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Glebe House, Crumlin Village, Crumlin, Dublin 12

Preliminary Demolition, Construction & Waste Management Plan

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1 Introduction

1.1 General

This document presents an outline plan to inform the construction of the proposed development and ensure active control, management and monitoring of waste and environmental impacts associated with the proposed development during the Demolition and Construction Phase.

This plan will be developed further by the chosen Works Contractor , agreed with Dublin City Council and implemented throughout the construction phase of the project to ensure:-

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Acts 1996, 2007 & 2011.
- To manage and control any environmental impacts (noise, vibration, dust, water) that construction work activities may have on neighbouring properties and on the local receiving environment.

2 Description of Proposed Development

2.1 Site Location and Description

The site is located to the West of Crumlin village in South Dublin. It is located on the South side of St. Agnes Road. There is a mix of commercial and industrial units on the site with Glebe house currently unoccupied.



Figure 1: Site Location

The site is accessed from St. Agnes Road. Somerville Drive to the South boundary of the site contains a number of residential properties.

2.2 Proposed Works

Seabren Developments Ltd and Circle VHA CLG intend to apply to An Bord Pleanála for planning permission for a strategic housing development at this site located at Glebe House (Protected Structure, RPS Ref. 7560), including the vacant Glebe light industrial lands, and the vacant site of the former Coruba House, Saint Agnes Road, Crumlin, Dublin 12 all on a site of 0.88 Hectares. The site bounds Somerville Drive and Somerville Green to the southeast and southwest, respectively, and includes the grass margin between the Coruba site boundary and Somerville Drive. The Glebe House lies within the Crumlin Architectural Conservation Area.

A residential development of 150 no. apartments consisting of 74 one beds, 72 two beds and 4 three bed residential units, a creche and café. The proposed scheme has an overall Gross Floor Area of 15,767 sq.m.

Two apartment buildings are proposed ranging in height from 4 - 6 storeys and linked by a carpark at ground floor and a podium at first floor level comprising the following:

• Block A is 5-6 storeys and consists of 79 apartments and includes 35 no. one beds and 44 no. two beds units, ESB substation/switch room/metering room of 85sqm, 42 no. secure bicycle storage and bin storage of 44sqm

• Block B is 4-5 storeys and consists of 66 apartments and includes 38 no. one beds, 25no. two beds and 3 no. three beds, a Creche of 147 sqm at ground floor level with associated outdoor area, ground floor plant rooms of 74sqm, ESB substations/switch room/metering room/telecoms of 89sqm, 188 no. secure bicycle storage spaces in two locations, 6 no. motorbike spaces and bin storage of 75sqm.

Two no.three storey pavilion buildings either side of Glebe House to accommodate:

• One number two storey duplex 2 bed apartment above one number 1 bed apartment at ground floor in the north west pavilion and,

• One number two storey duplex 2 bed apartment above a 55 sqm ground floor café, in the south east pavilion.

The repair of fire damaged elements (following a fire 21st April 2022) and the refurbishment of Glebe House, a protected structure, into two apartments, one number 2 bed unit at lower ground floor and one number 3 bed unit at upper ground and first floor;

Repair of fire damaged elements including the replacement of all roof coverings and structure, replacement of all first floor timber stud walls, replacement of first floor rear return joists, replacement/repair of floor joists at first floor level, replacement of internal render to kitchen/dining area in rear return building and replacement/repair of stair from upper ground to first floor level,

the refurbishment of Glebe House including the removal of extensions to the rear and sides of the building, restoration of the façade, replacement of pvc windows with sliding sash windows and associated works to the interior and to the curtilage of Glebe House.

Lowering the front boundary wall and return boundary wall to the front of Glebe House.

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Demolition of all workshops, offices and sheds to the rear and sides of Glebe House Demolition of boundary walls around the Coruba land on Somerville Drive, the front entrance and between Coruba and the Glebe lands. Demolition of non-original brick column's at St Agnes Road entrance to Glebe House (1,636 sqm).

75 car parking spaces are proposed:

66 no. car parking spaces (includes 2 Go Car spaces) in ground floor car park below podium and partly in Block A and 4 No. visitor car parking spaces in front of Glebe House all with vehicular access from St Agnes's Road

5 No. assigned car parking spaces on the eastern side of Block B with vehicular access from Somerville Drive.

The development provides 905 sqm of Public Open Space to the front and side of Glebe House, and within the southeast public plaza. with a pedestrian route to the side of the Café at Pavilion B and 1,632 sqm of Communal Open Space located at podium level and to the rear of Block A.

76 no. visitor bicycle parking spaces are provided in the public accessible areas of the site.

The application also includes the provision of a new footpath along the south-eastern boundary at Somerville Drive, a new controlled gate between Somerville Drive and St Agnes Road allowing public access through the site within daylight hours and a new pedestrian access from the public open space onto St. Agnes Road, boundary treatment, landscaping, Solar Panels on the roof of Blocks A and B, provision of 4 no. Microwave link dishes to be mounted on 2 No. steel support posts affixed to the lift shaft overrun on Block A, lighting, services and connections, waste management and other ancillary site development works to facilitate the proposed development.

Foul Drainage will be collected for two of the apartment blocks and diverted via gravity to the foul sewer on Somerville Drive. The foul drainage from Glebe House and Pavilion buildings will continue to use the same connection via gravity to the combined sewer on St. Agnes Road.

Surface Water drainage will be drained through sedum roofs to attenuation tanks and soakaways within the site.

3 Demolition and Construction Management Plan

3.1 Scope of Works

The range of works to which this Preliminary Construction & Waste Management Plan will be integrated into during the design phase, construction phase and operation phase of the site over an approximate 24 month period, are summarised as follows:-

- Site set-up
- Existing site clearing and demolition of Industrial Buildings
- Construction of new superstructure
- Site Works including Drainage, Boundary Wall's and Landscaping
- Traffic Management during Construction Phase
- Waste Management during the Construction Phase

It is proposed that this Preliminary Construction & Waste Management Plan will be further developed by the Contractor at the beginning of the construction phase of the works and include a detailed Sequencing and Phasing Schedule and Traffic and Parking Management Plan for the works.

3.2 Hoarding and Site Set-up

The site area will be enclosed with hoarding and/or fencing to ensure no unauthorised access during the time of works. Hoarding will be kept clean and maintained for the duration of the project.

A site office will be established on site to provide adequate welfare facilities for the site operatives, storage of relevant site documents and location for on-site meetings. The location of the site office will be confirmed by Main Contractor at the time of works. An indicative site set up is shown in Figure 2 and it is proposed to situate the offices at the North (front) of the site. The proposed site set up area is indicated on CORA drawing C.030.



Figure 2: Site Set Up

Suitable areas for the storage of construction material will be determined at the time of works. The storage of materials will not impede access or egress to the works and will be kept separate from boundary walls and temporary hoarding to ensure no excess loading to these elements. Parking will be provided to the front of the site for Contractor personnel.

Before the commencement of any site works, the Main Contractor will physically identify all existing services that have been established as part of the desk study. All services within the site must remain clearly visible during the construction phase of the project.

It should be noted the hoarding is proposed to be constructed around the perimeter of the site as best possible. Along the Boundary between the existing Coruba site and Sommerville Drive the hoarding will be erected along the grass verge outside the existing wall to allow for safe demolition of the wall itself. Following the demolition process some sections of the hoarding may require infilling to complete site enclosure.

3.3 Site Clearance and Demolition

It is proposed that from the outset of construction activities, a dedicated and secure compound containing bins and/or skips, into which all waste materials generated by construction site activities will be established at the site.

In order to facilitate the construction of the proposed works, the exiting commercial and industrial premises will be demolished. It is assumed the existing buildings are of standard construction consisting of concrete footings, block or brick walls and a timber roof. The boundary wall between the Coruba property and Somerville Drive will also be demolished at this time. The wall is constructed from concrete blocks. The following is an outline method statement for the demolition of the buildings and wall;

- Conduct an in-depth asbestos survey of the existing properties.
- Conduct dilapidation surveys of the neighbouring properties to ascertain existing condition. All surveys will to be distributed to design team for record.
- Confirm location of all services entering and exiting the site.
- Carry out any necessary service diversions and decommissioning works.
- Top-down demolition of buildings, starting with timber roof structure, block/brick walls and concrete foundations.
- Demolition of the boundary wall to Sommerville Drive and erection/completion of hording as required.

In order to ensure that construction staff correctly segregate waste materials, it will be the responsibility of the Site Construction Manager to ensure all staff are informed by means of clear signage and verbal instruction and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

The Ecological Impact Assessment prepared by Openfield Ecological Services identifies Spanish bluebells as an invasive species with action to be taken before works progress on site. The recommendations from the Ecological Impact assessment will be incorporated into the Site Clearance programme by the main contractor.

3.4 Glebe House Fire Damage & Clearance

A fire broke out within Glebe House on 21st April, 2022, with the attendance of Dublin Fire Brigade required to bring the fire under control. The property was boarded up at the time of the fire, but unauthorised access was obtained and the subsequent fire caused extensive damage to the building, particularly at first floor and roof level.

CORA have inspected Glebe house on Friday 29th April, 2022 and a subsequent internal inspection carried out on Friday 6th May 2022. A subsequent report has been prepared addressing the fire damage to Glebe house and the proposed remedial works required.

The inspection identified fibre-based roof slates which may contain asbestos. Section 5.7.1 outlines the proposed process for dealing with asbestos on site. This process is to be followed for testing and removal of any asbestos items found in Glebe House.

The CORA report outlines a process for safe demolition and removal of items damaged by the fire to Glebe House. The main contractor will further develop this and produce a methodology statement for review by the design team.

Please refer to CORA post fire inspection report for further information.

3.5 Access to the Works and Traffic Management

The site is located on St. Agnes Road, Crumlin Village. The site is currently used for light industrial and commercial purposes with a number of small units accessed from St. Agnes Road. Construction access to the site will be through the existing access at St. Agnes Road at the location of the existing entrance unless otherwise agreed by the Local Authority.

St. Agnes Road provides a link from East to West to two regional roads, the R110, Crumlin Road and R818 Cromwellsfort Road which both provide a link to the M50 Motorway at junction 9, Red Cow roundabout.

3.5.1 Site Approach

In relation to Traffic Management and Access, the following is proposed: -

- Site traffic will approach from the M50 approaching from either the R110, Kildare Road or the R818 Cromwellsfort Road.
- Site Traffic will approach on St. Agnes Road from East or West. Deliveries will be scheduled to limit overlap of construction traffic and heavier local traffic.
- Construction access to the site will be through the existing access at St. Agnes Road at the location of the existing entrance unless otherwise agreed by the Local Authority.

Figure 3 below shows the proposed approach and exit road to the site on a regional scale. Figure outlines the local approach and exit along St. Agnes Road.



Figure 3: Suggested Traffic Approach to Site Regional

For heavy goods vehicles such as articulated trucks etc, it is proposed that these vehicles will enter the site travelling south along St. Agnes Road and will exit via north via St Agnes Road. Details of the swept path analysis are shown on CORA drawing C.034.



Figure 4: Suggested Traffic Approach to Site Local

A restriction will be imposed on construction traffic and site personnel using the residential roads in the locality including but not limited to Somerville Drive, Sommerville green, Moeran Road, Sommerville Avenue and Windmill Road.

3.5.2 Site & Local Area Management

In relation to site personnel and local site surrounds, the following is proposed: -

- There will be no parking of vehicles or construction vehicles on St. Agnes Road or surrounding residential roads during the works.
- Parking for Construction Operatives will be facilitated on site during the works using temporary carparks until such time as the permanent carpark is constructed which will be opened up for use to construction operatives.
- Pedestrian routes past the site works will be maintained and designated to ensure safe passage around the site.
- The use of public transport by site personnel will be encouraged.

Due regard will be paid to minimising any impacts by construction vehicles on the Crumlin area. Should routes become an issue, then the position will be reviewed by the project team and changes made. Particular Emphasis will be placed on;

- The issue of instruction and maps on getting to site to each supplier sub-contractor to avoid 'lost' construction traffic travelling on unapproved routes;
- Ongoing assessment of the most appropriate routes for construction traffic to and from the site;
- Interface with operation of local traffic;
- Use of banksman and/or traffic lights to control exist of construction vehicles; and
- No construction traffic waiting on public roads.

Should larger concrete pours be required, deliveries of concrete to site will be coordinated to avoid idling of concrete trucks on the local approach roads. Waiting areas will be provided within site and 'just in time' deliveries scheduled to avoid long waiting times.

3.5.3 Site Management and Movement

As identified above construction access to the site will be through the existing access at St. Agnes Road. In order to facilitate the entry of vehicles form the East, it will be necessary to remove the existing gate pillar to widen the entrance for larger construction vehicles and plant. The pillar is non-original block and is shown in Figure 6 below. During this process, particular care is to be given to the remaining stone wall fronting onto St. Agnes Road which is to remain as part of the curtilage of Glebe House. Protective hoarding will be erected around the wall and temporary support provided to the gated end until installation of the permeant entrance finish.



Figure 5: Works to gate to facilitate access

Further auto-track analysis has been undertaken to show sufficient access and egress to the site. This is shown on CORA drawing C.032. The analysis has been expanded to show possible site movements for the outline construction sequencing. These are shown in CORA drawings C.033 and C.034. The drawings show that suitable vehicular paths can be maintained around the site while construction progresses.

A detailed Construction Traffic Management Plan shall be submitted to the Local Authority by the Main Contractor. The Construction Traffic Management Plan will identify staging areas, delivery of materials, strategy for large concrete pours, removal of demolition waste, traffic routes etc.

3.6 Hours of Operation

The Dublin City Council Development Plan 2016-2022 Section 16.35 outlines the hours of works for construction sites where work may affect residential amenity. As such the proposed operating hours for the project are proposed to be as follows: -

07:00hrs – 18:00hrs Monday to Friday 08:00hrs – 14:00hrs Saturdays Site closed on Sundays / Public Holidays

It should be noted these times are guidelines only and in isolated circumstances, it may be necessary for construction works to occur outside these hours. This will be agreed with the Local Authority at the time of works.

3.7 Construction Form and Sequencing

It is proposed to construct four separate buildings varying in heights from six to three stories. A covered parking area is to be constructed.

For the construction of the buildings, it is proposed to use an in-situ reinforced concrete structure with precast concrete floor slabs. The first floor which will be a transfer structure which will be deeper than the other slabs and will be constructed using in-situ concrete.

Stability to the buildings will be provided by lift shafts and stair cores and these will be integrated into the building structures. Facades will be constructed using brickwork and cladding panels and will be constructed simultaneously with an inner leaf of blockwork.

Surface water drainage will be dealt with on-site using a series of measures to infiltrate the water to ground via landscaping features and planting with final surface water discharge directed to the surface sewer on Somerville Drive. Foul Drainage will be collected for two of the apartment blocks and diverted via gravity to the foul sewer on Somerville Drive. The foul drainage from Glebe House and Pavilions will continue to use the same connection via gravity to the combined sewer on St. Agnes Road.

The methodology and program will ultimately be decided by the contractor prior to the commencement of works. As part of this outline plan it is proposed the construction of each block use phased start times to allow for sufficient site access and excavation works. An outline phasing sequence is identified on CORA drawings CORA-1968-C.030 & C.031. The preliminary construction sequencing is outlined below.

Apartment Block A to the rear/South of the site is the furthest from the entrance on St. Agnes Road and is to be started first. Once foundations have been completed, the contractor will move to Apartment Block B to commence foundation work while works to the Block A superstructure begin.



STAGE 3 - SITE + BLOCK A

Figure 6: Outline Construction Stage 3 - Block A

An outline construction sequence for each building is identified below.

- Excavation for foundations.
- Construction of in-situ reinforced concrete footings.
- Construction of solid block rising walls, concrete stair cores and structural concrete columns
- Installation of drainage pop-ups, sub grade and construction of reinforced ground floor slab.
- Construction of concrete structural beams at first floor level
- Installation of first floor precast structural elements.
- Similar sequencing to remaining floors and installation of roof.
- Installation of external envelope and exterior finishes.
- Mechanical and electrical fit out.
- Completion of Finishes
- Commissioning and testing of plant.
- Completion of drainage and landscape works.

The above methodology will be repeated for Block B. The podium structure will not be completed until further into the project timeline. This allows for the area to be used for site traffic and material set down. Refer to CORA drawing C.030 & C.031 for site sequencing.



Figure 7: Outline Construction Stage 2 – Block B

Glebe House is to be refurbished and converted for residential use. The further two pavilion buildings will be constructed last as the area adjacent to glebe house will be used for the site compound, site traffic and material set down. Refer to CORA drawing C.030 & C.031 for site sequencing. For the duration of the works, protective hoarding and fencing will be erected around Glebe House to provide protection.



CALE 1:500

Figure 8: Outline Construction Stage 3 – Pavilion Buildings & Glebe House

The podium to building B, civil and final landscaping works will be completed last. In general, it is proposed that works progress from the South (rear) of the site to the North (front) to maximise available space for construction traffic and activities.

The above is an indicative construction sequencing. The main contractor will prepare a construction programme and methodology prior to commencement of works.

We would expect the works to be programmed as follows:

Week 01 to Week 08
Enabling works including site hoarding, demolition and site clearance along with preliminary excavation works to facilitate the development.
Week 09 to Week 89
Works associated with the construction of the "Block A" building.
Week 17 to Week 94
Works associated with the construction of the "Block B" building.
Week 60 to Week 86
Works associated with Glebe House
Week 86 to Week 100
Works associated with the Pavilion buildings
Week 89 to Week 100
Exterior Civil and Ground Works progressing from rear of site to front
Landscape and finishing works progressing from rear of site to front

As identified above, it is anticipated the construction phase for the proposed development will take approximately 24 months. The main contractor will prepare a construction programme outlining in detail all construction items prior to commencement of the project.

3.7.1 Phasing Plan of Work to Glebe House

The development includes the refurbishment of Glebe House, a protected structure, into two apartment's one number 2 bed unit and one number 3 bed unit. The works include the removal of extensions to the rear of the building, restoration of the façade, repair of the roof, replacement of pvc windows with sliding sash windows and associated works to the curtilage of Glebe House.

Week 1 to Week 4	Protective hoarding and fencing will be erected around Glebe house to protect from construction works to the remainder of the site. A temporary protection plan will be included in the tender documentation. It will identify otential risks and outline measures to address these.
Week 4 to Week 8	As part of initial Demolition Works the extension to the rear of Glebe House will be demolished. Additional care will be taken so as not to damage remaining structure during these works.
Week 17 to Week 86	A survey of Glebe House has confirmed little or no original building fabric, with the exception of the external walls remain. A conservation specialist will oversee and advise on all items and monitor the works to Glebe House as they progress.
Week 86 to Week 88	Strip out of internal and external non-original items and preparation for structural and architectural repair works.
Week 90 to Week 98	Interior structural repair works and alterations to interior for new architectural layout.
Week 90 to Week 98	Works to external fabric of Glebe house in line with Conservation report.
Week 90 to Week 104	Works to the curtilage of Glebe House, including repairs and alterations to boundary walls will be completed as part of the proposed landscaping works.

The above is an indicative construction sequencing for the works to Glebe House. The main contractor will prepare a construction programme and methodology prior to commencement of works.

4 Environmental Management

Potential impacts relating to noise nuisance and disturbance, dust deposition nuisance, surface water and vibrational impacts will be minimised, controlled and monitored to ensure that the site construction activities do not have an adverse or unacceptable impact on local receptors, adjacent property, adjacent users and human health or on the wider receiving environment.

4.1 Environmental Aspects & Impacts

The following section describes the environmental aspects and impacts that are relevant to the construction phase of the proposed development and form the basis of the proposed environmental management and monitoring programme.

Definitions of Environmental Aspects and Impacts: -

Environmental Aspect:	Element of an activity, products or service that can interact with the existing environment.
Environmental Impact:	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an activity, products or services.
Direct Impacts:	Those impacts associated directly with the environmental aspect (e.g. increased noise and dust levels).
Indirect Impacts:	Those impacts associated indirectly with the environmental aspect (e.g. 'disposal of waste' and 'fumes emitted during transportation to landfill contributing to the greenhouse effect' impact.
Normal Situations:	The project programme is progressing as planned.
Abnormal Situations:	The project programme is not progressing as planned because of unforeseen and unpredictable circumstances.
Emergency Situations:	An unplanned and unwanted situation or activity has occurred (e.g. fire, explosion, malicious damage).

4.2 Noise and Vibration Management

Section 9.5.8 of the Dublin City Council Development Plan addresses noise pollution with specific reference to the Dublin Agglomeration Noise Action Plan 2018-2023.

S125 of the development plan identifies the policy of DCC 'To seek to preserve and maintain air and noise quality in the city in accordance with good practice and relevant legislation'. The proposed demolition and construction works for the proposed development will uphold this policy through the use of;

- Noise Emission limits for site equipment
- Low vibration and noise emitting techniques to be applied
- Control of working hours
- Physical screens installed on site.
- Noise Monitoring
- Vibration Monitoring

The main contractor will prepare a Construction Management Plan, which will be based on this report, prior to commencement of construction. Included in this will be an evaluation of construction activity for noise and vibration generation and the associated mitigation measures to be implemented.

4.2.1 Noise Management

The proposed demolition and construction works for the proposed development will seek to limit/control noise sources through the following;

- Noise emission limits for site equipment
- Low noise emitting techniques and equipment to be used
- Control of working hours
- Physical screens installed on site
- Noise monitoring
- Acoustic enclosures erected around stationary plant and equipment
- Siting of plant away from neighbouring residential properties.
- Regular communication of noise reduction measures through Tool box talks and site introductions.

The above represents best practice measures identified in British Standards BS 5228 (2009): Code of practice for control of noise and vibration on construction and open sites part 1: Noise

4.2.2 Vibration Management

The proposed demolition and construction works for the proposed development will seek to limit/control noise sources through the following;

- Vibration emission limits for site equipment
- Vibration monitors installed on boundary walls
- Low vibration emitting techniques and equipment to be used
- Siting of plant away from neighbouring residential properties.
- Avoidance of 'idling' of plant and equipment when not in use.
- Regular communication of vibration reduction measures through Tool box talks and site introductions.

The above represents best practice measures identified in British Standards BS 5228 (2009): Code of practice for control of noise and vibration on construction and open sites part 2: Vibration

4.2.3 Construction Phase Operating Hours

As identified in section 3.4 above, the proposed operating hours for the project are proposed to be as follows: -

07:00hrs – 18:00hrs Monday to Friday 08:00hrs – 14:00hrs Saturdays Site closed on Sundays / Public Holidays

Compliance with these strict noise controls will be verified by the programme of construction and demolition phase noise monitoring proposed in this EMP.

4.2.4 Temporary Works/Tree Protection Measures

It is not proposed to undertake any excavations in close proximity of trees and therefore it is not anticipated that there will be a requirement for tree protection measures associated with these excavations.

The trees to the front of the site facing onto St. Agnes Road are to be retained as part of the scheme. These are in the proximity of the proposed site office and storage locations and will

therefore not be in proximity to any proposed excavations. It is proposed to install fencing around the base of these trees to provide protection for the duration of the works.

4.2.5 Demolition of Structures on the Site

The existing industrial buildings on site are to be demolished. Prior to demolition, condition surveys of boundary walls and neighbouring properties which may be impacted will be conducted.

4.2.6 Excavation for foundations

In order to construct the proposed foundations, topsoil and clays are required to be removed. A Geotechnical Investigation will be undertaken to determine the build-up of soils and stratum on the site. Bedrock is not anticipated to be countered within the proposed zone of excavation of the proposed footings.

4.2.7 Construction of Superstructure of Buildings

It is proposed to construct the building using a mixture of types of constructions: -

- Cast in-situ concrete elements stair cores and lift shafts
- Precast concrete slabs floor slabs & stairs
- Blockwork internal walls and walls between apartments
- Glazing facades to buildings.
- Metal Cladding facades and roof level cladding.

Using these forms of construction – as most of the elements are prefabricated off site – will help reduce the construction time of the project.

4.2.8 **Provision for loading and unloading materials**

The loading and unloading of materials at the site has the potential to generate elevated levels of noise and dust as a result of vehicle movements (trucks, vans, mobile cranes) throughout the working day at the site. It is proposed that dedicated delivery area shall be clearly identified at the site. Any material stockpiles shall be located as close as possible to the location where they are to be used so as to minimise associated vehicle activities and therefore minimise the potential for noise and dust nuisance on the site. Contractors delivering fine aggregate materials in open top delivery trucks to the site shall be instructed to use a suitable cover so as to minimise the potential for wind to generate airborne dusts on transit to the site and to minimise the impacts on local air quality on the greater environment over the transport route from source to delivery point. Drivers delivering materials to the site shall be instructed by site management to turn off idling vehicle engines when the vehicles are on site for extended periods.

Dedicated delivery areas will provide for the orderly management of delivery vehicles and the containment of spilled materials shall they arise, the concentration of specific site activities in a dedicated area away from the closest receptors and the ability to better manage and control potential noise and dust impacts.

4.2.9 Storage of plant, materials and operatives' vehicles

It is proposed that all plant, materials and operatives' vehicles shall be stored in dedicated compound areas within the site in order to minimise the interaction that each element may have on the other. That is, the separation of operative vehicles from aggregate material stockpiles will minimise the potential for vehicle movements to generate dust. All plant shall be stored in a dedicated area following the cessation of site activities at the end of each working day or during periods when the plant is not being utilised. It is recommended that a specific area on site shall be delineated.

Site vehicles and mobile plant (e.g. Generators) have the potential to contaminate soil and groundwater by leaking oil or fuel. The storage of these items of plant in a suitable dedicated area on mobile bunded units and drip trays will serve to minimise the potential for contamination as any leaks, oil spills or stains on the ground will be more readily identifiable and will better ensure that an immediate or more timely response.

The Site Manager shall conduct a daily visual inspection of the site to identify any signs of ground contamination from plant storage areas and that where a spill is identified, the source shall be identified, and the appropriate repair / maintenance be conducted. All daily visual inspections shall be recorded by the site manager or his/her delegate on a "Daily Site Inspection Sheet". All fuels, oils and liquid materials shall be stored in a dedicated bunded area or within a dedicated impermeable storage unit to minimise the potential for soil and groundwater contamination. Storage units containing all fuels oils and liquid material must be locked and secured overnight so as to prevent against pilferage and vandalism.

A policy of "zero tolerance" shall be applied at the site in relation to the dumping of empty or partially empty oil, lubricant, fuel, or any other non-solid material in the vicinity of the site. All empty containers must be stored in a dedicated area designed to prevent the contamination of soil and groundwater as a result of leaking drums or containers prior to the proper disposal off site to a suitably licensed waste disposal facility.

4.3 Dust Management Programme

Construction site activities have the potential to generate fugitive emissions of dust levels as a result of vehicle movement on unsealed site surfaces, windblown dusts from aggregate / fine material stockpiles, angle grinding of concrete and stone, crushing activities if required and the movement and deposition of aggregates, soils / clay and other materials at the site.

4.3.1 **Proposed Dust Monitoring Programme**

Dust deposition levels will be routinely monitored in order to assess the impact that site activities may have on the local ambient air quality and to demonstrate that the environmental control measures in place at the site are effective in minimising the impact of construction site activities on the local receiving environment.

4.3.2 Dust Management and Suppression / Abatement Techniques

It shall be the responsibility of the site manager to ensure that dust emissions generated by site activities are controlled and minimised and as such will implement appropriate dust suppression techniques as appropriate. Appropriate techniques will include water spraying of stockpiles and haul roads and temporarily curtailing specific operations when unfavourable weather conditions are

prevailing (e.g. during dry, windy weather when the prevailing winds may cause dust to be blown towards local receptors).

A road sweeper vehicle shall be used to clean soiled roads in the vicinity of the site when required. This will also ensure that the potential for elevated concentrations of particulate matter entering any surface water drain will be minimised.

The Site Manager shall maintain a complaints log and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

4.4 Responsibilities & Local Liaison

It will be the responsibility of the Project Team and Main Contractor to ensure all works are implemented in a reasonable timely, safe and competent manner.

The Main contractor will prepare a detailed Construction and Demolition Waste plan for submission prior to the undertaking of any works. The Project team shall review and monitor the implementation of this plan over the course of the works.

It is recognized that there will be concerns among the local Community & Traders about the impacts of construction. In addition, to developing this Preliminary Plan and setting out clear and thorough procedures for the management of the project the Contractor will be required to:

- Appoint a Community Liaison Officer as a single point of contact to engage with the community and respond to concerns.
- Ensure specific construction tasks such as large concrete pours and material deliveries are pre-planned and scheduled to minimize disruption where possible.
- Keep local residents informed of progress and the timing of particular construction activities that may impact on them.

5 Waste Management Plan – Demolition & Construction Phase

This Preliminary Waste Management Plan will demonstrate how it is proposed during the Construction Phase to comply with the following relevant legislation and relevant Best Practice Guidelines: -

- Waste Management Acts 1996 to 2011
- Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)
- Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008)
- Department of the Environment, Heritage and Local Government Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects July 2006.
- Protection of the Environment Act 2003
- Eastern-Midlands Regional Waste Management Plan 2015-2021
- Dublin City Council Development Plan 2016-2022 (reference draft 2022-2028 plan)

A detailed Construction and Demolition Waste Management Plan will be prepared by the contractor prior to any works commencing on site. The Design Team for the project will monitor the

Contractors Site Management Team to ensure that all aspects of the CWMP are adhered and to ensure that all potential environmental impacts on the local receiving environment and on local residential amenity are controlled at source and minimised to acceptable levels and that all wastes generated by site activities are minimised, segregated, re-used, recycled or correctly disposed of by licensed / permitted waste contractors.

Each section of the preliminary Waste Management Plan presents the potential environmental impacts, proposed monitoring methodologies, limit values where applicable, based on the concept of Best Practice and the proposed mitigation measures to be implemental at the site. Reference to National and International Standards are also included where relevant.

Waste materials generated by earthworks, demolition and construction activities will be managed according to the Department of the Environment, Heritage and Local Government's 2006 Publication - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects.

The Waste Management Plan will specifically address the following points: -

- Analysis of waste arising / material surpluses
- Specific Waste Management objectives for the Project including the potential to reuse and process on-site demolished buildings for further use in the construction phase.
- Methods proposed for Prevention, Reuse and Recycling
- Waste Handling Procedures
- Waste Storage Procedures
- Waste Disposal Procedures
- Waste Auditing
- Record Keeping

5.1 Waste Minimisation

It is not proposed to 'stockpile' excavated material on the site but to excavate directly into trucks and remove from the site.

Construction Waste minimisation and prevention shall be the primary responsibilities of the Purchasing Manager and the Project Manager for the Contractor during construction of the buildings and they shall ensure the following: -

- Materials will be ordered on a 'just in time' basis to prevent over supply and site congestion.
- Materials shall be correctly stored and handled to minimise the generation of damaged materials.
- Materials shall be ordered in appropriate sequence to minimise materials stored on site.
- Sub-contractors will be responsible for similarly managing their wastes.

In addition, as the useable area for construction is confined the contractor will need to carefully manage storage of materials on site.

5.2 Programme of Waste Management for Construction Works

The Project Manager for the Contractor will determine the best methods for waste minimisation, reduction, reuse, recycling and disposal as the construction phase progresses and waste materials are generated in accordance with procedures outlined in the waste management plans.

5.3 Demolition Phase Waste Disposal Management

It is proposed that from the outset of construction activities, a dedicated and secure compound containing bins and/or skips, into which all waste materials generated by construction site activities will be established at the site.

The volume and material of waste generated is identified in section 4.6 below. The waste material generated by demolition works will be mixed Construction & Demolition (C&D) waste, comprising of concrete, blocks, timber, metals and plasterboard. Material will be sorted and separated on site into different classifications for removal off site which is considered standard procedure

It is proposed that waste materials generated by the demolition of existing structures and the construction of new structures will be collected and stored in separate clearly labelled skips in a predefined waste storage area in the site compound and that these materials will be collected by a Permitted Waste Contractor holding an appropriate Waste Collection permit in compliance with *Waste Management (Collection Permit)Regulations 2007 (SI No. 820 of 2007) and Waste Management (Collection Permit)Amendment Regulations 2008 (SI No. 87 of 2008)* and that they will be sent for recycling and reuse to appropriately Permitted / Licensed Waste Facilities in compliance with *Waste Management (Facility Permit and Registration) Regulations S.I. No. 821 of 2007and the Waste Management (Facility Permit and Registration) Amendment Regulations S.I. No. 86 of 2008.*

5.4 Construction Phase Waste Disposal Management

It is proposed that from the outset of construction activities, a dedicated and secure compound containing bins and/or skips, into which all waste materials generated by construction site activities will be established at the site.

In order to ensure that construction staff correctly segregate waste materials, it will be the responsibility of the Site Construction Manager to ensure all staff are informed by means of clear signage and verbal instruction and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

It will be the responsibility of the Project Manager or his/her delegate that a written record of all quantities and natures of wastes exported off-site are maintained in a Waste File at the Project office and that all contracted waste haulage drivers hold an appropriate Waste Collection Permit for the transport of waste loads.

Prior to the commencement of the Project, the Construction / Project Manager shall identify permitted Waste Contractor(s) who shall be employed to collect and dispose of all wastes arising from the project works. In addition, the Construction / Project Manager shall identify all waste licensed / permitted facilities that will accept all expected waste exported off-site and will maintain copies of all relevant Waste Permits / Licences as required.

5.5 On-Site Waste Reuse and Recycling Management

Due to the confined nature of the site (as building works are proposed on roughly the full footprint), there are minimal materials that can be reused or recycled on the site. The existing industrial buildings are to be demolished and the existing concrete slab is to be broken up and removed from site. All other clay, gravel and compacted topsoil materials generated during excavation will be taken off site for reuse.

5.6 Inert Wastes

The waste materials that will be generated from the site clearance will be broken down including; concrete blocks, concrete, Structural Steel, inert clays, gravels, compacted topsoil, and some timber waste materials.

The existing concrete slab will have to be broken out and removed from site. The existing concrete area is approximately 6600m². Allowing for a 200mm thick slab, it is anticipated that the slab will generate approximately 1320m³ of concrete to be demolished and removed.

The existing industrial buildings will be demolished and removed from site. The cumulative area of the buildings is 2,158m² resulting in approximately 3,235 tonnes of construction waste. The units are constructed from concrete block light structural steel and timber.

The fire to Glebe house noted in section 3.4 will result in some of the building fabric requiring removal from site. A proposed methodology for temporary works erection is outline in the CORA fire damage report which will be further developed by the contractor. This will allow for the safe removal of fire damaged materials. The materials identified to be removed as a result of fire damage are; timber stud work to first floor level, T&G floor boards at first floor level, timber stairs, timber floor joists and roof to the kitchen area. A further inspection of the existing floor joists will be required following the back propping of same and removal of fire debris above.



EXISTING SITE AREA TYPES

Figure 9: Existing Site Survey

The waste material generated by construction works will be mixed Construction & Demolition (C&D) waste, comprising of concrete, blocks, timber, metals and plasterboard. Material will be sorted and separated on site into different classifications for removal off site which is considered standard procedure.

Any wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste.

It is proposed to construct the new buildings with strip footings and pad footings bearing on good ground below the made ground build up found on site. The existing site ground level will be scraped back to achieve a suitable formation level for the landscaping build-ups. The quantity of excavated soil, stone and made ground that will be generated from these excavations has been estimated to be 21,055m³.

Preliminary Trial Holes carried out for the soakaway tests completed in November 2020 and viewed by Alan Garvey of CORA Consulting Engineers have shown a top layer of made ground, typically around one metre deep. This varies in its make-up across the site, with cohesive clay material and granular sand and gravel soils noted below. The majority of this fill material will be removed from the site. Any suitable excavated material will be temporarily stockpiled for reuse as fill, where possible, but reuse on site is expected to be limited and most if not all of the excavated soil, stone and made ground is expected to be removed off site for appropriate reuse, recovery and/or disposal. The location of the trial holes conducted is shown in Appendix C

5.7 Hazardous Wastes

While it is not anticipated to encounter hazardous wastes on the site, should any be encountered the following procedures should be followed;

5.7.1 Asbestos

While it is not anticipated to encounter hazardous wastes on the wider site, should any be encountered, the following procedure should be followed. Prior to demolition, an Asbestos Survey will be undertaken as required by current Regulations (Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010 to identify if any Asbestos Containing Material (ACM) is present..

As noted in section 3.4 above, the inspection of the fire damage to Glebe house has identified fibrebased roof tiles which may contain asbestos. An asbestos survey is to be carried out to determine if any of the debris is asbestos containing. The survey should also make recommendations on the methodology for safe removal of any asbestos containing materials.

Site demolition works that include the handling of removal of hazardous materials such as asbestos (if identified) will only be conducted by specialist hazardous waste contractors that specialise in the handling of such material. All waste asbestos will be immediately removed off-site following the correct regulated procedures by an appropriately Permitted Waste Contractor holding an appropriate Waste Collection permit and that this hazardous material will be sent for appropriate disposal to an appropriately Permitted / Licensed Waste Facility.

5.7.2 Contaminated Soil

Preliminary site testing has been carried out which indicate that contaminated soil has not been detected on the subject site. A copy of the preliminary site testing carried out are included in Appendix A of this report.

Additional geotechnical site testing is proposed in advance of detailed design work to proceed. As part of the investigation works, a waste classification report will be completed.

While it is not anticipated that there will be any contaminated soil on the site - as there have been no indications of any contamination during trial hole works, should contamination be discovered in whatever form, the following principals will be followed:-

Where it is discovered that existing grounds including top and sub soils may be contaminated by fuel oil hydrocarbons, these areas of ground will be isolated, tested for contamination, and pending the results of laboratory testing, will be excavated and exported off-site by an appropriately Permitted Waste Contractor holding an appropriate Waste Collection permit and that this hazardous material will be sent for appropriate treatment / disposal to an appropriately Permitted / Licensed Waste Facility. It is the responsibility of the Project Manager or his/her delegate that a written record of all quantities and natures of wastes reused / recycled during the project are maintained in a Waste File at the Project office.

Prior to commencement on site, it is proposed to undertake a further detailed site investigation of the site. As part of this, soils will be tested on a grid system for potential contaminates and the soils across the site will be classified in cells in a Waste Classification Report. The results of this Report will be used to assess the locations where soil being excavated from the site can be directed to.

5.8 Japanese Knotweed

A survey of the site was carried out by Knotweed Control Ireland on the 8th February 2022 with no evidence of knotweed discovered as part of the survey. A copy of the survey is included in Appendix B.

5.9 Spanish Bluebells

The ecological Impact assessment report compiled by Openfield Ecological services has identified Spanish bluebells an invasive species on the site. The report advises that the species is treated with a standard herbicide in advance of the site works. This process will be incorporated into the Contractors programme for site clearance.

Prepared by:

Alan Garvey BSC, ME, CEng, MIEI for CORA Consulting Engineers

Reviewed by:

John Pigott BE, Cert. Eng Tech., CEng, MIEI for CORA Consulting Engineers.

6 Appendix A



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US Tel: (01244) 528700 Fax: (01244) 528701 email: hawardencustomerservices@alsglobal.com Website: www.alsenvironmental.co.uk

Site Investigations Ltd The Grange Carhugar 12th Lock Road Lucan Co. Dublin

Attention: Site Investigations

CERTIFICATE OF ANALYSIS

Date of report Generation: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 11 June 2020 Site Investigations Ltd 200522-107 Knotweed Ireland Gleb House, Crumlin Village 554902

We received 1 sample on Thursday May 21, 2020 and 1 of these samples were scheduled for analysis which was completed on Thursday June 11, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results. The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan Operations Manager





ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291. Version: 2.4 Version Issued: 11/06/2020

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()		Received S	ample Overview	,	
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maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

The provide a sample shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C. Only received samples which have had analysis scheduled will be shown on the following pages.

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These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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Toluene-d8**	%	TM116	101 §					
4-Bromofluorobenzene**	%	TM116	98.5 §					
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Benzene	<9 µg/kg	TM116	<180 § M					
Toluene	<7 µg/kg	TM116	<140 § M					
Ethylbenzene	<4 µg/kg	TM116	<80 § M					
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Case Lan SDG 200522-107 Lab Sample Number(s) 22191494 Sample Ate Customer Sample Ref. Sample Do. 1 Depth (m) 0.311 3 Sound Ate Carbon (%) 0.311 3 Sam of BTEX (mpka) - - Sam of TCK (mpka) - - Sam of TCK (mpka) - - Sam of TCK (mpka) - - Shot of tr (mpka) - - Atset inic - - Atset inic - - Carbon of tr (mpka) - - Atset inic - - - Atset inic - - - Carbon of tr (mpka) - - - Atset inic - - - - Carbon of tr (mpka) - -			
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Lab Sample Number(s) 22191494 Sample Date	Criteria Limit	Criteria Limits	
Control of the second o			
Linit of Determine Sample Ref. Sample Ref. <td>Stable</td> <td>Stable</td>	Stable	Stable	
Construction of an input retriction Construction	te Hazardous Waste	Non-reactive Hazardous Waste Hazardous	
Solid Waste Analysis Result 3 Total Organic Cathon (%) 0.311 3 Loss on lights(n(%) 3.27 3 Sum of JPCBs (mgkg) -0.021 - Sum of JPCBs (mgkg) -0.021 1 Mineral Of (mgkg) - - PAH Sum of 17 (mgkg) <10	in Non-	in Non- Waste Land	
Solid Waste Analysis Result 3 Tota Organic Caton (%) 0.311 3 Loss on Ignition (%) 3.27 - Sum of TPC Kingkg) -0.021 - Sum of TPC Kingkg) -0.021 - Mineral OI (mgkg) - - ANC to pH (infulkg) 0.205 - ANC to pH (infulkg) 0.205 - ANC to pH (infulkg) 0.205 - ANC to pH (infulkg) 0.025 - ANC to pH (infulkg) 0.0013 -0.0005 -0.005 -0.005 Barium 0.00131 -0.0002 -0.0005 -0.005 -0.005 Cadmium -0.00008 -0.0008 -0.0008 -0.0003 -0.0003 Corer in 0:1 -0.0003 -0.001 -	Hazardous Landfill	Hazardous Landfill	
Total Organic Carbon (%) 0.311 3 Loss on Ighilton (%) 3.27 - </td <td></td> <td></td>			
Loss on Ignition (%) 327 Sum of IEX (mg/kg) PH (gen (gen (gen (gen (gen (gen (gen (gen	5	5 6	
Sum of TEX (mg/kg) - Mineral Oli (mg/kg) <0.021	-	- 10	
Sum of 17 (mg/kg) - 1 PAH Sum of 17 (mg/kg) - 100 pH (gH Units) 8.62 - ANC to pH 6 (molkg) 0.205 - ANC to pH 6 (molkg) 0.005 <0.0005	-		
Market Sum of 17 (mg/kg) <10 pH (gH Lunis) 8.62 ANC to pH (molikg) 0.205 Ansenic C2 Concer in 10:1 eluste (mg/l) A2 10:1 concer leached (mg/kg) Arsenic 0.00131 <0.0005 <0.005 <0.005 <0.005 <0.005 <0.002 20 Barium 0.00131 <0.0002 0.0131 <0.002 20 0.01 Copper <0.001 <0.001 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.01	-		
pt (pt (units) 8.62 - ANC to pt 4 (molkg) 0.205 - ANC to pt 4 (molkg) 4.03 - Eluate Analysis C2 Conc" in 10:1 eluate (mg/l) A2 10:1 conc" location (mg/kg) Limit v) usin Arsenic -0.0005 <0.005	-	· ·	
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Control prior (model) 4.03 A.2 10:1 clouce' leached (mg/kg) Limit of Detection Arsenic <0.0005	-		
C2 Conc ⁿ in 10:1 eluste (mg/l) A2 10:1 conc ⁿ leached (mg/kg) Limit of Detection Arsenic <0.0005	-		
Result Limit of Detection Result Limit of Detection Arsenic <0.0005	it values for compliance le using BS EN 12457-3 at L/	es for compliance leaching test S EN 12457-3 at L/S 10 l/kg	
Arbitric 0.00131 <0.003	2	2 25	
Dahlmin 0.0001 0.0002 0.0011 10.002 20 Cadmium <0.0008	100	100 300	
Contention Concept Conce Concept Concept <	1	1 5	
Copper <0.0003 <0.0003 <0.003 <0.003 2 Mercury Dissolved (CVAF) <0.0001	10	10 70	
Mercury Dissolved (CVAF) <0.0001 <0.0001 <0.0001 <0.0001 <0.0001 0.01 Molybdenum 0.00915 <0.003	50	50 100	
Molybdenum 0.00915 <0.003 0.0915 <0.03 0.5 Nickel <0.0004	0.2	0.2 2	
Nickel <0.0004	10	10 30	
Lead <0.0002	10	10 40	
Antimony <0.001 <0.001 <0.01 <0.01 <0.01 0.06 Selenium <0.001	10	10 50	
Selenium <0.001 <0.01 <0.01 <0.01 <0.01 0.11 0.11 Zine <0.001	0.7	0.7 5	
Zinc <0.001 <0.001 <0.01 <0.01 <0.01 4 Chloride <2	0.5	0.5 7	
Chloride <2 <2 <20 <20 800 Fluoride 0.515 <0.5	50	50 200	
Hudride 0.515 <0.5 5.15 <5 10 Sulphate (soluble) <2	15000	15000 25000	
Sulprate (soluble) <2 <2 <20 <20 <20 1000 Total Dissolved Solids 68 <5	150	150 500	
India Dissolved Solds 000 <30 <30 <30 4000 Total Monohydric Phenols (W) 0.02 <0.016	20000	20000 50000	
Usa monory direct methods (Vr) 0.02 <0.10	00000		
Leach Test Information	800	800 1000	
Leach Test Information			
Date Prenared DC Mary 2020			
encontroparto zo-hiay-2020			
Conductivity (uS/cm) 86.30			

Temperature (°C) 20.00 Volume Leachant (Litres) 0.882

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

Validated

200522-107 Client Reference: Gleb House, Crumlin Village Order Number: Knotweed Ireland 45/A/20

554902

Report Number: Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM182	CEN/TC 292 - WI 292046-chacterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM410	Shaker extraction-In house coronene method	Determination of Coronene in soils by GCMS
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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SDG: 200522-107 Client Reference: Knotweed Ireland Report Number: 554902 Location: Gleb House, Crumlin Village Order Number: 45/A/20 Superseded Report: 554902

Test Completion Dates

Lab Sample No(s)	22191494
Customer Sample Ref.	Sample no. 1
AGS Ref.	
Depth	
Туре	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	27-May-2020
Anions by Kone (w)	01-Jun-2020
CEN 10:1 Leachate (1 Stage)	26-May-2020
CEN Readings	29-May-2020
Coronene	26-May-2020
Dissolved Metals by ICP-MS	01-Jun-2020
Dissolved Organic/Inorganic Carbon	30-May-2020
EPH by GCxGC-FID	11-Jun-2020
Fluoride	28-May-2020
Loss on Ignition in soils	29-May-2020
Mercury Dissolved	29-May-2020
Moisture at 105C	26-May-2020
PAH 16 & 17 Calc	27-May-2020
PAH by GCMS	27-May-2020
PCBs by GCMS	27-May-2020
pH	26-May-2020
Phenols by HPLC (W)	29-May-2020
Sample description	23-May-2020
Total Dissolved Solids	27-May-2020
Total Organic Carbon	29-May-2020
VOC MS (S)	01-Jun-2020

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			CERTIFICATE	OF ANALYSIS			
ALS	SDG: Location:	200522-107 Gleb House, Crumlin Village	Client Reference: Order Number:	Knotweed Ireland 45/A/20	Report Number: Superseded Report	:	554902
Append	dix		Ger	neral			
 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All sumples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereor until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround, we UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised. 				17. Tentatively Identified Compounds (TICs) are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of <75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected its reported as "mxed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantified relative to an ear the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantified relative to an a Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.			
. NDP - No deter	mination possible o	lue to insufficient/unsuitable sample.		specific aspesitos nore type is not round this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analyzed decreded the algoring financial or aphaetos (financial training the sub-			
. Results relate o	only to the items tes	ted.	reported as detected (for each fibre type found). Testing can be carried out on asbestos				
 LoDs (Limit o pr moisture conte 	f Detection) for w int.	vet tests reported on a dry weight	positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of				
 Surrogate reco est requested. A neasured. Typica affected by organi or high amounts o quality checks pas o matrix affect. 	veries - Surrogates % recovery is repor I recoveries for org; c rich or clay rich m f sediment. Test re ss; it is assumed th	s are added to your sample to monitor ted, results are not corrected for the r anics tests are 70-130%. Recoveries i atrices. Waters can be affected by re sults are only ever reported if all of the at all recoveries outside of the values	Identification of Asbestos in Bulk Materials & Soils The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibre: using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).				
 Stones/debi epresentative sub 	ris are not routinely removed. We always endeavour to take a sample which the bample from the received sample. The results for ALS (Hawarder stop dispersion s				tor identitication of asbestos in soils are obtained from a homogenised sub sh has been examined to determine the presence of asbestos fibres using rden) in-house method of transmitted/polarised light microscopy and central on staining, based on HSG 248 (2005).		
 In certain cir reing outside to rossible interferent nethod detection 	rcumstances the r he calibration rai ences. In both ca limit to be raised.	nethod detection limit may be elev- nge. Other factors that may con- ses the sample would be diluted	ated due to the sample ntribute to this include which would cause the		Asto stor Type Chrysot le Amosite	CommonName White Asbesbs Browin Asbesbs	
2 Manual 100	ulto quotod on a	colle will not include veletile more	why as the applycia is		0-11-0-		1

12 will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time 15. Analysis and identification of specific compounds using CoFTD is by retention time only, and we noutlinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these new bid newspaces are to the context of the context non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample

than: - Trace - Where only one or two asbestos fibres were identified

Visual Estimation Of Fibre Content

Respirable Fibres

Respirable fibres are defined as fibres of <3 μm diameter, longer than 5 μm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung. Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017).

Fibrous Actinolite

Fibious Antho Fibrous Tremolite

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Estimation of fibre content is not permitted as part of our UKAS accredited test other

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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7 Appendix B

Survey Report – Japanese Knotweed Glebe House D12



Ronnie Murphy BSc Forestry H-Dip Hort Knotweed Control Ireland 08/02/2022



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THIS DOCUMENT HAS BEEN PREPARED BY KNOTWEED CONTROL IRELAND FOR THE SOLE USE OF THE PERSON OR ORGANIZATION NAMED WITHIN AND THEIR REPRESENTATIVES. THIS DOCUMENT PROVIDES POTENTIAL CLIENT SENSITIVE DATA, IT MUST NOT BE DISCLOSED TO OTHER THIRD PARTIES WITHOUT THE PRIOR WRITTEN PERMISSION OF KNOTWEED CONTROL IRELAND.



1. Introduction

On the 8th February 2022, a site assessment/survey searching directly for evidence of Japanese knotweed was undertaken at Glebe House, Dublin 12. This included a walkover survey of all areas of the site, and around part of the outside perimeter. No Knotweed plant species were recorded inside or adjacent to the site boundary.

This site was previously Surveyed on 29th May 2020 and no Knotweed plant species were recorded inside or adjacent to the site boundary at that time.

Demand for housing, infrastructure and employment-providing land has meant an increasing reliance on un-used sites around the country. Indeed, the government is coming to the end of its most recent housing plan. The plan, called Rebuilding Ireland, aimed to provide an additional 47,000 social housing units by 2021. Within this scheme the government plans to bring vacant and under-utilised housing stock back into use for both private and social housing purposes. Many of these derelict and unused properties will be infested by Invasive Plant Species. Numerous sites around Ireland have been affected by the invasion of Japanese knotweed, causing many concerns to future developers and landowners as it may have a potential impact on the time-scale and cost of the proposed project.

Note: Land owners and developers with land banks are advised to have their lands surveyed for invasive Knotweed plant species early rather than nearer to the date of site preparation. This saves costs as it gives the land owner better cost-effective options when it comes to deciding which eradication method to choose from.

Managing land infested with Japanese knotweed in an appropriate and efficient manner can avoid:

- potential prosecution and/or compensation claims;
- planning permission refusals;
- reductions in land value;
- physical damage to buildings and hard surfaces;
- harm to the environment; and
- excessive cost.

2. Methodology

The Knotweed survey was undertaken by experienced Knotweed surveyor Ronnie Murphy from Knotweed Control Ireland during which, no stands of Japanese knotweed were recorded within the site.

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3. Site Description

The property is mostly all covered in hard standing (Concrete and tarmac) with some annual and perennial weeds growing up around the edges. The property has a large area to the rear that was un-used for some years and was overgrown with weeds.

Site Address: Glebe House, Crumlin Village, Dublin 12.

4. Survey Results

There was no invasive Japanese Knotweed plant species recorded within the property boundary of the Glebe House site.

Where possible it is KCI practice to also survey around the outside perimeter and adjacent properties when carrying out Knotweed surveys. There was no Knotweed plant species recorded around the outside perimeter.

Efforts should be made with the suppliers of any soil, sand or hard-core material coming onto site, to ensure these supplies are free from invasive plant material.

All inert material imported onto sites should comply with B5: 3882 2007/15 specific to sections on invasive plant material.

If soil has recently arrived on site and is believed to be infested with invasive plant material like Knotweed this should be left undisturbed, a temporary barrier fence installed around 5-7m radius of the infestation and no disturbance carried out until checked by a specialist.

5. Legislative Framework

At an international level Ireland has signed up to a number of treaties and conventions, including the **Convention on Biological Diversity**. Such treaties and conventions require the Irish Government to address issues of invasive alien species. This has been implemented through the **Wildlife Act 1976 and 2000** and further regulated through the **European Communities (Birds and Natural Habitats)** Regulations 2011 (SI 477 of 2011).

Regulations 49 and 50 of these regulations include legislative measures to deal with the dispersal and introduction of invasive alien species:

Regulation 49

'a person shall be guilty of an offence if they: plant; disperse; allow or cause to disperse; spread or cause to grow the plant in the Republic of Ireland'. The list of species in the Third Schedule includes Japanese Knotweed, Giant Knotweed and their hybrid Bohemian Knotweed'.



Regulation 50

'an offence to or intend to; import; buy; sell; breed; reproduce or propagate; offer or expose for sale; advertise; publish a price list; transport; and distribute any plant species or vector material listed in the Third Schedule'. Non-native species subject to restrictions under Regulations 49 and 50 are included in the third schedule of the European Communities (Birds and Natural Habitats).

Regulations 2011 (S.I. 477 of 2011). The Third Schedule, Invasive species in this list include: Japanese Knotweed, Giant Hogweed, Giant Knotweed, Giant Rhubarb, Himalayan Balsam, Himalayan Knotweed, Bohemian Knotweed and Rhododendron.

The vector which applies to Knotweed species is: "Soil or spoil taken from places infested with Japanese knotweed material (i.e. facilitates spread), referred to in the regulations (Third Schedule Part 3), Giant knotweed or their hybrid Bohemian knotweed".

6. References

The Environment Agency, Managing Knotweed on Development Sites, Knotweed Code of Practice, 2013

National Action Plan for the sustainable use of pesticides (Ireland)

Property Care Association, Code of Practice for the Management of Japanese Knotweed, 2015

SEPA Technical Guidance Note On-site management of Japanese Knotweed and associated

contaminated soils, V1.5 - 2008



Managing Knotweed on Development Sites - Knotweed Code of Practice, Environment Agency - 2013



8. Photo Record

Figure 1. Photo shows rear of site at Glebe House



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8 Appendix C

