoid steep gradients.
- Minimise drop height of materials.
- Start-up plant sequentially rather than all together

More specifically the Contractor shall ensure that:

- Regular and effective maintenance by trained personnel is carried out to reduce noise and / or vibration from plant and machinery.
- The selection of construction plant with low potential for generating noise.
- The siting of noisy construction plant as far from neighbouring properties as possible.
- The erection of temporary barriers around items such as generators or compressors if required.
- Any and all ancillary plant shall be positioned so as to cause minimal noise disturbance
- Where construction activities are required in close proximity to neighbouring noise sensitive properties, a solid hoarding of approximately 2.5m in height should be erected to provide a degree of acoustic screening to the lower storeys.
- An acoustically screened area should be provided on the site specifically for noisy operations such as grinding and cutting metal.
- A site representative responsible for matters relating to noise and vibration will be appointed prior to construction on site.
- Hours are limited during which site activities likely to create high levels of noise and vibration are carried out.

The contractor will be responsible for maintaining noise and vibration environmental monitoring throughout the duration of the works. Refer to appendix A for environmental monitoring locations during demolition and main works contracts. Noise and vibration samples are to be collected on a daily basis; and levels of noise and vibration during busy construction periods recorded and an average taken, and a site record of what activities were being undertaken at that time is to be recorded. All data, results and limits are to be referenced in accordance with the EPA guidelines for the Environmental Protection Agency Act 1992 (Noise) Regulations 1994 and with British Standards on ground-borne

vibration and damage BRE 403. Sampling data, results and limits are to be outlined and supplied to DBFL Consulting Engineers in a tabular format.

The developer shall comply with the requirements set out in the Codes of Practice from the Drainage Division, the Roads, Streets & Traffic Department and the Noise & Air Pollution Section.

9 SEDIMENT AND WATER POLLUTION CONTROL PLAN

All works carried out as part of these infrastructure works will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will co-operate in-full with the Environmental Section of FCC. Particular care must be taken due to the site's proximity to the sea.

It is noted that the attenuation tank to serve the residential development along with the associated petrol interceptor and outfall to the public system will be constructed by the time the basement car park works are being undertaken on the site. This attenuation tank and outfall are being constructed under permitted development Reg Ref.: F17A/0615.

As part of the overall construction methodology, the following issues will be addressed and have been identified as being of particular risk and/or concern to pollution.

- Sediment & Erosion –adjacent waterbodies/groundwater needs to be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the construction phase. To prevent this from occurring surface water discharge from the site will be managed and controlled for the duration of the construction works until the full drainage system can be connected to the attenuation tank and outfall currently being constructed as part of the permitted development Reg. Ref.: F17A/0615. A temporary positive drainage system shall be installed prior to the commencement of the construction works. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed before being discharged in a control manner. The surface water will then be discharged into the below ground attenuation tank before outfalling into the public surface water network via the permanent outfall for the site this. This arrangement will eliminate the need for additional works close to the site boundary and near the outfall. It will also allow surface water runoff from the construction works to be held on site within the attenuation tank should it be needed. By directing the surface water from the construction works through this temporary positive drainage system and then through the permanent attenuation tank and outfall it will ensure that:
 - Site disturbance is minimisation
 - Implement sediment control (as outlined above)
 - Minimise the potential for erosion
 - Prevent sediment-contaminated water leaving the site

- Over Ground Oil / Diesel Storage – Only approved storage system for oil / diesel within the site will be permitted, (i.e. all oil / diesel storage to be located within a designated area placed furthest away from adjacent waterbodies and contained within constructed bunded areas e.g. placed on 150mm concrete slab with the perimeter constructed with 225mm solid blockwork rendered internally). The bunded area will accommodate the relevant oil / diesel storage capacity in case of accidental spillage. Any accidental spillages will be dealt with immediately on site however minor by containment /removal from site. Any significant storage of hydrocarbons is not envisaged as construction vehicles will be refuelled off site
- Concrete Washout – The washing out of concrete trucks on site will not be permitted as they are a potential source of high alkalinity in waterbodies. Consequently, it is a requirement that all concrete truck washout takes place back in the ready-mix depot.
- Disposal of Wastewater off Site – The Site Management Team will maintain a record of all receipts for the removal of toilet or interceptor waste off site to ensure its disposal in a traceable manner. These will be available for inspection by the Environment Section of Fingal County Council at all times.
- Road Sweepers / Cleaning – The cleaning of public roads in and around the subject site will be undertaken to reduce environmental impacts and care will be taken to prevent any pollution of watercourses from this activity.

10 BIODIVERSITY PROTECTION MEASURES

The Ecology Report prepared by Biosphere Environmental Services has noted that 'there are no protected terrestrial land mammals such as badgers associated with the site' and 'as the works do not required the removal of trees or vegetation, birds which may next on the site will be unaffected.'

All mitigation measures listed in the Natura Impact Statement prepared by Biosphere Environmental Services will be implemented in full.

All site clearance and landscaping works will comply with current legislative requirements and best practice. All retained trees that are within or close to the working wayleave of the proposed development will be protected in accordance with the requirements of British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction' – Recommendations, with protective fencing being installed around all trees to be retained, prior to commencement of development. The planting plans and landscaping proposals will ensure that no invasive species are introduced, either deliberately or inadvertently, to the site.

11 SURFACE WATER DRAINAGE WORKS

It is proposed to construct drainage infrastructure in accordance with the plan shown on DBFL drawings 190008-DBFL-XX-XX-DR-C-3000.

Where drainage infrastructure serving areas outside the development site are located within a current development, the drainage infrastructure will be constructed and protected through the following measures:

- Contractor to produce as-built construction records of drainage infrastructure: These records will be submitted to the engineer for approval in advance of handover. The as-built records will be reviewed and will need to be approved by the engineer before practical completion can be certified. The as-builts will be used by site personnel as a working record of where drainage infrastructure is located. The locations of these will be recorded on the as-built and will be marked out on the ground in advance of any works commencing in later stages. This methodology will be formally incorporated into a method statement to be completed by the groundworks sub-contractor before excavations commence.
- Marker tape to be provided on top of sewers running through live areas of site: As part of the methodology laying of drainage pipes, drainage works will have marker tape placed at a depth of 300mm above the pipe to warn the excavator and banksman of the service below. It is noted that the placing of marker tape over drainage lines is not a standard construction detail. However, the vulnerability of live drainage infrastructure serving a previous phase of development is noted and these measures will form part of the works.
- Site personnel to be informed of works already completed: As part of the Safe System of Work Plan (SSWP), site personnel will be made aware of the drainage lines which are in operation. A site-specific method statement will be required in all cases where it is deemed that there is a risk of damaging such services. Those involved in direct management and supervision of site-based excavations require relevant competencies to deliver safety standards on site. They will have health and safety training in order to design safe systems of work that are appropriate to specific site conditions. They will need to prepare clear and simple safety method statements that can be used and understood by site workers. Ongoing checks will be carried out to ensure that appropriate equipment has been provided and is being used correctly.

- **Monitoring of excavation and prevention of undermining of infrastructure:** Special care will be taken when digging above or close to the lines of services. The locations of these will be marked out on the ground in advance of any excavation being undertaken. In addition, careful consideration will be taken to ensure that any buildings and infrastructure serving areas outside the development site are not undermined by excavation works. The general principles outlined in the Health and Safety Authority document: 'Code of Practice for Avoiding Danger from Underground Services' will be followed to ensure the safety of workers and to minimise the risk of damage to any existing pipelines or buildings.
- **Water quality control of discharges to drainage network:** As detailed within the previous section, adjacent waterbodies/groundwater need to be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the construction phase. This includes preventing any sediment laden water from entering the surface water outfalls. To prevent this from occurring surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. Any manholes will need to be securely covered and gullies fitted with a geotextile filter to allow protection of the surface water within the pipe.
- **Protection of services from breakage or crushing:** Where drainage infrastructure serving areas outside of the development are located within the development site, the drainage infrastructure will have to be protected from breaking or crushing. Consideration will be given to areas where heavy plant is going to be tracked across the existing drainage infrastructure. This may require construction of temporary protective concrete slabs to bridge across the existing lines where haul roads are required.

12 DUST CONTROL

As part of the permitted development under Reg. Ref.: F17A/0615, a Demolition and Construction Waste Management Plan was submitted to FCC in April 2019 prior to undertaking the construction works associated with that application. This plan contained dust control measures and site management strategies to be implemented on the site during construction.

The construction methodology proposed as part of the works associated with this application will not differ from those proposed under the previous approved planning application and therefore the dust control methods for the site remain unaltered. Refer to 190008-DBFL-XX-XX-RP-Z-5003 Outline Demolition and Waste Management Plan for the works associated with this application.

It is probable that the construction activities on site will generate some dust emissions which would be in addition to any dust generated naturally by the activities in the vicinity including traffic flows. The extent of dust generation under construction activities being carried out is dependent on environmental factors such as rainfall, wind speed and wind direction.

The objective is to ensure that dust does not impact significantly at nearby receptors. As a result, the contractor will be responsible for maintaining dust environmental monitoring throughout the duration of the works. Refer to appendix A for environmental monitoring locations during demolition and the main works contract. Dust samples will be collected on a monthly basis as a minimum. Sampling data, results and limits (as outlined in the Environmental Protection Agency Guidelines, Environmental Management in Extractive Industry Non-Scheduled Minerals) are to be outlined and supplied to DBFL Consulting Engineers in a tabular format.

Due to the nature of the site, and the close proximity of adjacent properties, a Dust Management Plan (DMP) will be formulated for the site, which will address the following:

- Specify a site policy on dust
- Identify site management of dust
- Develop documented systems for managing site practices and implementing management controls
- Outline how the DMP can be assessed

Site management

The siting of construction activities and storage piles will consider the location of sensitive receptors and prevailing wind conditions to minimise the potential dust nuisance. Site management will include the ability to respond to adverse weather conditions by either restricting operations on site or using effective control measure in a timely manner before potential for nuisance occurs.

- During working hours, the site agent or another competent appointed member of staff shall monitor dust control methods;
- A register shall be kept on site logging all correspondence and telephone / verbal complaints regarding construction activities outlining remedial actions if any;
- A site representative responsible for matters relating to dust management will be appointed prior to construction on site.
- The site representative responsible for dust management shall ensure that dust management procedures are followed and ensure monitoring and assessment of same;

Dust control measures

- Apply a speed limit of at least 20km/hr for on-site vehicles
- Provide water bowsers during periods of dry weather to ensure unpaved areas are kept moist. Spray exposed site haul roads during dry and / or windy weather.
- Ensure paved roads are kept clean and free of mud and other materials. Sweep hard surface roads, inside and outside the site, to ensure roads are kept clear of debris, soil or other material.
- Restrict un-surfaced roads to essential site traffic.
- Provide water bowsers during periods of high winds and dry weather conditions to ensure moisture content is high to increase the stability of the soil.
- During the proposed infrastructure works the following mitigation measures shall be implemented to minimise dust emissions:
 - Construction techniques shall minimise dust release into the air.

- Protect overburden material from exposure to wind by storing the material in sheltered regions of the site.
 - Regular watering of stockpiles during dry and windy periods.
 - Locate any stockpiles away from sensitive receptors, (i.e. receptors sensitive to dust release).
 - Provide tarpaulins over all unacceptable excavated materials being carted off site.
- Control vehicle speeds and impose speed restrictions, (speed can mobilise dust).
The wheels of all vehicles leaving the construction site will be washed to ensure that dirt and dust is not transferred onto the public roadway.

The developer shall comply with the requirements set out in the Codes of Practice from the Drainage Division, the Roads, Streets & Traffic Department and the Noise & Air Pollution Section.

13 CONCLUSION

The construction methodology for the proposed works will not differ from those already being undertaken on the site in the construction of the works associated with the approved planning Reg. Ref.: F17A/0615. The changes proposed for the SHD application relate to additional storeys and changes to unit distribution. The SHD application will not change the footprint of the main apartment block and only minor changes are proposed to the footprints of the units to the rear of the site.

The Construction and Environmental Management Plan addresses construction activities on site that may result in noise, air quality, water quality, biodiversity or waste management issues, should the plan not be put in place and implemented.

These include procedures for monitoring and tracking construction activities and ensuring construction personnel are trained and educated as necessary. The construction & environmental management plan should be reviewed as the construction phase progresses to accommodate any changes in activities on site.

Appendix A – Potential Environmental Monitoring Locations

KEY:

-  - Vibration Monitor
-  - Noise Monitor
-  - Dust Monitor



Appendix B – Environmental Testing





IGSL
Unit F
M7 Business Park
Nass

Analytical Test Report: L19/2232/IGS/001 - Amendment A

Your Project Reference:	21570 - Santa Sabena Dublin	Samples Received on:	20/09/2019
Your Order Number:	16486	Testing Instruction Received:	20/09/2019
Report Issue Number:	2	Sample Tested:	20/09 to 30/09/2019
Samples Analysed:	3 soil samples	Report issued:	01/10/2019

Signed

Peter Swanston
Environmental Laboratories Manager
Nicholls Colton Group

Notes:

General

Please refer to Methodologies tab for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Samples were supplied by customer, results are representative of the material provided

Accreditation Key

UKAS = UKAS Accreditation, u = Unaccredited

Date of Issue 24.01.2017

Owned by Emily Blissett - Customer Services Supervisor

Authorised by James Gare - Commercial Manager

J:\Public\Projects\2019\19\IGS\L19-2232-IGS\L19-2232-IGS-001.xlsx\Cover Sheet



L19/2232/IGS/001

Project Reference - 21570 - Santa Sabena Dublin

Analytical Test Results

NC Reference			53248	53249	53250
Client Sample Reference			A19/4189	A19/4194	A19/4200
Material			Soil	Soil	Soil
Source / Client Ref			BH 2 @ 4.0m	BH 6 @ 4.0m	BH 10 @ 3.0m
Sample Description			Greyish brown silty sand	Greyish brown silty sand	Greyish brown silty sand
TRL 447 Determinants					
Water soluble sulphate (as SO ₄)	(mg/l)	UKAS	39	46	28
Total Potential Sulphate (as SO ₄)	(%)	UKAS	0.03	0.05	0.07
Acid Soluble Sulphate (as SO ₄)	(%)	UKAS	< 0.01	0.02	0.02
TRL 447 Sample Preparation - Oven Drying Temperature (°C)			75	75	75
1377 Determinations					
pH Value	(pH Units)	UKAS	8.8	8.6	8.4
1377 Sample Preparation - % of material passing 2mm test sieve			94	96	64



L19/2232/IGS/001

Project Reference - 21570 - Santa Sabena Dublin

Analysis Methodologies and Notes

Determinant	Test method and notes
TRL 447, Tests 1, 2 and 4	<ol style="list-style-type: none">1. Sample preparation was in accordance with TRL 447 Appendix C.2. Testing was carried out in accordance with methods 1, 2 and 4 of TRL 447 2001 (Updated 2005).3. Oxidisable sulphides and total potential sulphate have been calculated in accordance with TRL 447, Appendix C Test 44. Values are reported against a dry mass of sample passing a 2mm test sieve after oven drying where required material retained on the 2mm test sieve was recombined with the test portion prior to analysis
1377 pH Value	pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5



Final Report

Report No.: 19-32102-1

Initial Date of Issue: 07-Oct-2019

Client: IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project: Santa Sabina

Quotation No.: **Date Received:** 25-Sep-2019

Order No.: **Date Instructed:** 26-Sep-2019

No. of Samples: 5

Turnaround (Wkdays): 7 **Results Due:** 04-Oct-2019

Date Approved: 07-Oct-2019

Approved By:



Details: Amy Parekh-Pross, Technical Projects
Manager

Client: IGSL		Chemtest Job No.: 19-32102		19-32102		19-32102		19-32102		19-32102	
Quotation No.:		Chemtest Sample ID.: 894628		894628		894629		894630		894630	
		Sample Location:		BH4		BH9		BH11		BH11	
		Sample Type:		SOIL		SOIL		SOIL		SOIL	
		Top Depth (m):		1.00		1.00		1.00		1.00	
Determinand	Accred.	SOP	Type	Units		LOD	LOD	LOD	LOD	LOD	LOD
				Units	LOD						
pH	U	1010	10:1			N/A	8.3	8.3	8.3	8.3	8.4
Ammonium	U	1220	10:1	mg/l	0.050	0.16	0.20	0.24	0.19	0.11	0.11
Ammonium	N	1220	10:1	mg/kg	0.10	1.6	2.0	2.4	1.9	1.1	1.1
Boron (Dissolved)	U	1450	10:1	µg/l	20	21	< 20	< 20	< 20	< 20	< 20
Boron (Dissolved)	U	1450	10:1	mg/kg	0.20	0.21	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

Results - Soil

Client: IGSL	Chemtest Job No.:		19-32102		19-32102		19-32102		19-32102					
	Quotation No.:	Chemtest Sample ID.:	894626	894627	894628	894629	894630	Sample Location:	BH1	BH4	BH6	BH9	BH11	
	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	Top Depth (m):	1.00	1.00	1.00	1.00	1.00	
	Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD										
ACM Type	U	2192	N/A		No Asbestos Detected									
Asbestos Identification	U	2192	%	0.001										
ACM Detection Stage	U	2192	%	N/A										
Moisture	N	2030	%	0.020	15	12	17						12	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.57	0.69	0.59						< 0.40	
Sulphur (Elemental)	U	2180	mg/kg	1.0	[A] 1.4	[A] 4.9	[A] 6.7						[A] 1.0	
Cyanide (Total)	U	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50						[A] < 0.50	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 4.9	[A] 2.2	[A] 5.2						[A] 4.7	
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.064	[A] 0.032	[A] 0.048						[A] < 0.010	
Arsenic	U	2450	mg/kg	1.0	16	8.1	13						21	
Barium	U	2450	mg/kg	10	23	40	32						22	
Cadmium	U	2450	mg/kg	0.10	0.19	0.19	0.30						0.17	
Chromium	U	2450	mg/kg	1.0	21	23	19						21	
Molybdenum	U	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0						< 2.0	
Antimony	N	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0						< 2.0	
Copper	U	2450	mg/kg	0.50	11	7.1	7.4						8.1	
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10	
Nickel	U	2450	mg/kg	0.50	27	28	24						23	
Lead	U	2450	mg/kg	0.50	13	14	14						9.4	
Selenium	U	2450	mg/kg	0.20	0.61	0.38	0.20						< 0.20	
Zinc	U	2450	mg/kg	0.50	35	37	38						26	
Chromium (Trivalent)	N	2490	mg/kg	1.0	21	23	19						21	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50	
Total Organic Carbon	U	2625	%	0.20	[A] 0.79	[A] 0.56	[A] 0.45						[A] 0.47	
Mineral Oil	N	2670	mg/kg	10	< 10	< 10	< 10						< 10	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0						[A] < 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0						[A] < 1.0	

Results - Single Stage WAC

Project: Santa Sabina

Chemtest Job No: 19-32102

Sample ID: 894626

Sample Ref:

Sample ID: BH1

Top Depth(m): 1.00

Bottom Depth(m):

Sampling Date (\$):

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	U	%	[A]0.79	3	6
Loss On Ignition	2610	U	%	2.1	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.10	6	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--
pH	2010	U		8.2	--	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.31	--	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1450	U	0.0024	< 0.050	0.5	25
Barium	1450	U	0.0093	< 0.50	20	100
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1
Chromium	1450	U	0.0024	< 0.050	0.5	10
Copper	1450	U	0.0017	< 0.050	2	50
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2
Molybdenum	1450	U	0.0027	< 0.050	0.5	10
Nickel	1450	U	0.0020	< 0.050	0.4	10
Lead	1450	U	< 0.0010	< 0.010	0.5	10
Antimony	1450	U	0.0016	0.016	0.06	0.7
Selenium	1450	U	0.0021	0.021	0.1	0.5
Zinc	1450	U	< 0.0010	< 0.50	4	50
Chloride	1220	U	4.0	40	800	15000
Fluoride	1220	U	0.14	1.4	10	150
Sulphate	1220	U	46	460	1000	20000
Total Dissolved Solids	1020	N	120	1200	4000	60000
Phenol Index	1920	U	< 0.030	< 0.30	1	--
Dissolved Organic Carbon	1610	U	8.6	86	500	800

Solid Information

Dry mass of test portion/kg 0.090

Moisture (%) 15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Santa Sabina

19-32102

894627

Chemtest Job No:

Sample Ref:

Sample ID:

Sample Location:

Top Depth(m):

Bottom Depth(m):

Sampling Date (\$):

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	U	%	[A] 0.56	5	6
Loss On Ignition	2610	U	%	2.7	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	--	--
pH	2010	U		8.1	> 6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.011	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1450	U	0.0012	< 0.050	0.5	25
Barium	1450	U	0.0031	< 0.50	20	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	70
Copper	1450	U	0.0012	< 0.050	2	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	40
Lead	1450	U	< 0.0010	< 0.010	0.5	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	7
Zinc	1450	U	< 0.0010	< 0.50	4	200
Chloride	1220	U	< 1.0	< 10	800	25000
Fluoride	1220	U	0.24	2.4	10	500
Sulphate	1220	U	1.4	14	1000	50000
Total Dissolved Solids	1020	N	46	460	4000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-
Dissolved Organic Carbon	1610	U	8.1	81	500	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Santa Sabina

Chemtest Job No: 19-32102

Sample ID: 894628

Sample Ref:

Sample ID: BH6

Top Depth(m): 1.00

Bottom Depth(m):

Sampling Date (S):

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	U	%	[A] 0.45	5	6
Loss On Ignition	2610	U	%	2.4	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	--	--
pH	2010	U		9.4	> 6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.031	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1450	U	0.0065	0.065	0.5	25
Barium	1450	U	0.0033	< 0.50	20	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	5
Chromium	1450	U	0.0030	< 0.050	0.5	70
Copper	1450	U	0.0017	< 0.050	2	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	2
Molybdenum	1450	U	0.0030	< 0.050	0.5	30
Nickel	1450	U	0.0019	< 0.050	0.4	40
Lead	1450	U	< 0.0010	< 0.010	0.5	50
Antimony	1450	U	0.0017	0.017	0.06	5
Selenium	1450	U	0.0014	0.014	0.1	7
Zinc	1450	U	< 0.0010	< 0.50	4	200
Chloride	1220	U	< 1.0	< 10	800	25000
Fluoride	1220	U	0.18	1.8	10	500
Sulphate	1220	U	5.9	59	1000	50000
Total Dissolved Solids	1020	N	59	580	4000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-
Dissolved Organic Carbon	1610	U	8.8	88	500	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Santa Sabina

Chemtest Job No: 19-32102

Chemtest Sample ID: 894629

Sample Ref:

Sample ID: BH9

Sample Location: 1.00

Top Depth(m):

Bottom Depth(m):

Sampling Date (\$):

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	U	%	[A] < 0.20	5	6
Loss On Ignition	2610	U	%	1.4	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	--	--
pH	2010	U		8.6	> 6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.027	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1450	U	0.0034	< 0.050	0.5	25
Barium	1450	U	0.0027	< 0.50	20	100
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1
Chromium	1450	U	0.0020	< 0.050	0.5	10
Copper	1450	U	0.0017	< 0.050	2	50
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10
Nickel	1450	U	< 0.0010	< 0.050	0.4	10
Lead	1450	U	< 0.0010	< 0.010	0.5	10
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7
Selenium	1450	U	0.0011	0.011	0.1	0.5
Zinc	1450	U	< 0.0010	< 0.50	4	50
Chloride	1220	U	1.1	11	800	15000
Fluoride	1220	U	0.21	2.1	10	150
Sulphate	1220	U	3.9	39	1000	20000
Total Dissolved Solids	1020	N	41	410	4000	60000
Phenol Index	1920	U	< 0.030	< 0.30	1	--
Dissolved Organic Carbon	1610	U	9.0	90	500	800

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Santa Sabina

 Chemtest Job No: 19-32102
 Sample ID: 894630

 Sample Ref: BH11
 Sample ID: 1.00

Sample Location:

Top Depth(m):

Bottom Depth(m):

Sampling Date (\$):

Determinand	SOP	Accred.	Units	10:1 Eluate mg/l	10:1 Eluate mg/kg	Landfill Waste Acceptance Criteria		
						Inert Waste Landfill	Stable, Non- reactive hazardous waste in non- hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	U	%	[A] 0.47	3	5	6	
Loss On Ignition	2610	U	%	1.5	--	--	10	
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--	
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--	
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--	
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--	
pH	2010	U		8.6	--	> 6	--	
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	To evaluate	To evaluate	
Eluate Analysis					Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1450	U	0.0036	< 0.050	0.5	2	25	
Barium	1450	U	0.012	< 0.50	20	100	300	
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5	
Chromium	1450	U	0.0025	< 0.050	0.5	10	70	
Copper	1450	U	< 0.0010	< 0.050	2	50	100	
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2	
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30	
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40	
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50	
Antimony	1450	U	0.0013	0.013	0.06	0.7	5	
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7	
Zinc	1450	U	< 0.0010	< 0.50	4	50	200	
Chloride	1220	U	< 1.0	< 10	800	15000	25000	
Fluoride	1220	U	0.10	1.0	10	150	500	
Sulphate	1220	U	7.1	71	1000	20000	50000	
Total Dissolved Solids	1020	N	39	390	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.30	1	--	--	
Dissolved Organic Carbon	1610	U	4.8	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63, Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
894626			BH1		A	Amber Glass 250ml
894626			BH1		A	Amber Glass 60ml
894627			BH4		A	Amber Glass 250ml
894627			BH4		A	Amber Glass 60ml
894628			BH6		A	Amber Glass 250ml
894628			BH6		A	Amber Glass 60ml
894629			BH9		A	Amber Glass 250ml
894629			BH9		A	Amber Glass 60ml
894630			BH11		A	Amber Glass 250ml
894630			BH11		A	Amber Glass 60ml

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6-C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8-C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols>Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"
- \$ This information has been supplied by the client and can affect the integrity of test data.

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com