(Amended) Natura Impact Statement

Spillage and Sprinkler-Water Retention Pond at Hazelwood Distillery,Hazelwood Demesne, Calry, Co. Sligo

19 November 2020

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Executive Summary

This *Natura Impact Statement* (NIS) has been prepared by NM Ecology Ltd on behalf of Hazelwood Demesne Ltd (the applicant).It was originally submitted in June 2020, but has subsequently been amended in response to a request for further information from Sligo County Council.

The proposed development will involve the construction of a spillage and sprinkler-water retention pond, with associated berm and laying of services. The pond will be part of the safety and fire management system for the distillery: if a spillage occurred or if the sprinkler system was triggered during a fire, the water would be collected in floor-level drains and stored temporarily in the pond, where it could be pumped into tankers and removed from the site.

The footprint of the proposed developmentisin close proximity to, but outside of, the *Lough Gill* SAC. In accordance with their obligations under the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011), the planning authority (in this case Sligo County Council) must assess whether the proposed development could cause 'likely significant effects' on this or any other Natura 2000 sites. This document provides supporting information to assist the authority with an Appropriate Assessment, including: a description of the proposed development, a review of the site's environmental setting, details of Natura 2000 sites within the potential zone of impact, an appraisal of *source-pathway-receptor* relationships, and an assessment of potential impacts.

The proposed development will be adjacent to some broadleaf woodland that is a qualifying interest of the SAC. However, there will be no works within the SAC boundary, no removal of trees within or adjacent to the SAC boundary, and no works within the potential root zone of these trees. All other qualifying interests of the SAC are aquatic habitats or species that are located over 100 m from the proposed development site. Therefore, there will be no direct impacts on any of the qualifying interests of the SAC.

The Garvogue River, which is part of the SAC, is located approx. 100 m to the west of the Site. During the construction of the proposed development there is a risk that pollutants (suspended sediments, concrete/cement and hydrocarbons) could cause indirect impacts on aquatic habitats and fauna in the river. In response, a range of mitigation measures will be implemented during the construction of the project in order to retain and manage any pollutants within the boundary of the proposed development site. Subject to the successful implementation of these measures, we conclude that the proposed development will not have significant impacts on any Natura 2000 sites.

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1 Introduction

1.1 Background to this assessment

In June 2020, the applicant submitted a planning application to Sligo County Council (planning reference 20180) for a sprinkler water and spillage run off retention pond, and associated works. The application was accompanied by a *Natura Impact Statement* prepared by NM Ecology Ltd.

Comments on the NIS were received from the National Parks and Wildlife Service (NPWS), a statutory consultee. In July 2020, Sligo County Council (SCC) issued a request for further information, which included the points raised by the NPWS, as well as some other items. The information requested by SCC can be summarised as follows:

- Point 1(a) addressed the potential effects of imported material on the pH of soil and water
- Points 1(b) to 1(f), 1(h) and 1(i) related to aspects of the construction and operation of the development
- Point 1(g) addressed potential impacts on woodland habitats from the installation of a temporary silt fence during construction works
- Point 1(j) related to potential in-combination effects
- Points 1(k) related to the definition of mitigation measures, and how they relate to the qualifying interests of the SAC
- Point 1(l) requested details of field visits and ecological surveys
- Point 1(m) related to the conservation status of qualifying interests
- Point 1(n) addressed the process for screening sites out of the assessment
- Point 1(o) referred to specific details for each habitat and species within the SAC
- Point 1(p) requested the inclusion of supporting information as appendices to the NIS
- Point 1(q) related to accurate mapping of the SAC boundary
- Point 1(r) addressed potential alternatives to the development

SCC also requested an Emergency Response Plan (Point 2) and a Construction / Demolition Waste Management Plan and associated Environmental Management Plan (Point 3). These issues do not relate to the NIS, and are addressed elsewhere in the submission.

1.2 Further information provided

In response to point 1 of the SCC FI request, the Natura Impact Statement has been amended, replacingthe previous version of the NIS submitted in June 2020.The locations of requested information are summarised in Table 1 below.

Table 1: Locations in which the further information can be found within this report

FI point	Response	Prepared by
1(a) to 1(f), and 1(h) and 1(i)	Further details of the design, construction and operation of the scheme are outlined in **Section 2.2** of the NIS, and in the CEMP in **Appendix A**	SSA Architects
1(g)	Potential impacts on woodland habitats from the silt fence mitigation are discussed in **Section 6.1**	NM Ecology
1(j)	The 'in-combination effects' in **Section 2.3** have been revised	NM Ecology
1(k)	This is addressed in **Sections6.2,7and8**	NM Ecology
1(l)	Further details of field visits have been provided in **Section 1.5**	NM Ecology
1(m)	Accurate mapping of the SAC boundary is provided in Figure 4 in **Section 4.1**, and the conservation status of qualifying interests is provided in **Section 5**	NM Ecology
1(n)	The rationale for the 5 km potential zone of impact is provided in **Section 4.1**	NM Ecology
1(o)	A table summarising the direct impacts, indirect impacts, mitigation measures and residual impacts on qualifying interest is provided in **Section 8**	NM Ecology
1(p)	Further details of the design, construction and operation of the scheme are outlined in **Sections2.1 and 2.2** of the NIS, and in the CEMP in **Appendix A**	SSA Architects
1(q)	Accurate mapping of the SAC boundary is provided in Figure 4 in **Section 4.1**, and the proximity of works to the SAC boundary is discussed in**Section 4.2**	SSA Architects and NM Ecology
1(r)	Alternative options are outlined **Section 2.2**	SSA Architects

1.3 Background to Appropriate Assessment

Approximately 10% of the land area of Ireland is included in the European Network of Natura 2000 sites, which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect habitats and non-avian fauna. Legislative protection for these sites is provided by the *European Council Birds Directive* (79/409/EEC) and *E.C. Habitats Directive* (92/43/EEC, as amended), which are transposed into Irish law by the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011).

In accordance with Article 42 of the national regulations, planning authorities must consider the potential impacts of any development on the integrity of the Natura 2000 network. The first stage of this process is a simple screening exercise to determine whether the development has potential to affect any Natura 2000 sites. If there is a viable risk of impact (adopting a precautionary approach), the development should proceed to the second stage of the process, which is known as 'Appropriate Assessment' (AA). In Section 3.1 of *Appropriate Assessment of Plans and Projects in Ireland*, the second stage of the AA process is described as follows:

> *"This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a Natura Impact Statement* […] *to identify and characterise any possible implications for the site in view of the site's conservation objectives, taking account of in-combination effects. This should provide information to enable the competent authority to carry out the appropriate assessment. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 4, or the plan or project should be abandoned. The Appropriate Assessment is carried out by the competent authority, and is supported by the Natura Impact Statement."*

This document is a Natura Impact Statement, which provides supporting information to assist the planning authority with an Appropriate Assessment, and includes the following sections: a description of the proposed development, details of Natura 2000 sites within the zone of impact, an appraisal of potential pathways for indirect effects, an assessment of potential impacts, mitigation measures, and a conclusion.

1.4 Statement of authority

This report was written by Nick Marchant, the principal ecologist of NM Ecology Ltd. He has an MSc in Ecosystem Conservation and Landscape Management from NUI Galway and a BSc in Environmental Science from Queens University Belfast. He is a member of the Chartered Institute of Ecology and Environmental Management, and operates in accordance with their code of professional conduct.

He has thirteenyears of professional experience, including ten years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He provides ecological assessments for developments throughout Ireland and Northern Ireland, including wind farms, infrastructural projects (roads, water pipelines, greenways, etc.), and a range of residential and commercial developments.

1.5 Methods

Guidelines and general approach

This report has been prepared with reference to the following guidelines:

- *Appropriate Assessment of Plans and Projects in Ireland* (Department of the Environment, Heritage and Local Government, 2010)
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4),* E.C., 2002
- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal* (Chartered Institute of Ecology and Environmental Management, 2019)

In accordance with Section 3.3.6 of *Appropriate Assessment of Plans and Projects in Ireland*, the report accompanying an Appropriate Assessment includes the following components:

1. Describes the plan or project in sufficient detail to make clear its size, scale and objectives
2. Describes the baseline conditions, conservation objectives, and relevant ecological and environmental issues in relation to the relevant Natura 2000 sites
3. Identifies potential adverse impacts of the plan or project on the Natura 2000 sites
4. If possible, explains how those effects will be avoided through mitigation
5. Sets out a timescale and identifies the mechanisms through which the mitigation measures will be secured, implemented and monitored

Desk and field studies

Internet-based resources were accessed from the following sources:

- Plans and specifications for the proposed development
- Qualifying interests and conservation objectives of Natura 2000 sites from www.npws.ie
- Bedrock, soil, subsoil, surface water and ground water maps from the Geological Survey of Ireland webmapping service (www.gsi.ie/mapping.htm), the National Biodiversity Data Centre (http://maps.biodiversityireland.ie/), and the Environmental Protection Agency web viewer (http://gis.epa.ie/Envision/)
- The *Sligo County Development Plan* 2017 - 2023, the*Sligo &Environs Local Area Plan*2010-2016 (which has been extended, pending an update), and details of permitted or proposed developments from the local authority's online planning records

All web-based resources were accessed between January and October2020. A series of site inspections were carried out in 2015 and 2016 as part of the original Ecological Impact Assessment for the development, and the area has not changed since that time. Nonetheless, the area was resurveyed in September 2020 during the preparation of this FI Response.

2 Description of the proposed development

2.1 Proposed development

The proposed development will be a spillage and sprinkler-water retention pond, which will form part of the safety and fire management systems for the distillery. If a spillage occurred, or if a fire caused the activation of the sprinkler system, the excess water would then be channelled into floor-level drainage within the facility, and would flow by gravity into the retention pond. The pond would temporarily store the runoff until it can be removed from the site. The drainage system will prevent the spread of fire to the retention pond. Overall, this system will prevent the spread of inflammable material (e.g. alcohol), the flooding of the facility, or the flow of contaminated runoff into the surrounding area.It is an standard approach adopted at industrial facilities across Ireland.

Construction phase

The pond will be located to the west of the distillery building, in an area that previously contained storage tanks used by the former owners of the facility (Figure 1). The surface area of the pond will be 1,262m^2, and the volume will be 3,428m^3. A berm of 3m height and width will be constructed to the west of the pond. Pipelines between the distillery and pond will be installed in trenches.The footprint of the proposed development will be entirely outside the SAC boundary.

Further details of construction methods and environmental mitigation measures are outlined in the Construction and Environmental Management Plan for the development, which is provided in Appendix A.

Operational phase

In the event of a spillage or fire the pond may contain contaminants such as alcohol, ingredients, waste products, charred materials and / or fire-fighting foam. When the spill / fire has been controlled, a specialist waste contractor will be engaged to inspect the material present and advise on the waste management requirements. Contaminated waste would be removed by tanker and treated off-site at a specialist waste management facility.

At all other times, the pond will remain empty. It will accumulate rainwater over time, which will be harvested for use within the distillery. Rainwater will be free of any contaminants.

2.2 Additional information requested by SCC

Further information has been provided by the project architects and engineers in relation to various aspects of the construction and operation of the development. This information is outlined below.

1(a)Potential effects of imported material on the pH of soil and water

The imported materials will include:

- Crushed limestone aggregates for pipe laying, filling gabion baskets, and as a sub-layer for the pond liner. This material will be similar to the existing bedrock and will have no effect on the pH or characteristics of the groundwater
- Concrete drainage pipes. These will be cured at the works and may discharge water with a slightly elevated pH in the short-term. Note that these flows will be captured by the pond during construction works, and will be checked and pumped to the on-site waste water treatment plant. There is no direct surface water discharge to any nearby waterbodies or the SAC
- Ready-mix concrete for manhole construction and miscellaneous small structures. Similar to the above, there may be small quantities of water with elevated pH, but these will be treated before discharge
- Steel mesh reinforcement. This will be embedded in the concrete so will not release any contaminants
- High-Density Polyethylene (HDPE) pond lining materials. This material is inert and is joined by heat-welding equipment, i.e. no adhesives or bonding chemicals will be used.

1(b)Extent and construction method of the proposed berm

The berm will be constructed using site-won materials, supplemented by gabion baskets where necessary. It will allow all surplus excavated materials to be kept on site and remove the need to dispose of them elsewhere. The berm will be constructed on the side of the pond facing the SAC and will act as a visual barrier when viewing the area from the public walkway. The plant side will be kept open for operation and maintenance access.

1(c) Proposals for the storage of contaminated waste material, 1(d) Combined impacts of storage contaminants and harvested water, and 1(e) Leaching into and/or pollution of soils and hydrologically-linked water courses

(Combined response) These three points relate to the leaching of materials to groundwater and/or surface water. It should be noted that the pond will have an impermeable liner, which will prevent any leaching of materials. Therefore, the only method by which materials could reach groundwater is if the pond was to overflow. This is discussed in the following response from the project architects.

The risk of contaminants being released to the SAC either through an accidental spill or a fire event is recognised and has been assessed. Although the distillery is not an EPA-regulated site, the pond has been designed in accordance with the Agency's published guidance document '*EPA Guidance on Retention Requirements for Firewater Run-off*' issued in 2018. This document specifies calculated retention volumes, including stored product, rainwater over

the period of a storm with a specified return period, and fire-fighting water. All of these components have been included in the pond volume calculations.

1(f) The use or otherwise of an impermeable pond liner

An impermeable pond liner will be installed on the base of the pond to prevent any leakage or leaching of potential pollutants into the groundwater. Note that the pond will be normally empty and any contaminated water that may be held will be tested and sent for treatment as quickly as possible, i.e. there will be no long-term storage.

The liner will be constructed using 2mm HDPE sheeting, which is the industry standard for this type of installation. The lining material will come with factory certification, and rigorous testing, both on-site and in a laboratory, will ensure that all welds and joints are strong and watertight. The main welding procedure will be double wedge welding, where the material is joined by heating to melting point and applying pressure; the double seam leaves a contained void between the seams that can be air tested.

Extrusion welding will also be used for smaller runs; in this case molten HDPE is applied to the joint, with a copper wire included that can be tested electrically on completion. Destructive tests of sample welds are carried out on site, and on completion coupons are taken from the site welds to be tested under laboratory conditions. The liner will be underlain by a conductive material, loose-laid and lapped. A small charge can be applied to this material, and the liner scanned electrically: any current detected will indicate a fault in the liner, which can be repaired. This procedure can be carried out periodically to ensure the continued integrity of the liner.

1(g)Potential impacts on woodland habitats from the temporary silt fence

The silt fence mitigation will be kept inside the site and will not impact on the SAC. Further details are provided in Section 6.1 of this report.

1 (h) The location of dewatering to the east of the site

The pond will accumulate rainwater over its surface, which will be pumped out periodically to maintain capacity. As these volumes are small, it is proposed to harvest it for use within the distilleryrather than discharging directly to surface water. Rainwater is considered to be unpolluted, so the treatment is a precautionary measure.

1(i) Impacts arising from construction materials are insufficiently addressed

This has been outlined in the response to Item 1(a) above.

1(r) Alternative options that were considered

The EPA guidance note specifies that firewater retention systems must be automatic and must not require manual intervention (e.g. closing diversion valves, starting pumps) in the event of a significant fire event. The system which is the subject of the application is designed to work

by gravity, with no emergency response required to ensure containment, recognising that the warehousing area of the site is normally unmanned. The natural location for the retention pond is then the lower part of the site; while other options to the east were explored, there were significant difficulties in ensuring adequate falls in the pipelines over long distances, increasing the risk of back-up in the system.

The location is also a 'brown-field' site in an area already used for plant utilities, so has minimal impact on habitat or landscaped area.

2.3 Other nearby developments (potentialin-combinationeffects)

The proposed development site is included in the green belt of the *Sligo and Environs Development Plan* 2010-2016 (which has been extended, pending an update), for which the planning objective is to "*prevent encroachment of development in environmentally-sensitive and visually vulnerable areas*". It is noted that Hazelwood House and the associated factory building are currently being converted to a whiskey distillery, and that some associated construction and planning works are ongoing. However, the greenbelt zoning will prevent any other major developments in the vicinity of the site, so future development in the area would be small in scale and unlikely to cause cumulative / in-combination impacts with the proposed development.

The proposed development will form part of the Hazelwood Distillery. The primary consent for this development was granted in 2016 (planning reference 15296), and can be summarised as follows: 1) alterations and change of use of the former Saehan Media factory to a whiskey distillery, 2) external and internal refurbishment of Hazelwood House to provide a visitor centre, 3) refurbishment and change of use of existing out-buildings from stables to craft workshops/trade displays, and 4) associated works. At the time of writing the whiskey distillery is operational, and other aspects of the development are still under construction. The planning application was accompanied by a Natura Impact Statement (NM Ecology Ltd, 2015), which included pollution-prevention measures and procedures for the management of invasive species, and subsequently concluded that the development would not cause likely significant effects on any Natura 2000 sites.

An amendment to this application was submitted in 2018 (planning reference 18412) to allow for an onsite waste water treatment plant with a PE of 104, which would discharge to ground via a sand-polishing filter. The application was accompanied by a Natura Impact Statement (NM Ecology Ltd, 2019) that concluded that the development would not cause likely significant effects on any Natura 2000 sites.

A planning application was submitted in 2020 (planning reference 20127) for the demolition of an existing ruined dwelling house (near the Garvogue River, within Hazelwood Demesne) and the construction of a two-storey replacement dwelling in its place. The application was

accompanied by a Natura Impact Statement (NM Ecology Ltd, 2020), which proposed some pollution-prevention measures during construction works, and concluded that the development would not cause likely significant effects on any Natura 2000 sites.

Live and recently-approved planning applications in the vicinity of the site were reviewed on the online planning records of Sligo County Council. No other planning applications were noted in the vicinity of the site.

3 Receiving environment

3.1 Environmental setting

The Hazelwood Demesne is located on a peninsula between Lough Gill (to the south and east) and the Garvogue River (adjacent to its western boundary). The main property (Hazelwood House) is a three-storey 18th century Palladian-style residence. In the 1960s, a large factory was built to the south of the property. The residence and factory have been used for a range of public services and private industry, but all activity ceased in 2006. In May 2016, the applicant received planning permission for the development of a whiskey distillery and visitor centre.

Hazelwood House and the factory are surrounded by a large expanse of ancient / long-established broadleaved woodland, which extends along the valley of the Garvogue River to the north-west of the site. With the exception of the Hazelwood Demesne, the rest of the peninsula is owned by Coillte and is managed for public amenity and nature conservation. It is one of the largest and longest-established expanses of broadleaved woodland in Sligo.

The proposed development site islocated approx. 50 m to the west of the factory building. It formally contained some fuel / chemical storage tanks, which are visible on historical aerial photography (Figure 1). However, these tanks were decommissioned and removed between 2006 and 2009, and the ground was reinstated with gravel and building rubble (Figure 2).

In the surrounding area, there is woodland to the west and south of the proposed development site, a decommissioned waste water treatment plant to the north, and some amenity grassland and mature trees to the east.

3.2 Geology, groundwater and soils

The underlying bedrock is a dark, fine-grained, cherty, limestone, which is a regionally-important, karstified aquifer. Subsoils are shale / sandstone till, and soils are acid brown earths / brown podzolics (deep, well-drained, derived from acidic materials). Considering the relatively flat topography of the proposed development site and the high permeability of the bedrock and soils, it is expected that most rainwater would percolate to ground rather than

flowing over land. However, during periods of high rainfall some material may flow over land in a westerly direction towards the Garvogue River.

Figure 1: Aerial photography of the proposed development site in January 2006, obtained from the 'Historical Imagery' tool in Google Earth

Figure 2: Building rubble and gravel at the location of former storage tanks (Sept 2020)

3.3 Hydrology

The proposed development will be located approx. 100 m to the east of the Garvogue River at its closest point. The Garvogue River and Lough Gill are part of the Garvogue Water Management Unit, which is fed by a large catchment to the north, east and south of the lake. The Garvogue River is the main outlet from Lough Gill, and flows north-west through Sligo town, reaching the transitional waters of Sligo Harbour / Garvogue Estuary approx. 5.5 km downstream, and ultimately reaching coastal waters in Sligo Bay a further 6.5 km to the west.

Under the Water Framework Directive status assessments 2010-2018, Lough Gill is currently of Moderate status, the Garvogue River is of Poor status, the transitional waters of Sligo Harbour are of Moderate status, and the coastal waters are of Good status.

4 Description of Natura 2000 sites

4.1 Identification of Natura 2000 sites within the zone of impact

The proposed development site is in close proximity to, but outside the boundary of, the Lough Gill SAC. The location of the proposed development relative to the SAC boundary is shown in Figure 4. The SAC boundary was obtained from the NPWS online database.

Potential indirect impacts on Natura 2000 sites were assessed within a potential zone of impact of 5km. In *Appropriate Assessment of Plans and Projects in Ireland*, it is stated that the potential 'zone of impact' of a development "*must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in combination effects.*" For this NIS we consider that a 5 km potential zone of impact is proportionate for the moderate scale of the development, the unsuitability of habitats for bird species from SPAs (e.g. peregrine and chough in the *Sligo / Leitrim Uplands* SPA, which is 6.6 km to the north), and because it will not involve any direct discharges to surface water or groundwater. Details of relevant sites are provided in Table 2, and their locations are shown in Figure 3.

Table 2: Natura 2000 sites within 5km of the proposed development site

Site name	Distance	Qualifying Interests
Lough Gill SAC (site code 1976)	5 m west	**Annex I Habitats:**natural eutrophic lakes; old sessile oak woods; alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* **Annex II Species:**white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, Atlantic salmon, otter
Cummeen Strand / Drumcliff Bay SAC (627)	3.5 km downstream	**Annex I Habitats:** estuaries; mudflats and sandflats; embryonic shifting dunes; shifting dunes with *Ammophila arenaria*; fixed coastal dunes with herbaceous vegetation; *Juniperus communis* formations on heaths or calcareous grasslands; petrifying springs with tufa formation (Cratoneurion) **Annex II Species:** narrow-mouthed whorl snail*,* sea lamprey; river lamprey; common seal
Cummeen Strand SPA (4035)	3.9 km downstream	**Habitats:** coastal wetlands **Special conservation interests:** wintering populations of light-bellied brent goose, oystercatcher and redshank

4.2 Proximity of works to the *Lough Gill* SAC

Figure 4 shows the location of the proposed development site relative to the *Lough Gill* SAC boundary. This figure was prepared by the project architect based on a topographical survey and tree survey. The footprint of the proposed development is shown in blue, and the SAC boundary (obtained from the NPWS online database) is shown in purple. The locations of trees are also shown, including the canopy extent (in green) and the potential root zone (in red). This figure demonstrates that the proposed development will be wholly outside the boundary of the SAC, nor will it affect the root zones of any trees associated with the SAC.

Some trees are located in the south-eastern corner of the proposed development site, and will need to be felled in advance of construction works. The majority of these trees are Leyland Cypress (*X Cuprocyparis leylandii*), and there are a small number of Italian Alder (*Alnus cordata*). These trees are non-native, and would not meet the criteria for any of the Annex I woodland habitats of the *Lough Gill* SAC, nor are they located within the SAC boundary.

Figure 3	Natura 2000 sites
Location	Hazelwood Distillery
Applicant	Hazelwood Demesne Ltd
Date	28-04-2020

NM Ecology Ltd - Ecological Consultants
Website: www.nmecology.com
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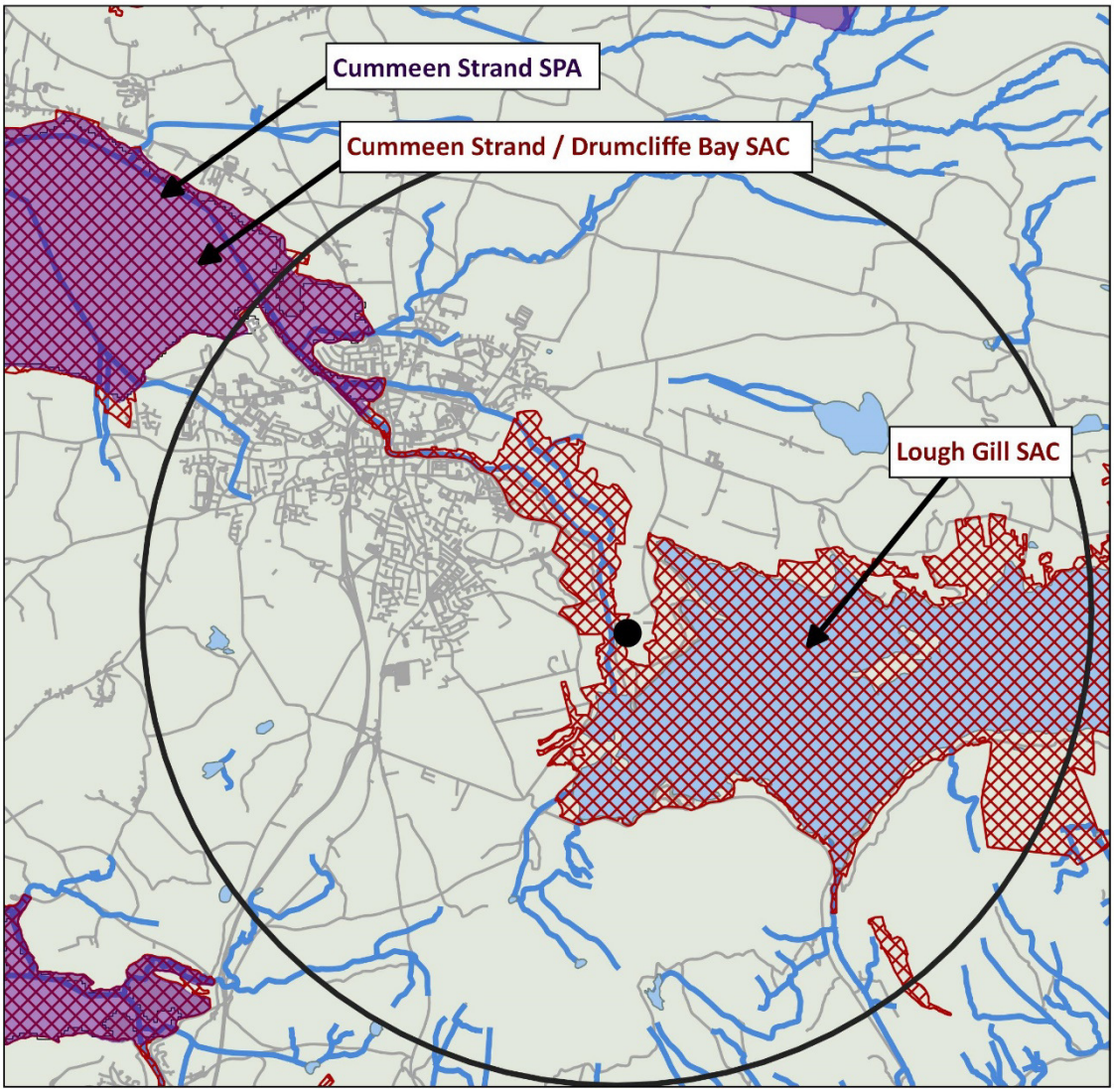
Site location
- Proposed development site
- Buffer zone (5km)
- Public roads
- Waterbodies

Designated sites
- Special Area of Conservation
- Special Protection Areas



NM ECOLOGY

0 1 2 3 4 5 km

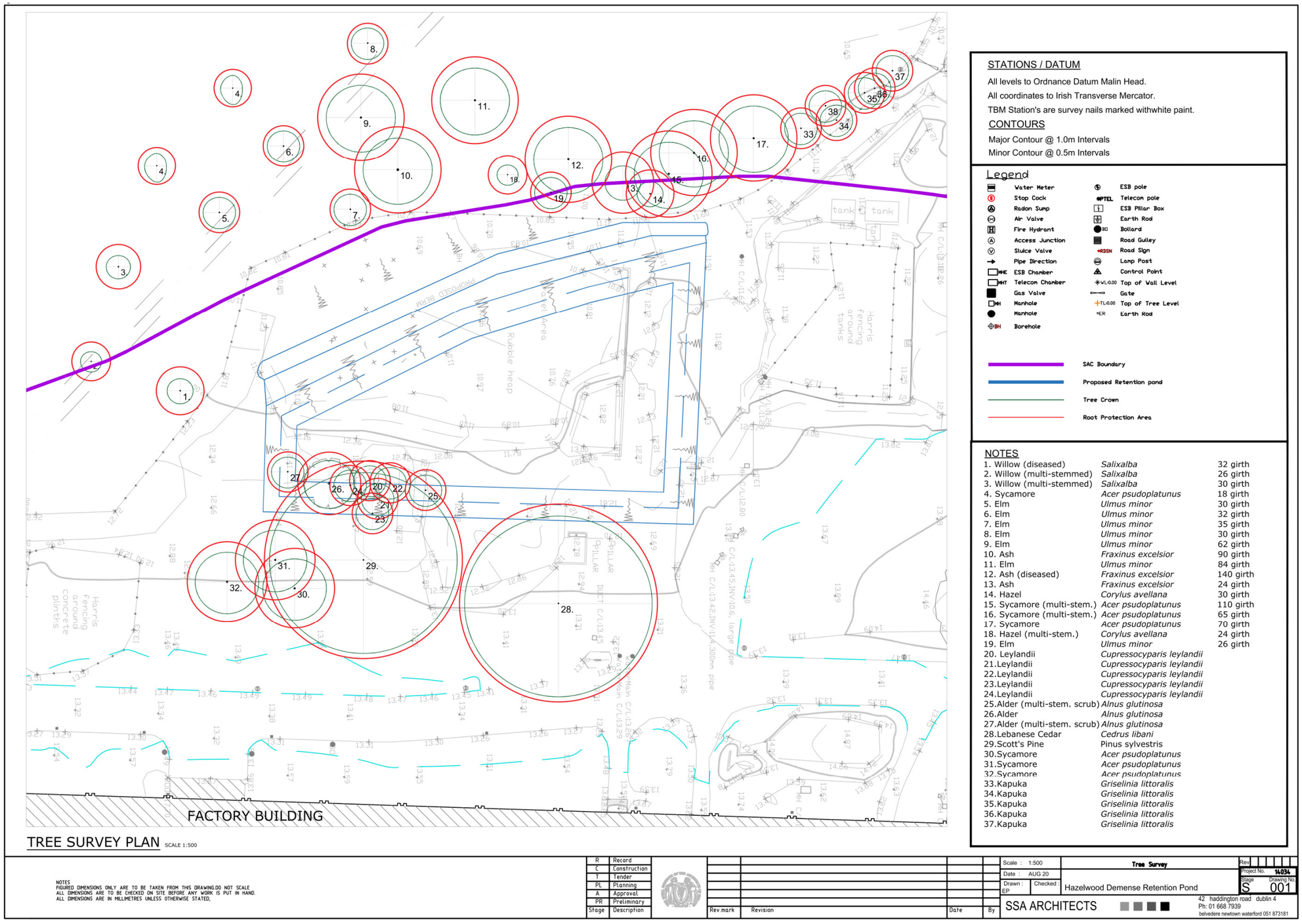


Figure 4: Location of proposed development (blue lines) relative to the SAC boundary (purple line) and the canopies (green) and root zones (red) of trees

4.3 Identification of potential pathways for indirect impacts

Indirect impacts on designated sites can occur if there is a viable pathway between the source (the proposed development site) and the receptor (the habitats and species for which a site has been designated). The most common pathway for impacts is surface water, for example if a pollutant is washed into a river and carried downstream into a designated site. Other potential pathways are groundwater, air (e.g. sound waves or airborne dust), or land (e.g. flow of liquids, vibration). The zone of effect for hydrological impacts can be several kilometres, but for air and land it is rarely more than one hundred metres. The magnitude of impacts (e.g. the concentration of pollutants) usually decreases as the distance between source and receptor increases. An appraisal of potential pathways between the proposed development and nearby Natura 2000 sites is provided below.

The proposed development site is within a few metres of the boundary of the *Lough Gill* SAC. The ground slopes from east (high ground) to west (low ground), so there could be pathways to the SAC via land, air, surface water and / or groundwater. These pathways require further consideration in the impact assessment in Section 6 of this document.

There is also a risk of indirect impacts on the *Cummeen Strand* SPA and *Cummeen Strand / Drumcliffe Bay* SAC, both of which are downstream on the Garvogue River. However, as the *Lough Gill* SAC is much closer to the proposed development site than the *Cummeen Strand* SAC / SPA, any indirect impacts on the former would be of greater magnitude than the latter. Therefore, for the purposes of this report, impacts will be assessed primarily in relation to the *Lough Gill* SAC, but the conclusions would also apply to the *Cummeen Strand*SAC / SPA, even though the sites will not be discussed explicitly.

4.4 Distribution of qualifying interests of the *Lough Gill* SAC

The SAC has been designated for the protection of three habitats: natural eutrophic lakes, old sessile oak woods, and alluvial forests. The 'natural eutrophic lake' refers to both Lough Gill and the Garvogue River; the lake is approx. 500 m to the south and east of the proposed development site, and the river is approx. 100 m to the west. The 'old sessile oak woods' and 'alluvial forests' refer to the ancient / long-established broadleaved woodland around the margins of the lakes.

Broadleaved woodland within the SAC is located just outside the western boundary of the proposed development site, and the limbs of some trees partially overhang the boundary. There is also a patch of Leyland Cypress and Italian Alder in the south-east of the pond, as well as some mature conifers to the east, but all of these trees are outside the boundary of the SAC, and do not meet the criteria for Annex I habitats. For ease of reference, the distribution of trees relative to the SAC boundary is shown in Figure 4.

The SAC has been designated for the protection of a number of aquatic species: Atlantic salmon, sea, brook and river lamprey, white-clawed crayfish and otter. The primary habitats for all of these species are the lake and river. The fish and crayfish are exclusively aquatic, but otters also occupy holts and other breeding / resting places in terrestrial habitats near the water's edge. The author has surveyed the proposed development site on a number of occasions since 2015, and has never recorded any holts (or other breeding / resting places) in the vicinity of the proposed pond. This is likely to be due to anthropogenic activity and development in the adjacent factory over recent decades.

4.5 Conclusion of Stage 1: Screening Statement

In Section 3.2.5 of *Appropriate Assessment of Plans and Projects in Ireland*(NPWS 2010), it is stated that the first stage of the AA process can have three possible conclusions:

1. **AA is not required**
   Screening, followed by consultation and agreement with the NPWS, establishes that the plan or project is directly connected with or necessary to the nature conservation management of the site

2. **No potential for significant effects/AA is not required**
   Screening establishes that there is no potential for significant effects and the project or plan can proceed as proposed.

3. **Significant effects are certain, likely or uncertain**
   The plan or project must either proceed to Stage 2 (AA), or be rejected.

Having considered the particulars of the proposed development, we conclude that this application meets the third conclusion, because significant effects are uncertain. Due to the proximity of the proposed development site to the*Lough Gill* SAC, there is a risk of both direct and indirect impacts, which must be considered in greater detail. Therefore, in accordance with the precautionary principle,we suggest that the assessment cannot be concluded at Stage 1 of the Appropriate Assessment process, and must proceed to Stage 2. The following sections include information to support a Stage 2 assessment, including the conservation objectives for relevant sites (Section 5), an assessment of potential impacts (Section 6), mitigation measures (Section 7), residual impacts (Section 8), and a conclusion (Section 9).

5 Further details of the *Lough Gill* SAC

5.1 Generic conservation objectives

The standard conservation objective of any SAC in Ireland is "*To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected."*The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The National Parks and Wildlife Service has published detailed conservation objectives for a number of Natura 2000 sites in Ireland, including lists of attributes and targets for each qualifying interest, and maps showing the distribution of qualifying interests. However, detailed conservation objectives have not yet been published for the *Lough Gill* SAC. At the time of writing, the latest available information on the NPWS website is a document dated 07/04/2020, which provides only generic conservation objectives.

As noted in Section 4.4, a number of the qualifying interests of the *Lough Gill* SAC may occur in the vicinity of the proposed development site. The current conservation status of these species in Ireland is discussed below, taken from the latest Article 17 reports (NPWS 2019a, 2019b).

5.2 Current conservation status of Annex I habitats

Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation are currently considered to be of inadequate status in the Republic of Ireland due to long-term problems with water quality (NPWS 2019a).The main threats to their conservation status are:

- High importance: agricultural activities generating point-source pollution to surface or ground waters; agricultural activities generating diffuse pollution to surface or ground waters; forestry activities generating pollution to surface or ground waters; discharge of urban waste water generating pollution to surface or ground waters; modification of hydrological flow
- Medium importance: physical alteration of water bodies; plants, contaminated or abandoned industrial sites generating diffuse pollution to surface or ground waters; peat extraction; pollution to surface or ground water due to urban run-offs

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles are currently considered to be of bad status in Ireland, as they are highly fragmented and damaged by invasive non-native species and overgrazing by deer (NPWS 2019a). The trend is considered to be deteriorating, based mainly on more accurate studies in recent years. The main threats to this habitat are:

- High importance: invasive species (other than species of EU concern); intensive grazing or overgrazing by livestock
- Medium importance: problematic native species; clear-cutting or removal of all trees; storm or cyclone

Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* are currently considered to be of bad status in Ireland, as they are highly fragmented and damaged by both invasive non-native species (e.g. sycamore, beech) and native species (e.g. bramble, nettle, NPWS 2019a). The trend is considered to be deteriorating, based mainly on more accurate studies in recent years. The main threats to this habitat are:

- High importance: invasive species (other than species of EU concern)
- Medium importance: problematic native species; clear-cutting or removal of all trees; plant and animal diseases, pathogens and pests

5.3 Current conservation status of Annex II species

White-clawed crayfish are currently considered to be of bad status in Ireland, due to the high risk of introduced diseases and non-native species (NPWS 2019b). The main threats to their conservation status are:

- High importance: plant and animal diseases, pathogens and pests; invasive alien species of EU concern

Sea lamprey are currently considered to be of bad status in Ireland, due to man-made barriers to upstream migration (e.g. weirs), which limit access to spawning beds and juvenile habitat (NPWS 2019b). The main threats are:

- High importance: hydropower (dams, weirs, etc), including infrastructure; increases or changes in precipitation due to climate change

- Medium importance: application of natural fertilisers on agricultural land; application of synthetic fertilisers on agricultural land; drainage for use as agricultural land; marine fish and shellfish harvesting causing reduction in species/prey populations; threats and pressures from outside the member state; temperature changes due to climate change; droughts and increases in precipitation due to climate change

Brook lamprey are of favourable status in Ireland (NPWS 2019b). The main threats are:

- Medium importance: application of natural fertilisers on agricultural land; application of synthetic fertilisers on agricultural land; drainage for use as agricultural land; clear-cutting or removal of all trees; hydropower (dams, weirs, etc), including infrastructure; pollution to surface or ground water due to urban run-offs; discharge of urban waste water generating pollution to surface or ground waters;temperature changes due to climate change; droughts and increases in precipitation due to climate change

River lamprey are of favourable status in Ireland (NPWS 2019b). The main threats are:

- High importance: hydropower (dams, weirs, etc), including infrastructure; increases or changes in precipitation due to climate change
- Medium importance: application of natural fertilisers on agricultural land; application of synthetic fertilisers on agricultural land; drainage for use as agricultural land; shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging); temperature changes due to climate change; droughts and increases in precipitation due to climate change

Atlantic salmon are currently of inadequate status in Ireland, due to low marine survival, and poor water quality in their freshwater spawning habitats (NPWS 2019b). The main threats are:

- High importance: agricultural activities generating point-source pollution to surface or ground waters; other impacts from marine aquaculture, including infrastructure; physical alteration of water bodies; temperature changes due to climate change
- Medium importance: agricultural activities generating diffuse pollution to surface or ground waters; forestry activities generating pollution to surface or ground waters; discharge of urban waste water generating pollution to surface or ground waters; modification of flooding regimes, flood protection for residential or recreational developments; illegal harvesting, collecting and taking; invasive species (other than species of EU concern);

Otters are of favourable status in Ireland (NPWS 2019b). There are currently no threats to their status.

6 Assessment of potential impacts

6.1 Direct effects on the qualifying interests of the SAC

Permanent components of the proposed development

The footprint of the proposed development is outside of the SAC boundary (Figure 4), and no works are proposed within the SAC boundary. None of the trees within or adjacent to the SAC boundary will be felled or pruned. There will be no works within the potential root zone of any of the trees within the SAC. Therefore, there will be no direct impacts on any Annex I woodland habitats within the SAC.

Similarly, there will be no direct impacts on any of the Annex II species (salmon, lamprey, crayfish or otters). There are no otter holts in the vicinity of the proposed development, and all other species would be restricted to the Garvogue River, which is approx. 100 m away.

Installation of temporary silt fences during construction works

The following is included as a mitigation measure for the project (refer to Section 7.1):

> "*…a silt fence will be installed along the western side of the proposed berm. The lower 200 – 300 mm of the membrane will be buried vertically underground, or if this is impeded by tree roots, it will be held in place using sandbags.*"

The purpose of this measure is to prevent the overland flow of surface water into the SAC during construction works. As a mitigation measure it would usually not be considered in the impact assessment, but it has been included here following a request for further information from the National Parks and Wildlife Service, as follows: "*you are requested to address … the impact to (qualifying interests) woodland habitats from the silt fence mitigation (e.g. buried and sandbags)*"

It had originally been intended that the silt fence would be installed along the fenceline on the western boundary of the construction area, but due to the concerns raised in the NPWS letter, the silt fence is now proposed along the western edge of the proposed berm, which will be a few metres east of the fenceline.

The footprint of the proposed berm and silt fence will be entirely on existing built surfaces and disturbed ground. The northern end will be on a concrete road and an area of compacted hardcore (see Figure 5), and the southern end will be in an area consisting of stockpiles of building rubble (see Figure 2 in Section 3.1 of this report). None of these habitats are of any ecological value.

Existing built surfaces and building rubble will be cleared in advance of construction work, and reused for the construction of the berm. When the existing road surface has been removed, the silt fence will be put in place along the western boundary. In most cases the lower 200 –

300 mm of the membrane will be buried vertically underground, andconsidering that most material will consist of loose earth and rubble, it is expected that this will be relatively straightforward to install. It is highly unlikely that any tree roots will be present in these areas, because the potential root zones are outside the footprint of the development (Figure 4), and because tree roots are unlikely to be present in road foundations. However, if any significant roots are encountered, the silt fence will be laid over the root and held in place using sandbags, in order to avoid cutting the root. The installation of the silt fence will be overseen by the contractor's Ecological Clerk of Works. In summary, the installation of the silt fence is not considered to pose any risk to the woodland habitats within the SAC.

Figure 5: Location of the proposed berm and silt fence (Sept 2020)

6.2 Indirect effects – pollution of nearby habitats

Construction phase

The construction of the proposed development will involve a range of groundworks, notably the removal of existing building rubble and gravel, the excavation of underlying soils, the construction of a berm, and trenching for the installation of underground pipes to connect the pond with the distillery. These activities have potential to generate pollutants, including:

- Suspended silt or other sediments, which can reduce water quality in watercourses, and harm aquatic fauna;

- Concrete and cement, which are composed of highly alkaline, corrosive fine sediments that are very harmful for aquatic fauna;
- Hydrocarbons (oil, petrol, diesel, etc), solvents and other chemicals, which can be toxic to aquatic fauna.

The site slopes towards the Garvogue River, so it is possible that pollutants could reach the *Lough Gill* SAC via surface water, groundwater, land or air. It is noted that the SAC has been designated for the protection of a range of aquatic habitats (natural eutrophic lakes) and species (white-clawed crayfish, lamprey, salmon and otter). Pollution (from a range of sources) is listed as a threat to the conservation status of natural eutrophic lakes, lamprey (all species) and salmon. However, pollution is not listed as a threat to old sessile oak woodlands, alluvial forests, white-clawed crayfish or otter, so they would not be significantly affected.

A hypothetical impact assessment of potential pollution incidents is difficult, because any potential impacts would vary depending on: the type of pollutant, the quantity of material entering the river, the rate at which it would occur, and the time of year.It is expected that minor pollution incidents would dissipate before they reach the river, or that trace quantities of pollutant would be diluted to negligible concentrations before they could affect any aquatic fauna. However, in accordance with the precautionary principle (as stipulated in the legislation), it is possible that a large-scale pollution event could cause significant impacts on the conservation status of habitats or species withinthe SAC. Therefore, mitigation measures will be required during construction works in order to preventany pollution incidents.

Operational phase

In the event of a spillage or fire the pond may contain contaminants such as alcohol, ingredients, waste products, charred materials and / or fire-fighting foam. When the spill / fire has been controlled, a specialist waste contractor will be engaged to inspect the material present and advise on the waste management requirements. Contaminated waste would be removed by tanker and treated off-site at a specialist waste management facility. This will ensure that no contaminated material can reach the SAC, and thus will prevent any impacts on its qualifying interests.

As the pond will not be covered, it will accumulate rainwater over time. This will be harvested for use within the distillery, and will not be discharged to any nearby waterbodies.

In summary, there will be no risk of significant impacts on the SAC during the operation of the proposed development.

6.3 Other development nearby (potentialin-combinationeffects)

Three other approved developments were identified in the surrounding area: the Hazelwood Distillery and Visitor's Centre (planning reference 15296), an associated waste water treatment plan (18412), and the replacement of a derelict dwelling (20127). Natura Impact Statements (prepared by NM Ecology Ltd) were submitted for all three planning applications, and it was concluded that the developments would not have significant impacts on Natura 2000 sites, subject to the implementation of mitigation measures. Construction work for the Hazelwood Distillery and Visitor's Centre is ongoing, and the construction of the WWTP and replacement dwelling areexpected to commence construction in coming years.

If a precautionary approach is adopted, it is possible that multiple concurrent construction projects could lead to in-combination effects on water quality in the Garvogue River. Therefore, it will be necessary to implement appropriate mitigation measures during the construction of the proposed development in order to preventany pollution incidents.

7 Mitigation and monitoring

7.1 Pollution-prevention measures (construction phase)

The following mitigation measures have been designed to avoid or minimise any negative impacts on water quality in the Garvogue River by preventing fine sediments, concrete / cement, hydrocarbons or any other pollutants from reaching the watercourse. All are standard pollution control measures that are regularly used on construction sites in Ireland, and confidence in their success is high. They have been developed with reference to the following guidelines:

- *Guidelines on protection of fisheries during construction works in and adjacent to waters* (Inland Fisheries Ireland, 2016)
- *Pollution prevention guidelines: PPG5 - works and maintenance in or near water* (UK Environment Alliance, 2007)
- *Managing concrete wash waters on construction sites: good practice and temporary discharges to ground or to surface waters* (UK Environment Agency 2011).

The implementation and monitoring of all mitigation measures will be the responsibility of the site foreman. The contractor will be required to employ an Ecological Clerk of Works prior to the commencement of construction works, who will assist with the interpretation and implementation of the mitigation strategy. However, it will be the responsibility of the foreman to ensure that the strategy is implemented effectively. Liability for any pollution incidents will be assigned to the foreman and their construction company.

Suspended sediments

The term 'suspended sediments' refers to any silt, mud or other fine sediment that becomes dissolved in water. Water can be contaminated by suspended sediments (SS) from open earthworks and excavations (either from rainfall or groundwater seepage), from rainfall on soil/sediment stockpiles, or from the tyres / tracks of construction vehicles. In order to retain all contaminated waters within the boundary of the proposed development site, the following measures will be implemented:

- Due to the proximity of the proposed development site to the SAC boundary, the construction contractor must ensure that no pollutants can travel overland into the SAC. To achieve this, a silt fence will be installed along the western side of the proposed berm. The lower 200 – 300 mm of the membrane will be buried vertically underground, or if this is impeded by tree roots, it will be held in place using sandbags. The fence will be held up by support poles at intervals of 2 m. The silt fence will be maintained for the duration of works.
- Excavation works will be suspended if high intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period, or high winds).
- If any excavations need to be dewatered, the SS-contaminated water will be retained and treated within the boundary of the proposed development site. It will be collected and pumped into a settlement tank / pond (or similar feature), left undisturbed until sediments have settled, and then discharged via a buffered outflow to a soakaway in the east of the site (i.e. as far as possible from the river)
- Stockpiles of mud, sand or other fine sediments will be stored alongside the distillery building, i.e. as far as possible from the river. Stockpiles will be levelled, compacted and covered with thick plastic membranes in order to limit wind/rainwater erosion.
- Dust suppression measures may be required, as per Section 8 of the IFI guidelines. However, water will not be abstracted from the Garvogue River for dust suppression purposes, because some of the qualifying interests of the SAC – notably lamprey – have been recorded within a few metres of the river bank.

Concrete and cement

These products are highly toxic to fauna, particularly fish and other aquatic / marine species. It is expected that some pouring and/or mixing of concrete or cement will be required during construction works, so the following measures will be implemented in order to retain all cement-based materials within the boundaries of the proposed development site:

- Concrete pouring / mixing will only take place in dry weather conditions. It will be suspended if high-intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period or high winds);
- If any on-site mixing of concrete is required, it will be carried out adjacent to the distillery building, i.e. as far as possible from the Garvogue River. If any cement-based

products will be stored on site, they will be kept in a sheltered area within or adjacent to the distillery building, and will be covered (e.g. with a thick plastic membrane);

- Ready-mix lorries and larger plant will not be cleaned on-site; they will be taken to an appropriate off-site facility with capacity to treat contaminated wash waters;
- If any on-site cleaning of tools or concrete-batching plant is required, it will take place beside the distillery building. Wash waters will be discharged to an on-site soakaway area located as far as possible from the watercourse.

Hydrocarbons and chemicals

Hydrocarbons (oil, petrol, diesel, etc) and solvents are toxic to fauna. These chemicals can enter surface water or groundwater if they are accidentally spilled (e.g. during re-fuelling of machinery), or from leaking containers. In order to retain such materials within the boundaries of the proposed development site, the following measures will be applied throughout the construction works:

- Any fuel, oil or chemical containers will be kept alongside the distillery building, i.e. as far as possible from the river. These pollutants are hazardous and must be stored in a designated bunded area that has sufficient capacity to retain any spills;
- Any on-site re-fuelling will take place alongside the distillery building in a bunded / impermeable area. Immobile plant will be refuelled over drip-trays;
- While in operation, diesel pumps, generators or other similar equipment will be placed on drip trays to catch any leaks; and
- A spill kit will be kept on site. If any spills occur, appropriate measures will be taken to intercept cement, hydrocarbons or chemicals on-site before they can reach the river

8 Residual impacts

Table 3 provides a summary of all potential direct and indirect impacts on all qualifying interests of the *Lough Gill* SAC.

Table 3: Summary of potential impacts on the qualifying interests of the *Lough Gill* SAC

Qualifying interest	Potential direct effects	Potential indirect effects	Proposed mitigation measures	Residual effects
Natural eutrophic lakes	**No impact:** There will be no work within or adjacent to Lough Gill or the Garvogue River	**Risk of significant effects:** An accidental large-scale pollution event during construction works could cause a deterioration in water quality	A range of pollution-prevention measures are proposed for the construction phase, to avoid impacts from suspended sediments, concrete / cement, hydrocarbons and other chemicals	**No impact.**These measures will substantially reduce the likelihood and magnitude of pollution events, ensuring that there is no risk of significant negative impacts on the qualifying interests of the SAC
Sea lamprey Brook lamprey River lamprey Atlantic salmon	**No impact:** These species are exclusively aquatic, and there will be no work within or adjacent to Lough Gill or the Garvogue River	**Risk of significant effects:** An accidental large-scale pollution event during construction works could cause a deterioration in water quality, which could negatively affect this species		
Old sessile oak woods Alluvial forests	**No impact:** There will be no works within the SAC, no removal of trees, and no works within the potential root zone of trees	**No impact:** Pollution is not listed as a threat for these habitats	None required	**No impact**
White-clawed crayfish Otter	**No impact:** These species are aquatic, and there will be no work within or adjacent to Lough Gill or the Garvogue River	**No impact:** Pollution is not listed as a threat for these habitats	None required	**No impact**

9 Conclusion

The proposed mitigation measures have been selected to avoid or minimise the risk that pollutants could reach the Garvogue River in sufficient quantities to cause significant impacts upon habitats or species in the *Lough Gill* SAC. The site foreman will be responsible and liable for the implementation and monitoring of the proposed mitigation, assisted by an Ecological Clerk of Works.

The pollution-prevention measures willsubstantially reduce the likelihood and magnitude of pollution events, thus preventing a significant negative impact upon the conservation status of the qualifying interests of the SAC. As a result, we conclude that the proposed development will not cause any significant negative impacts upon the integrity of any Natura 2000 sites.

10 References

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Appendix A: Construction and Environmental Management Plan

Appendix B: Planning Application Documents

Proposed Sprinkler Water Retention Pond
Hazelwood Demesne
Calry
Co. Sligo

Preliminary Construction
and
Environmental Management
Plan

November 2020

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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 Construction.

This plan will be developed by the chosen Works Contractor 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, and 2019.
- 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.

In addition a Draft Waste Management Plan for the Operational Phase of the development is included which will be developed to ensure that all occupants and users of the development are provided with sufficient facilities to store, segregate and recycle domestic waste.

This Preliminary Waste and Environmental 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.*

It is proposed that during construction the Design Team for the project will monitor the Contractors Site Management Team to ensure that all aspects of the proposed WEMP are adhered to and in addition will provide specialist environmental monitoring, consultancy and auditing services as required 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 Waste and Environmental 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.

2 Description of Proposed Development

2.1 General

For the construction of a 1,262m2 sprinkler water and spillage run off retention pond (volume 3,428m3), to the west of previously approved whiskey distillery (Reg. Ref. 15/296), together with associated drainage, pump kiosk and ancillary site works and services at Hazelwood, Calry, Co. Sligo.

Ancillary site works and services include:

1. Stripping of topsoil and subsoil to an average depth of 3m over the area to be developed and using this material to form a 2.5m high earthwork berm along the western perimeter of the pond.

2. Installation of the following underground services in the form of Spillage / fire water run off drainage, approximately 250m of precast concrete pipelines varying in diameter from 225mm to 450mm, with concrete manholes.

2.2 Scope of Construction Management Plan

The range of works to which this Preliminary Construction & Environmental Management Plan will be integrated into during the design phase, construction phase and operation phase of the site over an approximate 12 to 18 month period, are summarised as follows:-

- Ground preparation works
- Site works including drainage
- Excavations on the site associated with drainage works
- Waste Management during the Construction Phase

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

2.3 Access to the Works and Traffic Management

Access to the site is via Hazelwood Avenue which is a lightly trafficked road which provides a dedicated access to Hazelwood Demense. It is a wide road with hard shoulders marked and pull in bays in some locations; it also has good sightlines and so it is suitable for construction vehicles.

There are a number of houses that also use Hazelwood Avenue for access however they are closer to Sligo Town adjoining the R286.

The access to the site is as per the vehicular access plan attached. The existing lane to the site affords ample access and turning opportunity. Parking for construction staff is also available in the adjacent industrial facility.

A more detailed Construction Traffic Management Plan shall be provided by the Main Contractor specific to the site and contain developed details of the measures as noted above and in particular take into account access and egress from the site of the works, parking & existing road users.

2.4 Construction Works

The construction works proposed are relatively minor in nature and can be summarised by the following:-

- Demolition of existing derelict building and removal from site.
- Construction of new two-storey building.
- Provision of underground drainage and services.

3 Waste Management Plan – Construction Phase

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

3.1 Waste Minimisation

While demolition works will be minimal, they will still occur. Careful planning of works, minimisation of waste and segregation of demolition materials are the most important factors.

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.

3.2 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 outlines in the waste management plans.

3.3 Construction 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.

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.*

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.

3.4 On-Site Waste Reuse and Recycling Management

As the site was already developed, there is no requirement for additional haul roads or working platforms that would usually be required on a new construction site. Therefore, there is very limited requirement for demolition material as temporary hardcore fill material.

Topsoil that is removed to facilitate the installation of soakaway will be stored adjacent to the works and reused as part of the landscaping works above the soakaway.

Natural stone recovered from the demolition will be retained for use in landscaping and wall building.

All other materials will be taken off site for recycling or disposal in a Licenced Landfill site.

3.5 Inert Wastes

The only waste materials that will be generated from the site excavation will be inert clays, limited timber waste materials, masonry blocks, and broken concrete. A very limited amount of steelwork may be generated and this will be recycled.

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

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

3.6 Hazardous Wastes

While it is not anticipated to encounter hazardous wastes on the site, should any be encountered the following procedure should be followed. The management of all hazardous waste arising (such as but not limited to asbestos and lead) if they occur, shall be coordinated in liaison with Health and Safety Management.

3.7 Contaminated Soil

While it is not anticipated that there will be any contaminated soil on the site due to the previous use, any localised contaminated soils are discovered in particular from historical spillage of hydrocarbons, 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.

4 Environmental Management Plan

This Environmental Management Plan (EMP) will be implemented to ensure that potential impacts relating to noise nuisance and disturbance, dust deposition nuisance, surface water and vibrational impacts are effectively 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 Environmental Risks - Construction

4.2.1 Noise and Vibration – proximity of neighbouring residences:

During the construction phase noise levels emanating from the proposed development will not exceed 55dBA between 0800 hours and 2200 hours, Monday to Saturday inclusive and will not exceed 45dBA (15 minute Leq) at any other time. These limits will be incorporated in contractor's method statements. This will include restrictions on working times, type and condition of equipment used, timing of deliveries, etc. It is considered that vibration is not a significant risk due to the isolation of the site from neighbouring properties, and the nature of the subsoil.

4.2.2 Nuisance caused by dust emissions:

There is minimal risk of causing nuisance to neighbouring properties by dust arising from construction activities. A monitoring regime will be put in place to deal with this issue, and good construction practices such as road sweeping/wheel washing, damping of surfaces, etc. included in contractor's method statements. Delivery trucks will be covered as appropriate to ensure no dust emissions along the public roadway.

4.2.3 Nuisance caused by odour or smoke:

There is no risk of causing nuisance to neighbouring properties by odours or smoke arising from construction activities. No on-site burning of rubbish or surplus materials will be permitted and all construction machinery will be required to be fully serviced to reduce exhaust smoke emission.

4.2.4 Impact of traffic - deliveries and removal of material:

There will be an increase in traffic due to materials being moved on and off site, but this will not have a significant effect on the main road system, which is an oversized local road designed for HGV traffic connecting Regional road R286.

The movement of bulk materials has mainly been eliminated by designing the earthworks so that all excavated materials will be re-used on site for the berm / landscaping.

There is adequate space on site to provide parking for all vehicles involved in the development, and this will be included in the site compound facility.

4.2.5 Hazardous Materials –storage:

Construction of the development will involve the use of relatively small volumes of potentially hazardous materials, such as surface coatings, solvent-based adhesives, etc. These must be stored and handled in accordance with the recommendations of the relevant MSDS sheets.

4.2.6 Hazardous Materials – possible contact:

The possibility of contact with the above materials, and the preventative and first aid measures required, will be addressed in the Construction Health & Safety Plan compiled by the Project Supervisor Construction Stage.

4.2.7 Containment – spillage from oil tanks:

There is a risk of leakage or spillage of oil from storage tanks, machinery, or during filling operations. All oil storage tanks will be double-skinned and be located in a contained area, and the contractors will be required to ensure that all machinery is in good condition and will not leak oil to the ground. Plant should be refuelled directly from road tankers to minimise the amount of fuel stored on site.

4.2.8 Containment – potentially turbid surface water:

The possibility of small volumes of turbid run-off from excavated surfaces discharging over ground to the west of the site is seen as an environmental risk. This can be controlled using a silt fence along the western boundary to collect run off away from the area and by allowing the excavated pond to settle out the silt from water that can be collected in it, with the inlet /outlet towards the top level during the construction phase, and removed eliminated when the earthworks are complete. As described elsewhere the completed pond will rely on managed pumping for discharge to eliminate accidental run off of collected liquids.

4.2.9 Containment – concrete truck washings:

There is a risk of high-pH washings from concrete delivery trucks entering the surface water drainage. A dedicated soak-pit will be provided for these washings at an appropriate location adjacent to the excavated pond away from watercourses and all drivers will be instructed to use this facility.

4.2.10 Disposal of foul water from compound:

All foul water from the contractor's compound, canteen, toilet facilities, etc. will be gathered for collection on a regular basis by a licensed disposal contractor.

4.2.11 Disposal of demolition waste and surplus materials:

It is intended to use all excavated soil on site for construction of the berms and landscaping. It is not envisaged that soil will be removed from site.

In general, the design does not involve demolition, but there will still be a limited amount of waste and surplus materials to be dealt with. These will be segregated and stored in the contractor's compound for collection by a licensed waste operator.

Waste management proposals are contained in a separate document addressing this issue.

4.2.12 Litter – risk of airborne materials littering the public road or neighbouring properties.

There is a risk that lighter materials such as packaging, insulation, etc. may be blown off site into the adjoining forestry, public roads and/or farmland, the site is relatively enclosed which should mitigate this risk. Good housekeeping will be required, with covering of skips, netting around compounds, etc. The contractor will monitor this on an ongoing basis and, where necessary, provide resources to clean up any litter occurring.

4.3 General Site Works – Construction Phase

4.3.1 Construction Phase Operating Hours

The proposed operating hours for the project are proposed to be as follows:-

08:00hrs – 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 CEMP.

4.3.2 Site Clearance and Earthworks

Perimeter Fencing

The first task in the construction phase will be to erect a fence along the perimeter boundary of the development. This will restrict unauthorised access to the work area.

Site Investigation

Following fencing, a more detailed site investigation will be undertaken to establish ground conditions and suitability of material for filling - preliminary geotechnical investigations were by trial pit only.

Site Establishment

the selected contractors will set up their temporary construction facilities. These will include:

Site offices, canteen and toilet / changing facilities c/w temporary water supplies and wastewater treatment unit.

Secure compound and containers for storage of materials and plant.

Temporary vehicle parking areas.

Contained area for machinery refuelling and construction chemical storage.

Contained area for washing out of concrete and mortar trucks.

Wheel-washing facilities for vehicles leaving the site.

4.3.3 Infrastructural Works and Site Services

Site Services

The following services will be installed on the prepared site:

Surface Water drainage: This will be a network of underground pipelines and manholes discharging to the existing culvert under the R392 via the attenuation pond, which will be fitted with flow control devices to ensure no increase in peak flows, and an oil interceptor to remove any traces of oil washed off road surfaces. This system will also take the flows from the existing land drains and any others which may be required following re-grading.

Firewater drainage: This will be a separate system of underground pipelines and manholes linking the internal drains of the warehouses to the retention pond, which will be lined to ensure no contamination of groundwater.

Sprinkler / Hydrant: An underground pressurised water main system will feed the sprinklers in the individual warehouses and the general site hydrants. This will be fed from the water storage tank by 2no. diesel pumps located in the Sprinkler Pump House.

Service Water: A separate underground main will be taken off the mains water connection and provide a water supply for hose reels distributed around the warehouse area. This will also supply the facilities building, the purified water treatment system and the firewater storage tank.

Electrical Systems: Power and communications cabling will generally be run underground in a system of ducts and drawpits. Power supply will be taken from an incoming 10kV supply and stepped down to 380V 3-phase for distribution through the site.

For further details on the above systems, see the accompanying drawings.

The basic infrastructure will be constructed at an early stage and the branch lines will be extended to various areas of the site as warehouse construction progresses.

The installation of these services involves extensive trenching and the generation of surplus excavated material. The volume of this material has been calculated and it will be used within the site for re-grading around the individual warehouses as development progresses.

4.3.4 Temporary Works/Tree Protection Measures

There are extensive areas of trees located at the Hazelwood Demense. While most works associated with the dwelling are removed from these, some works relating to services and soakaway will be in areas that may impact trees.

However, in the context of the overall site it is minimal. At the outset of the proposed works, the locations of the works will be marked out and tree protection fences will be put in place (temporary Harris fences on self-supporting pads). A qualified Arborist should be involved with the setup of the fences to ensure that root zones of trees are also protected. These fences will prevent construction equipment operating beyond the fence line and will provide protection to the trees adjacent to the works.

4.3.5 Excavations

Proposed excavations are for the 1262sqm pond trenches for services and for limited foundations, manholes and a pumps kiosk.

While topsoil will be reused at its location on site, inert clays and concrete and tarmacadam will be disposed of offsite in a licenced landfill as mixed Construction & Demolition waste.

Stripping, Berm Formation and Earthworks

Preliminary geotechnical investigation indicates that the subsoil layer directly under the topsoil is suitable for berm construction. It is proposed to remove this layer, and the topsoil, in its entirety and use the material to form the 2.5m high berm on the western boundary together with imported gabion cages.

The shaping of the pond during the construction phase will act as a stilling pond for the removal of silt from surface water run-off while excavation is ongoing. A silt fence will be provided along the western boundary.

The cut and fill involved in the above works is in balance and there will be no need to either import material or cart surplus off site. With the except of the limited use of gabion cages to reduce the footprint of the berm and ensure adequate step off from the SAC. Measures will be in place to contain dust and/or to ensure that mud and other debris are kept off the public roadways.

4.3.6 Prevention of Pollution of Watercourses

The Garravogue River is in the vicinity of the site. It is proposed to create an aquatic buffer zone and silt fence as per attached details and ecologist report.

This is sufficient separation distance as the terrain is relatively flat so not to have any construction works impact on the river itself. In addition, both are located outside the SAC Boundary to the river.

4.3.7 Imported materials

These will include

- Crushed limestone aggregates for pipe laying, filling gabion baskets, and as a sub-layer for the pond liner. This material will be similar to the existing bedrock and will have no effect on the pH or characteristics of the groundwater.
- Concrete drainage pipes. These will be cured at the works and may discharge water with a slightly elevated pH in the short-term. Note that these flows will be captured by the pond, and will be checked and pumped to the plant effluent system for treatment. There is no direct surface water discharge to the SAC.
- Readymix concrete for manhole construction and miscellaneous small structures. Similar to the above, there may be small quantities of water with elevated pH, but these will be treated before discharge.
- Steel mesh reinforcement. This will be embedded in the concrete so will not release any contaminants.
- High-Density Polyethylene (HDPE) pond lining materials. This material is inert and is joined by heat-welding equipment, i.e. no adhesives or bonding chemicals will be used.

4.3.8 Construction of Structures

The construction works proposed are minimal and can be summarised by the following:-

- construction of a 1,262m2 sprinkler water and spillage run off retention pond (volume 3,428m3), to the west of previously approved whiskey distillery (Reg. Ref. 15/296), together with associated drainage, pump kiosk and ancillary site works and services

4.3.9 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) 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. 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.

4.3.10 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.

4.4 Dust Management Programme

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

4.4.1 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.

4.4.2 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 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).

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

5 Liaison with Local Community & Traders

The site is isolated and there should be no cause for nuisance or negative impact. However, 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.
- Should they arise, ensure 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

Lee Connolly
SSA Architects

PLANNING FI DRAWING SCHEDULE

Project	Hazelwood Demesne – Retention Pond
Client	Hazelwood Demesne Ltd
Job No.	14034
Sheet No.	1

SSA ARCHITECTS

42 Haddington Road, Dublin 4
T: 01 668 7939 E: info@ssa.ie

REFERENCE	DOCUMENT / DRAWING NAME	SCALE
14034-PL-301	Site Location Map [1]	1: 10,560
14034-PL-302	Site Location Map [2]	1:2500
14034-PL-303	Site Layout Plan	1:500
14034-PL-304	Contiguous Elevation of Pond	As Shown
14034-PL-305	Proposed Pump Kiosk	As Shown
14034-PL-007	Silt Fence	As Shown
D-AR-003	Firewater Retention Pond Part Site Plan	1:250
D-AR-004	Firewater Retention Pond Plan of Pond	1:200
D-AR-005	Firewater Retention Pond Sections Through Pond	1:150
D-AR-006	Firewater Retention Pond Proposed Drainage	As Shown

Directors: Shane Santry B.A. (Hons) Arch. Dip. Arch. MRIAI. Dip. Arb. FCIArb.
Dr. S. FitzGerald. Lee Connolly MRIAI
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NOTES
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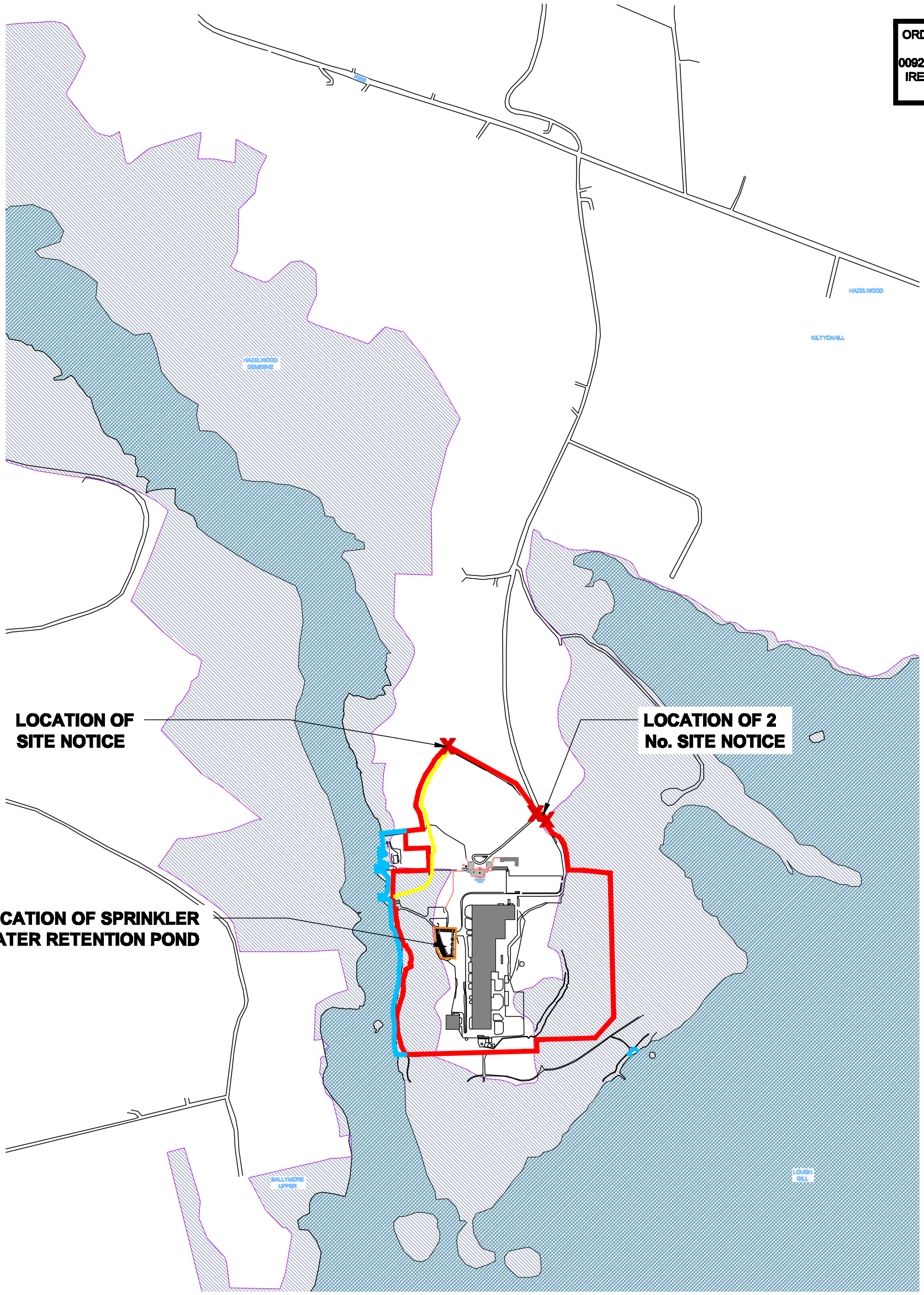
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED,

LEGEND:

- SITE BOUNDARY
- ADJOINING OWNED LAND
- WAYLEAVES
- SITE NOTICE LOCATIONS X
- SPECIAL AREA OF CONSERVATION
- AREA SUBJECT TO APPLICATION



SITE LOCATION MAP [1]
SCALE 1:10,560

R	Record
C	Construction
T	Tender
PL	Planning
A	Approval
PR	Preliminary
Stage	Description

Rev.	Revision	Date	By

Scale : 1:10,560
Date : APRIL 20'
Drawn : KM

SITE LOCATION MAP [1]

HAZELWOOD DEMESNE

WATER RETENTION POND
HAZELWOOD DEMESNE
CO.SLIGO

Rev
Project No. 14034
Stage PL
Drawing No. 301

SSA ARCHITECTS
42 haddington road dublin 4
Ph: 01 668 7939 Fax: 01 668 9329
belvedere newtown waterford 051 873161

A3

LEGEND:

- SITE BOUNDARY
- ADJOINING OWNED LAND
- WAYLEAVES
- SITE NOTICE LOCATIONS
- SPECIAL AREA OF CONSERVATION
- SPRINKLER RETENTION POND

LOCATION OF SITE NOTICES

LOCATION OF SITE NOTICE

LOCATION OF SPRINKLER WATER RETENTION POND

SITE LOCATION MAP [2]
SCALE 1:2,500

NOTES
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Stage	Description
R	Record
C	Construction
T	Tender
PL	Planning
A	Approval
PR	Preliminary

Rev.mark	Revision	Date	By

Scale : 1:2500
Date : APRIL 22'
Drawn : KM
Checked :

SITE LOCATION MAP [2]

HAZELWOOD DEMESNE

WATER RETENTION POND
HAZELWOOD DEMESNE
CO. SLIGO

Rev
Project No. 1483A
Dwg No. PL 302

SSA ARCHITECTS
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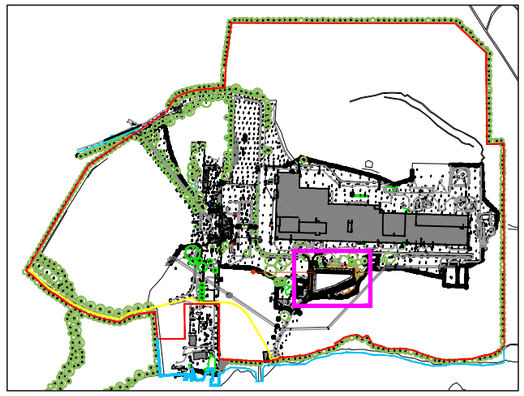

KEY PLAN
SCALE 1:10000

DISTILLERY BUILDING

LEGEND:

SPECIAL AREA OF CONSERVATION
SPRINKLER RETENTION POND

LOCATION OF PUMP KIOSK

LOCATION OF SPRINKLER WATER RETENTION POND

45250
44980
66210
56695
16320
43435
32330
8.50
6000
33335
39110
PROPOSED BERM

Harris fencing around tanks

Remains of tanks, full of rubble

SITE LAYOUT PLAN
SCALE 1:500

NOTES
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Stage	Description
R	Record
C	Construction
T	Tender
PL	Planning
A	Approval
PR	Preliminary

Rev.mark	Revision	Date	By

Scale : 1:500
Date : APRIL 25
Drawn : MM
Checked :

SITE LAYOUT PLAN

WATER RETENTION POND
HAZELWOOD DEMESNE
CO. SLIGO

HAZELWOOD DEMESNE

Project No. 14034
Drawing No. PL 303
Rev

SSA ARCHITECTS
42 haddington road dublin 4
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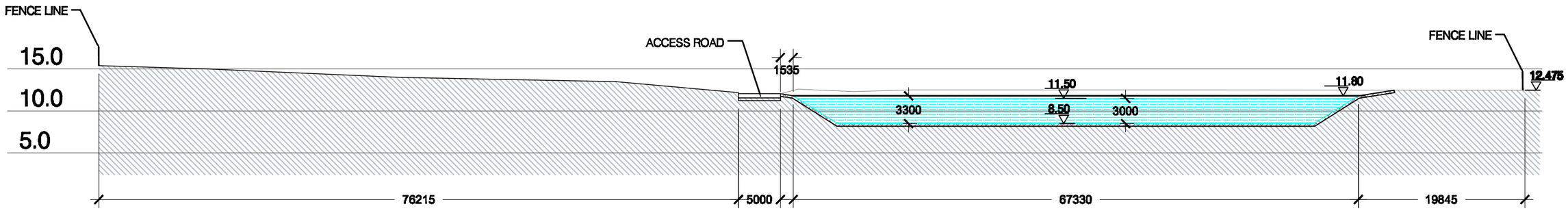
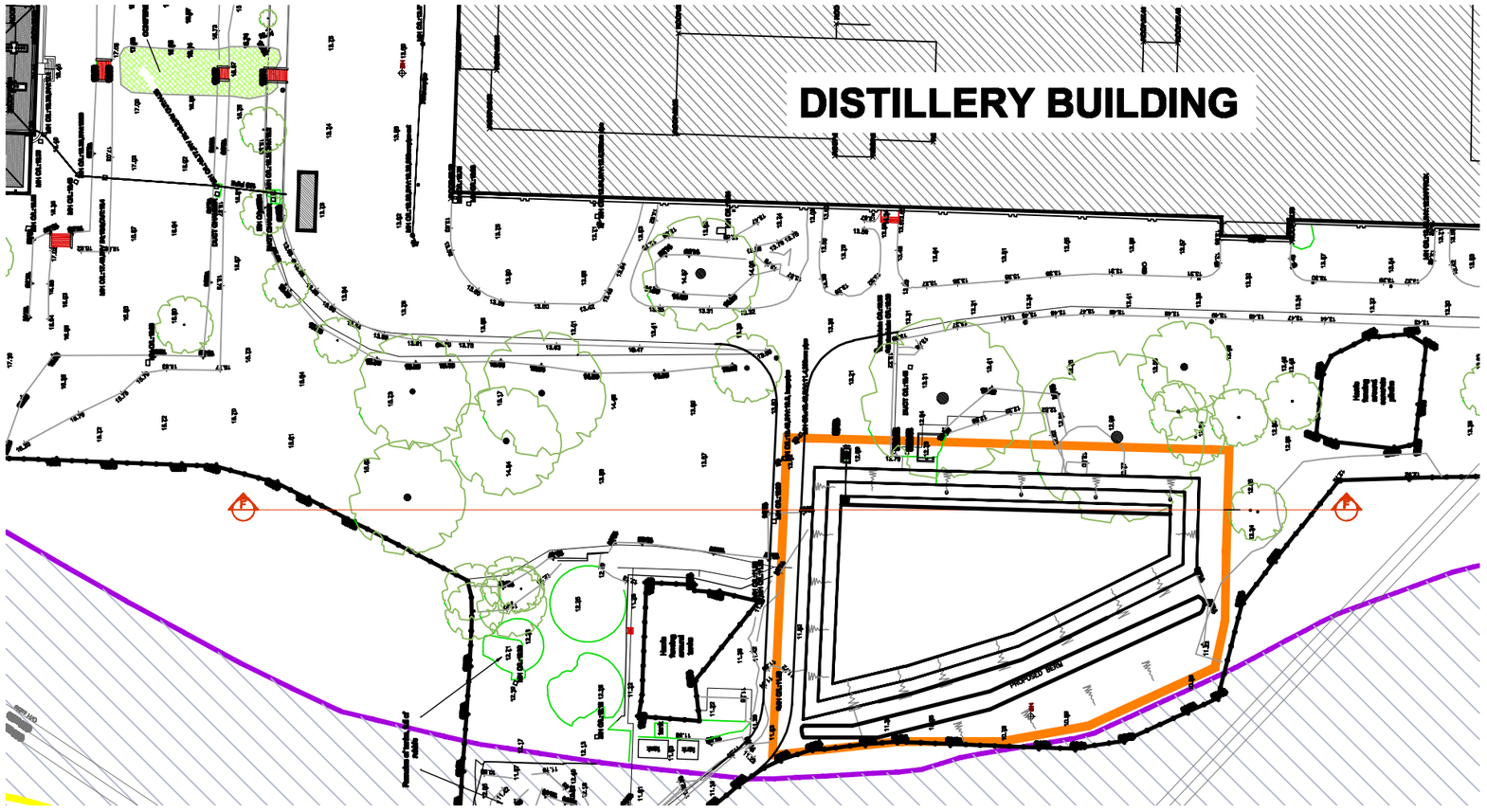


CONTIGUOUS ELEVATION OF POND
SCALE 1:500



KEY PLAN
SCALE 1:1000

NOTES
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Stage	Description
R	Record
C	Construction
T	Tender
PL	Planning
A	Approval
PR	Preliminary

Rev.mark	Revision	Date	By

Scale : AS SHOWN
Date : APRIL 25'
Drawn : NM
Checked :

CONTIGUOUS ELEVATION OF POND

WATER RETENTION POND
HAZELWOOD DEMESNE
CO. SLIGO

HAZELWOOD DEMESNE

Project No. 1483.4
Drawing No. PL 304
Rev

SSA ARCHITECTS
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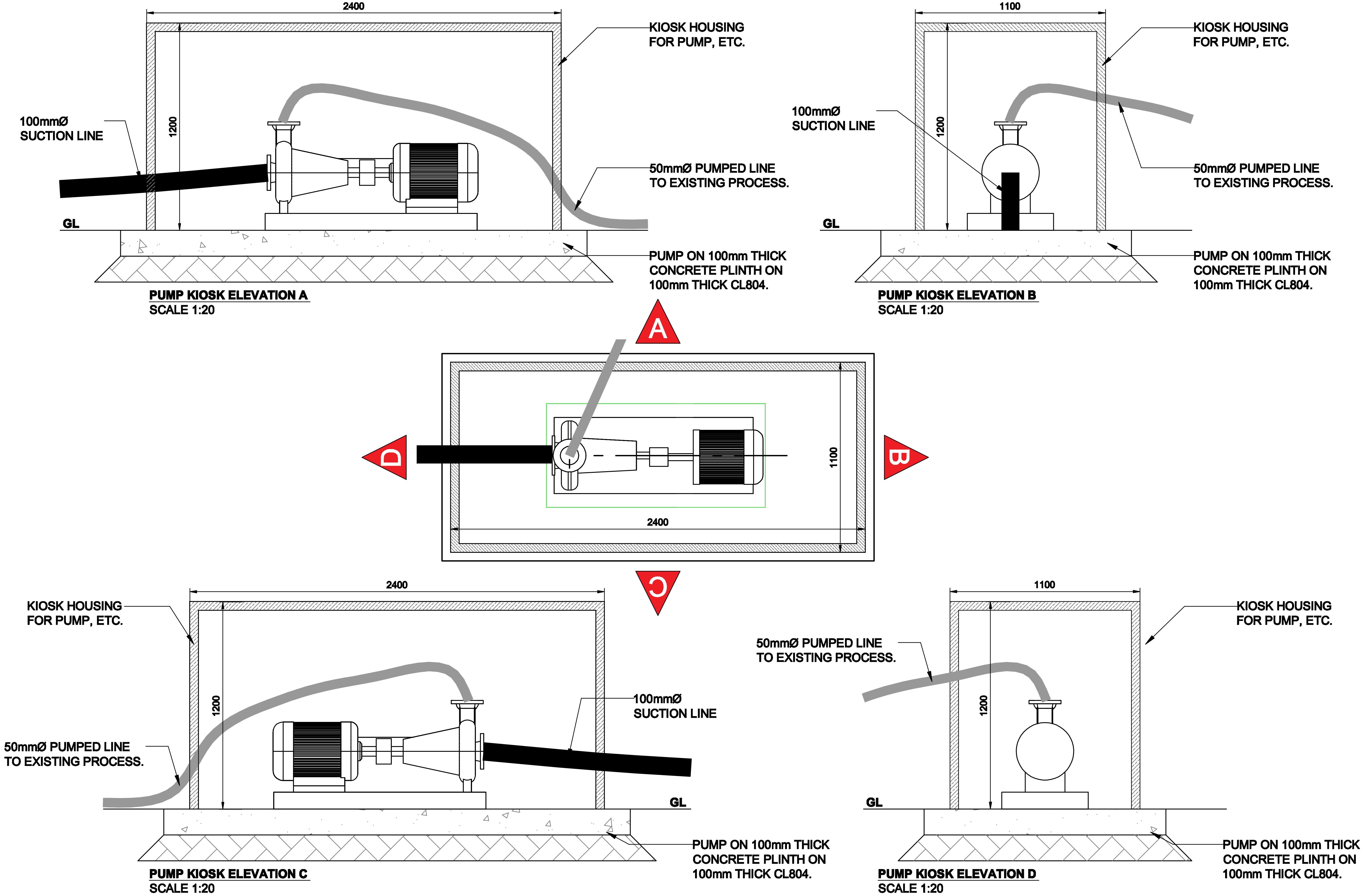

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Stage	Description
R	Record
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T	Tender
PL	Planning
A	Approval
PR	Preliminary

Rev.mark	Revision	Date	By

Scale : AS SHOWN
Date : APRIL 25'
Drawn : KM
Checked :

PROPOSED PUMP KIOSK

HAZELWOOD DEMESNE

WATER RETENTION POND
HAZELWOOD DEMESNE
CO. SLIGO

Rev
Project No. 14034
Stage PL
Drawing No. 305

SSA ARCHITECTS
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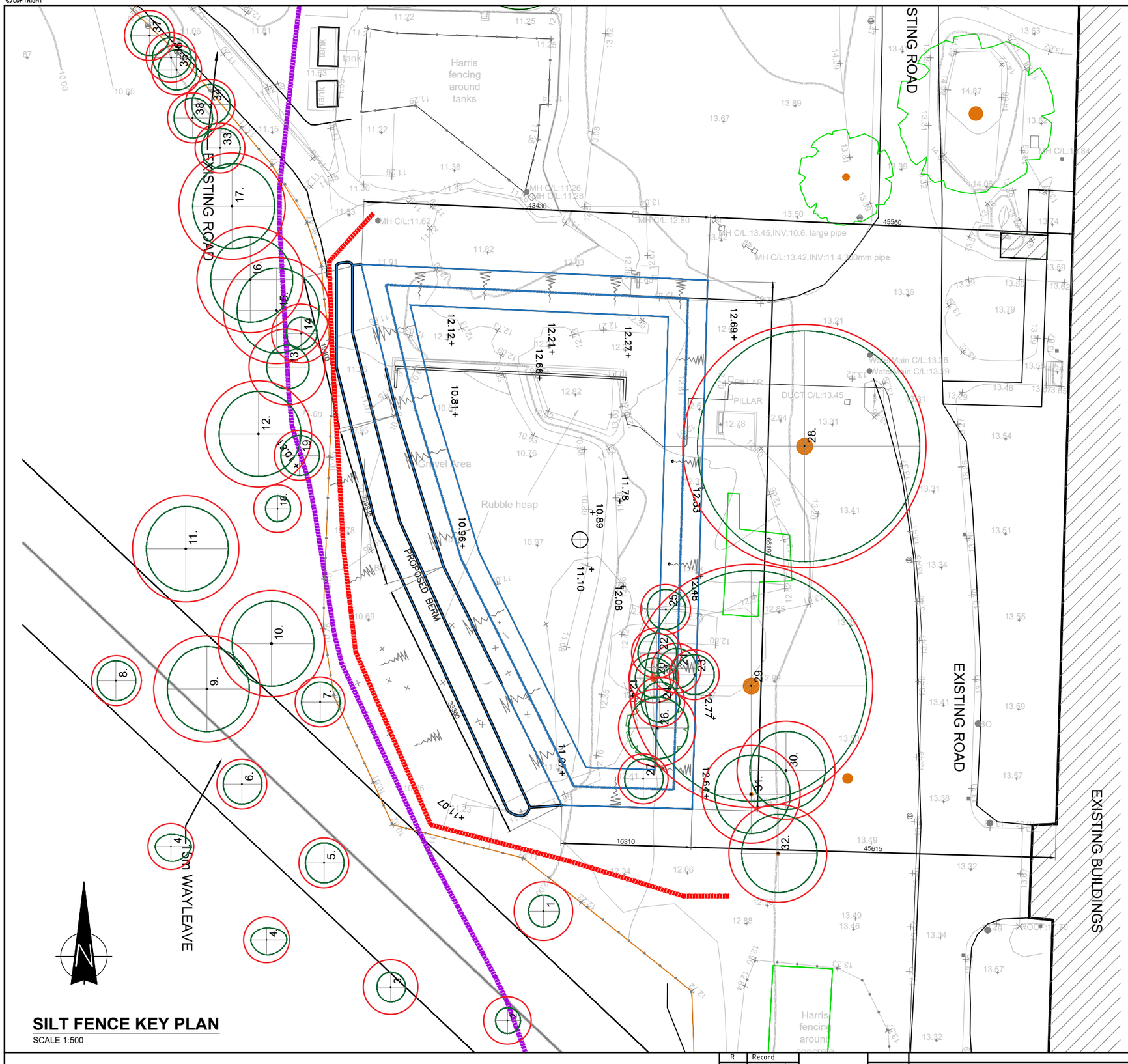
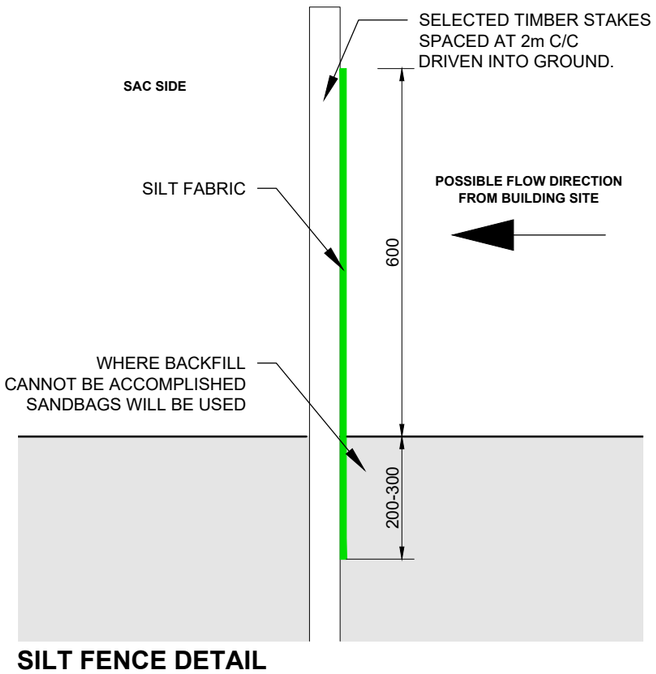


SILT FENCE KEY PLAN

SCALE 1:500

LEGEND:

- SAC BOUNDARY
- EXISTING BOUNDARY FENCE
- TEMPORARY SILT FENCE



SILT FENCE DETAIL

SCALE 1:10

NOTES
FIGURED DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING.DO NOT SCALE
ALL DIMENSIONS ARE TO BE CHECKED ON SITE BEFORE ANY WORK IS PUT IN HAND.
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED,

Stage	Description
R	Record
C	Construction
T	Tender
PL	Planning
A	Approval
PR	Preliminary

Rev.mark	Revision	Date	By

Scale : AS SHOWN
Date : NOV '20
Drawn : SN
Checked :

SILT FENCE

HAZELWOOD DEMESNE

PROPOSED BUILDING
HAZELWOOD DEMESNE
CO. SLIGO

Rev

Project No. 14034

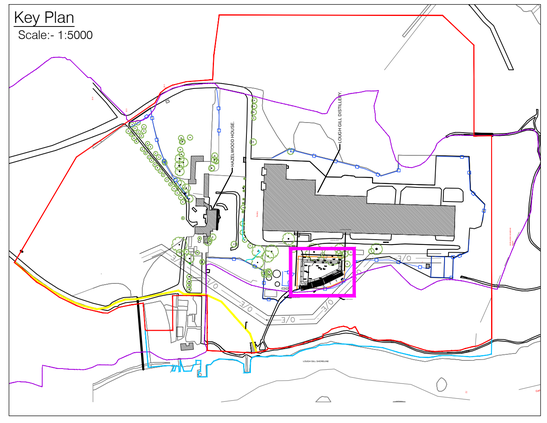
Stage PL

Drawing No. 007

SSA ARCHITECTS
42 haddington road dublin 4
Ph: 01 668 7939
belvedere newtown waterford 051 873181

01 Part Site Plan
AR-003 Scale:- 1:250

Key Plan
Scale:- 1:5000



GENERAL NOTES: A1

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2. This drawing to be read in conjunction with all relevant engineers drawings, Project Specification and the National Structural Concrete Specification for Building Construction.
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5. If there is any discrepancy between drawings then Allen Barber Engineering Consultants are to be informed immediately.

NOTES:-

LEGEND:-

- WAYLEAVE
- SAC BOUNDARY
- SITE BOUNDARY
- SPRINKLER RETENTION POND
- O/E — O/E — O/E — OVERHEAD CABLES
- FENCELINE

Revisions	Issue	Date	By
Issued for Planning	A	23/04/2020	BG

Allen Barber
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Cork.
tel 021 4319291
e-mail rob@allenbarber.ie

Job
Lough Gill.pmg

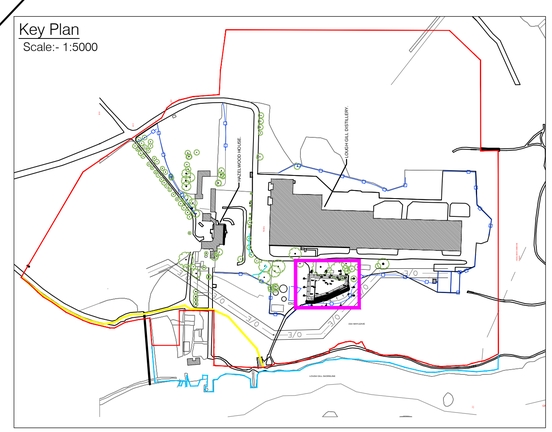
LOUGH GILL, Co. SLIGO

Drawing
FIREWATER RETENTION POND
PART SITE PLAN

Job No.	DRG No.		Issue
1949	D-AR-003		A
Scale	Date	Drawn	Checked
As Stated	April 2020	BG	RJB

01 AR-004 Part Site Plan
Scale:- 1:200

Key Plan
Scale:- 1:5000



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NOTES:-

LEGEND:-

WAYLEAVE
SITE BOUNDARY
OVERHEAD CABLES
FENCELINE

Issued for Planning	A	23/04/2020	BG
Revisions	Issue	Date	By

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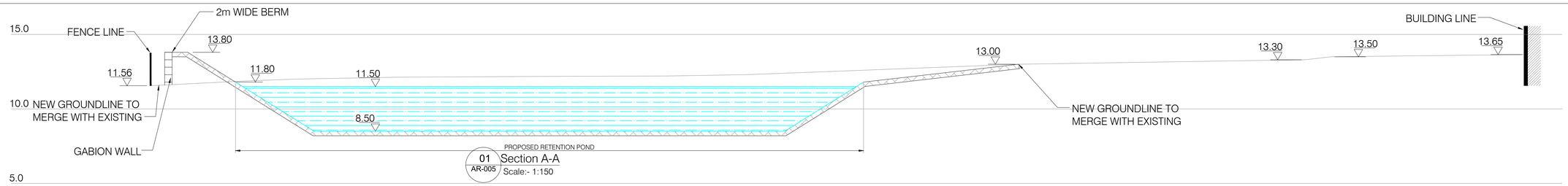
Job
Lough Gill.png

LOUGH GILL, Co. SLIGO

Drawing
FIREWATER RETENTION POND
PLAN OF POND

Job No.	DRG No.		Issue
1949	D-AR-004		A
Scale	Date	Drawn	Checked
As Stated	April 2020	BG	RJB



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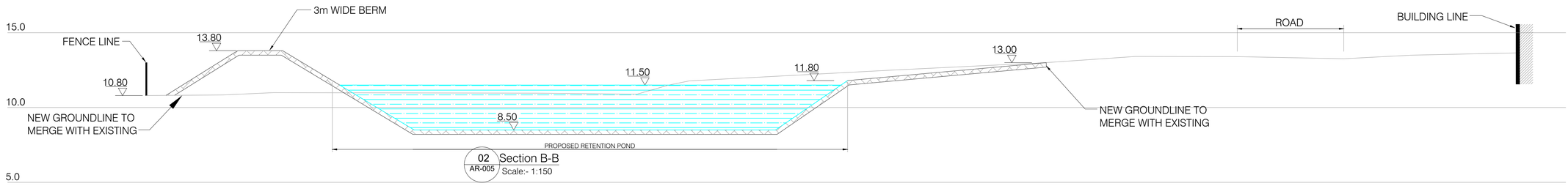
Scale:- 1:150



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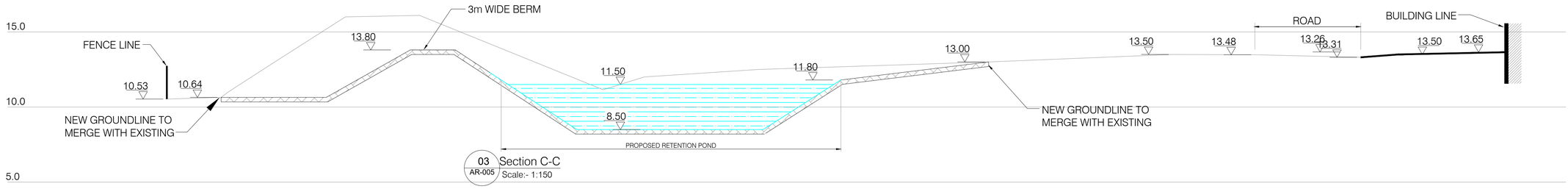

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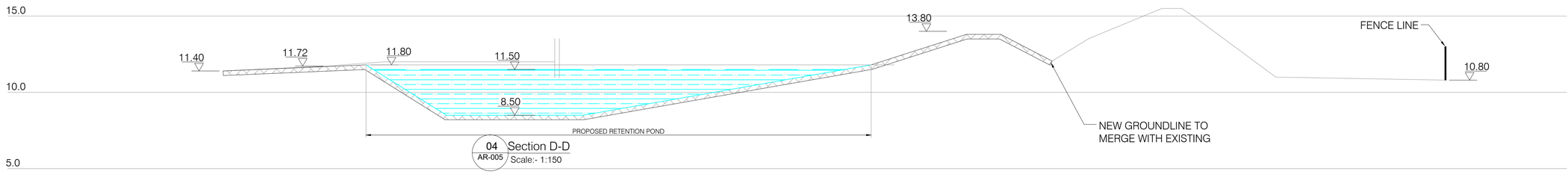

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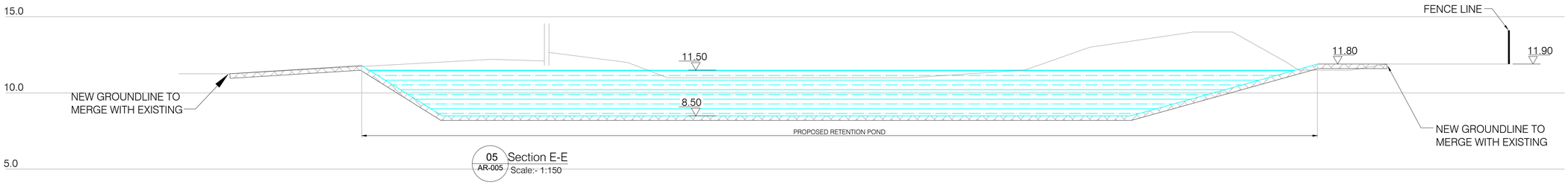

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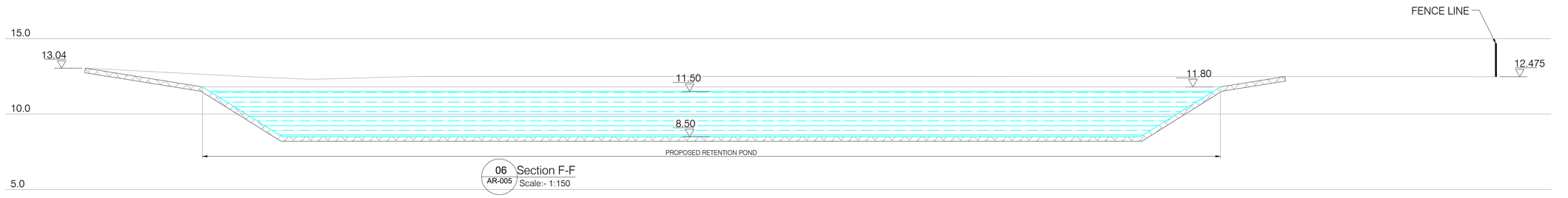
Scale:- 1:150



06 AR-005 Section F-F
Scale:- 1:150

GENERAL NOTES: A1

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NOTES:-

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Revisions	Issue	Date	By

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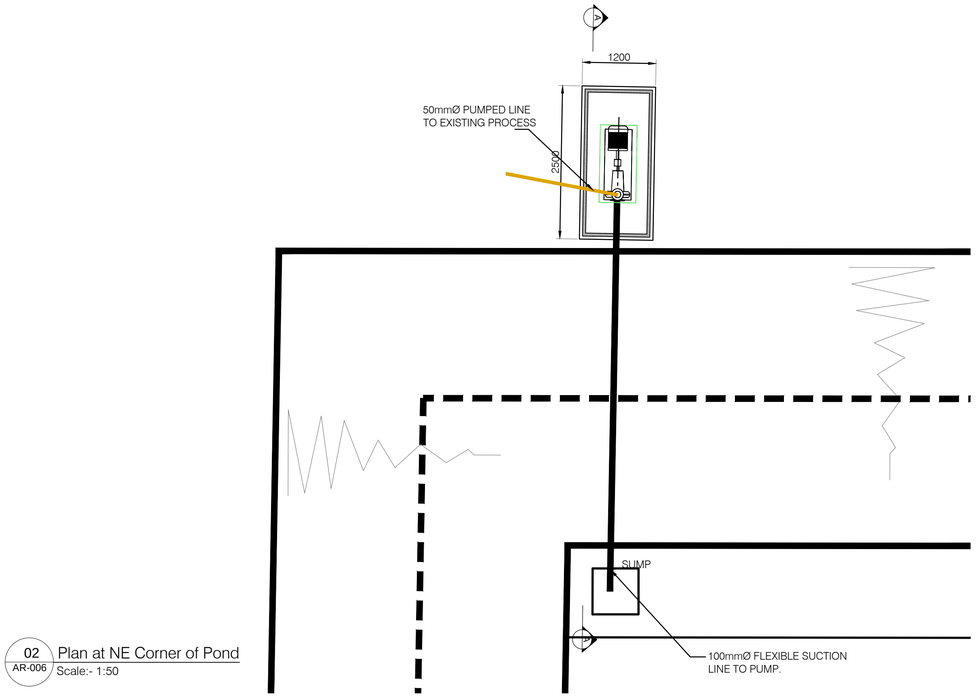
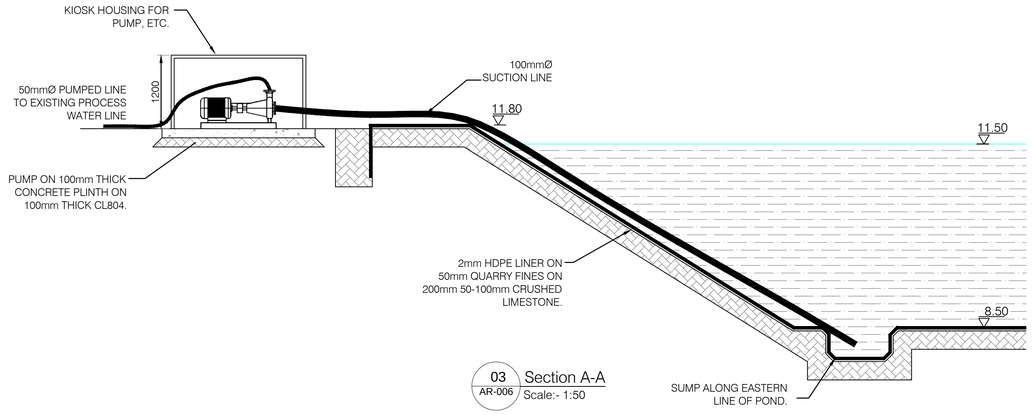
Job
LOUGH GILL, Co. SLIGO

Drawing
FIREWATER RETENTION POND
SECTIONS THROUGH POND

Job No.	DRG No.		Issue
1949	D-AR-005		A
Scale	Date	Drawn	Checked
As Stated	April 2020	BG	RJB



02 AR-006 Plan at NE Corner of Pond
Scale:- 1:50



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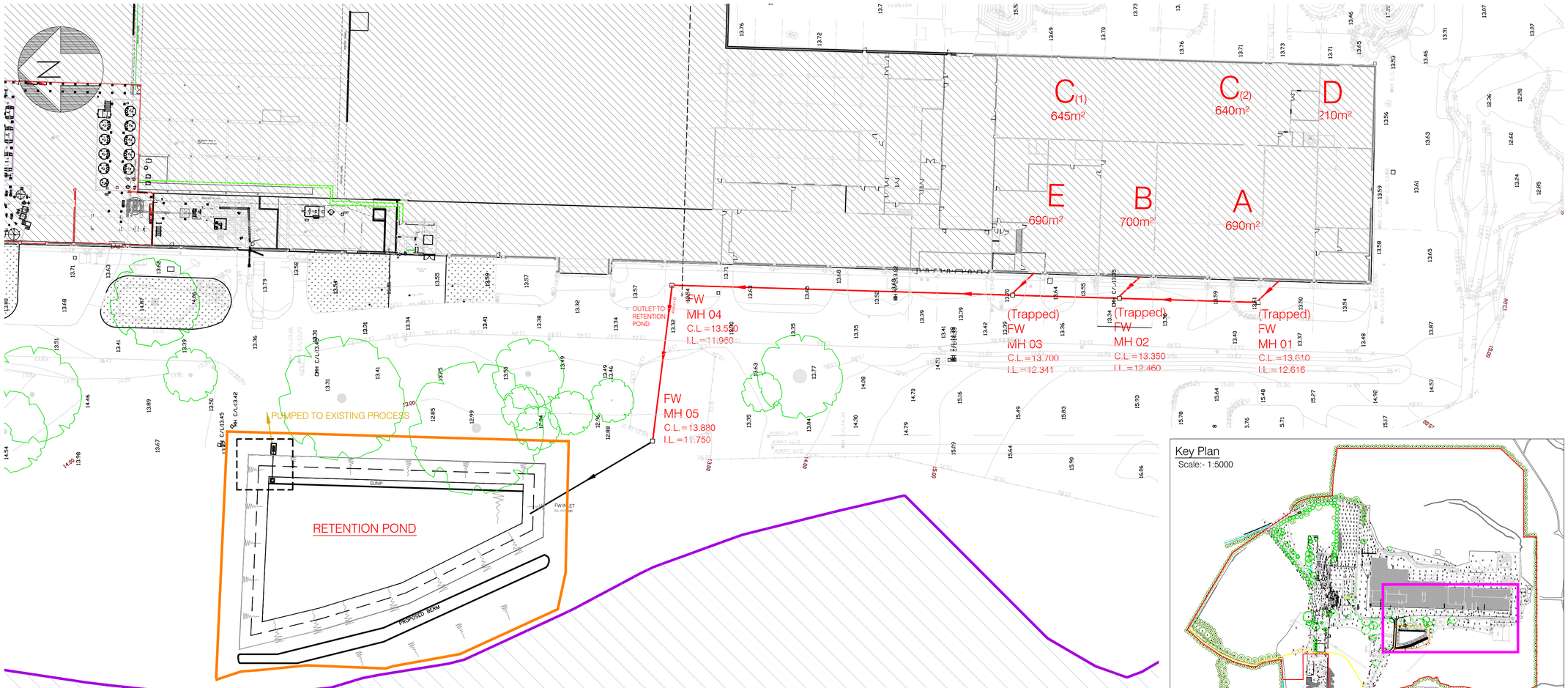
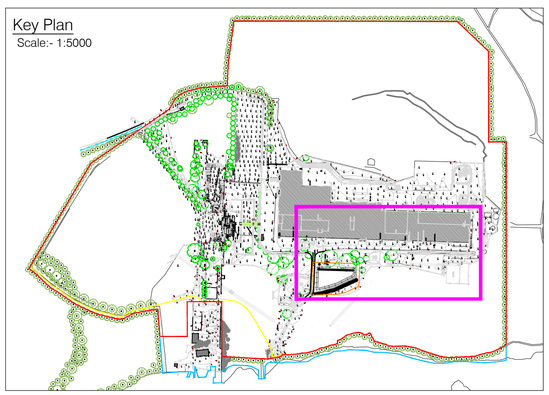
Scale:- 1:50



01 AR-006 Retention Pond - Proposed Drainage
Scale:- 1:500

Key Plan
Scale:- 1:5000



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Revisions	Issue	Date	By

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Togher,
Cork.
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e-mail rob@allenbarber.ie

Job
Lough Gill.png
LOUGH GILL, Co. SLIGO

Drawing
FIREWATER RETENTION POND
PROPOSED DRAINAGE

Job No.	DRG No.	Issue
1949	D-AR-006	A

Scale	Date	Drawn	Checked
As Stated	April 2020	BG	RJB

SSA ARCHITECTS

Sligo County Council
Planning Department
City Hall
Quay Street
Sligo

23rd November 2020

Re: Planning Application at Hazelwood Demesne, Calry, Sligo
Construction of a 1,262m^2 sprinkler water and spillage run off retention pond (volume 3,428m^3), to the west of previously approved whiskey distillery (reg. ref. 15/296), together with associated drainage, pump kiosk and ancillary site works and services at Hazelwood, Calry, Co. Sligo.
Reg. Ref. PL20/180

Dear Sir / Madam;

Further to your request for further information of the 22nd July 2020, we wish to respond as follows.

1. In relation to the queries raised by the National Parks and Wildlife Services,

   (a) The imported materials will include:

   Crushed limestone aggregates for pipe laying, filling gabion baskets, and as a sub-layer for the pond liner. This material will be similar to the existing bedrock and will have no effect on the pH or characteristics of the groundwater.

   Concrete drainage pipes. These will be cured at the works and may discharge water with a slightly elevated pH in the short-term. Note that these flows will be captured by the pond, and will be checked and pumped to the plant effluent system for treatment. There is no direct surface water discharge to the SAC.

   It is proposed to use ready-mix concrete for manhole construction and miscellaneous small structures. Similar to the above, there may be small quantities of water with elevated pH, but these will be treated before discharge.

   It is necessary to use steel mesh reinforcement. This will be embedded in the concrete so will not release any contaminants.

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Dr. S. FitzGerald. Lee Connolly MRIAI
Associates: Alan Davis BSc. Arch. Tech. **Kieran Murphy** BSc. Arch. Tech.

42 Haddington Road, Dublin 4, D04 V226, IRELAND
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High-Density Polyethylene (HDPE) pond lining materials. This material is inert and is joined by heat-welding equipment, i.e. no adhesives or bonding chemicals will be used.

(b) The berm will be constructed as shown on ht e JOD section drawing 1949-D-AR-005, using site-won materials, supplemented by gabion baskets where necessary. It will allow all surplus excavated materials to be kept on site and remove the need to dispose of them elsewhere. The berm will be constructed on the side of the pond facing the SAC and will screen the area from the public walkway side. The plant side will be kept open for operation and maintenance access.

(c) (d) (e) The risk of contaminants being released to the SAC either through an accidental spill or a fire event is recognised and has been assessed. Although the distillery is not an EPA-regulated site, the pond has been designed in accordance with the Agency's published guidance document 'EPA Guidance on Retention Requirements for Firewater Run-off' issued in 2018. This document specifies calculated retention volumes, including stored product, rainwater over the period of a storm with a specified return period, and fire-fighting water. All these have been included in the pond volume calculations. As outlined in the relevant drawings the pond is afforded an impermeable layer to prevent its contents leaching into the ground beneath.

(f) As above an impermeable pond liner will be installed on the surface of the pond to prevent any leakage or leaching of potential pollutants into the groundwater. Note that the pond will normally be empty and any contaminated water that may be held will be tested and sent for treatment as quickly as possible, i.e. there will be no long-term storage. The liner will be constructed using 2mm HDPE sheeting, which is the industry standard for this type of installation. The lining material will come with factory certification, and rigorous testing, both on-site and in a laboratory, will ensure that all welds and joints are strong and watertight. The main welding procedure will be double wedge welding, where the material is joined by heating to melting point and applying pressure; the double seam leaves a contained void between the seams that can be air tested. Extrusion welding will also be used for smaller runs; in this case molten HDPE is applied to the joint, with a copper wire included that can be tested electrically on completion. Destructive tests of sample welds are carried out on site, and on completion coupons are taken from the site welds to be tested under laboratory conditions. The liner will be underlain by a conductive material, loose-laid and lapped. A small charge can be applied to this material, and the liner scanned electrically – any current detected will indicate a fault in the liner, which can be repaired. This procedure can be carried out periodically to ensure the continued integrity of the liner.

(g) The mitigating silt fence will be kept inside the immediate site and will not impact on the SAC. See attached relevant drawing 14034-007 indicating the location of the fence and typical section detail.

(h) Post completion the pond will accumulate minor volumes of rainwater over its surface, which will be pumped out periodically to maintain capacity. It is proposed to pump this water to the distillery for use in the process.

Prior to installation of the liner / mid construction water may accumulate in the pond. Given the ground conditions and water table levels this is not expected to become an issue. However if any excavations need to be dewatered, the SS-contaminated water will be retained and treated within the boundary of the proposed development site. It will be collected and pumped into a settlement tank / pond (or similar feature), left undisturbed until sediments have settled, and then discharged via a buffered outflow to a soakaway in the east of the site (i.e. as far as possible from the river).

(i) See (a) above.

(j) This application preceded the adjacent planning application now being considered by the planning department. Accordingly at the time of lodgment there were no cumulative and in combination effects to be considered. This has now been collected in the revised NIS.

(k) Mitigation measures are defined and specified in the revised NIS and the Construction & Environmental Management Plan (see enclosed).

(l) In relation to field visits / ecological surveys, the extent of same is described in the enclosed NIS.

(m) Please find enclosed Natura Impact Statement including mapping of the current status of the species of conservation interest.

(n) In relation to the process and rational in screening the Natura 2000 sites, Please see enclosed NIS.

(o) Please see enclosed NIS.

(p) Please see enclosed NIS.

(q) Please see enclosed NIS.

(r) The EPA guidance note specifies that firewater retention systems must be automatic and must not require manual intervention (e.g. closing diversion valves, starting pumps) in the event of a significant fire event. The system which is the subject of the application is designed to work by gravity, with no emergency response required to ensure containment, recognising that the warehousing area of the site is normally unmanned. The natural location for the retention pond is then the lower part of the site; while other options to the east were explored, there were significant difficulties in ensuring adequate falls in the pipelines over long distances, increasing the risk of back-up in the system. The location is also a 'brown-field' site in an area already used for plant utilities, so has minimal impact on habitat or landscaped area.

2. As per 1(r) above, the containment of firewater run-off does not depend on an immediate response under an Emergency Response Plan. The system is designed to

remove flammable material from the fire site in a safe manner through underground pipework, thereby reducing risk to firefighters and also reducing the risk of escalation. The contained firewater can be dealt with safely when the incident is over.

3. Please find enclosed Construction & Environmental Management Plan in relation to the construction phase of the proposed development.

--

We trust this is in order.

Yours faithfully,

Lee Connolly
SSA Architects

Encl.