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Administration,
Environmental Licensing Programme,
EPA,
Johnstown Castle Estate,
Co. Wexford.
19th March 2014

Re: W0214-01 Waste Licence Application April 2008 for 60,000 tonnes.

Dear Sir/Mme.,

I refer to your letter dated 27th February 2014.

The waste licence application was submitted in April 2009 for increase in tonnage from 23,000 to 60,000 tonnes. The applicant currently intends to meet with the planning authority to discuss reduced annual intake of 30,000 tonnes. The application was refused planning permission mainly due to the impact of increased traffic volumes. It is hoped that the reduced tonnages may be acceptable to Cork County Council. The applicant requests if the Agency would consider the current application on file and this information contained in this submission for reduced tonnages of 30,000 tonnes.

If the proposal to Cork County Council is unsuccessful, the applicant would then consider it appropriate to abandon the application as suggested. The applicant has spent significant funds on the application and associated works on-site in recent years to allow for increased capacity.

I have now attached the extra information required to allow the EPA make a decision on the application. This information is contained in Appendices I to IV and summarised as follows;

Appendix I – Revised Table B.7.1

Having regard to the updated legislation, and in order to incorporate the requirements of the amended Waste Management Acts 1996 to 2011 and the European Communities (Waste directive) Regulations 2011, I enclosed a revised Table B.7.1 (Appendix I).

Appendix II – Revised Table H.1 (A)

A revised Table H.1 (A) (Appendix II) with a revised estimation of the quantity of waste likely to be handled in relation to each class of activity applied for based on the revised descriptions in the Third and Fourth Schedules and proposal to consider reduced tonnages of 30,000 tonnes.

Appendix III – Details of ecology report (prepared by John Lynch)

The ecology report has been prepared by ecologist John Lynch and is included in Appendix III.

Appendix IV – Details of air treatment system from EDPAC

We have received details of proposed air emission treatment from EDPAC International and this is included in Appendix IV. Their system proposes a carbon extract filtration system contained in mounted frames. The use of carbon filtration is suitable for mitigation of organic odours. It is also proposed to install roller-shutter doors to achieve negative air pressure within the building.

Appendix VI – Maps of the facility/Capacity to Treat Increased Tonnages

In relation to the capacity of the facility to accept increased tonnages, the attached maps indicate the layout of the facility and associated picking lines and material separation. There has been significant investment in infrastructure in the past 5 years to cater for allow increased tonnages. Planning permission has been received from Cork County Council for increase to facility building for storage of cardboard and paper bales. Planning permission was also received for increased parking areas at the rear.

Proposed Emission Limits

The following table below considers appropriate limits for the release of air to the atmosphere from the emission point.

Table 1 – Proposed Emission Limit Values from Air Extraction
Proposed Emission Point Reference No. A1

Parameter	Emission Limit Value
Ammonia	50 (ppm v/v)
Mercaptans	5 (ppm v/v)
Hydrogen Sulphide	5 (ppm v/v)

I would be grateful if you can consider the request of the facility manager, Martin O' Donoghue and assess the application for reduced tonnages of 30,000. As soon as information is available from Cork County Council the EPA will be informed.

If you require any further information please contact me.

Please address any further correspondence to Glenside Environmental, Cuil Greine House, Ballincollig Commercial Park, Link Road, Ballincollig, Cork.

Yours sincerely,



Patrick Power

APPENDIX I

TABLE B.7.1 THIRD AND FOURTH SCHEDULES OF THE WASTE MANAGEMENT ACT 1996, AS AMENDED.

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TABLE B.7.1 THIRD AND FOURTH SCHEDULES OF THE WASTE MANAGEMENT ACT 1996, AS AMENDED.

Waste Management Act 1996, as amended.					
Third Schedule Waste Disposal Operations		Y/N	Fourth Schedule Waste Recovery Operations		Y/N
D 1	Deposit into or on to land (e.g. including landfill, etc.).		R 1	<p>Use principally as a fuel or other means to generate energy: This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:</p> <ul style="list-style-type: none"> - 0.60 for installations in operation and permitted in accordance with applicable Community acts before 1 January 2009, - 0.65 for installations permitted after 31 December 2008, <p>using the following formula, applied in accordance with the reference document on Best Available Techniques for Waste Incineration: Energy efficiency = $(E_p - (E_f + E_i)) / (0.97 \times (E_w + E_f))$ where—</p> <p>‘E_p’ means annual energy produced as heat or electricity and is calculated with energy in the form of electricity being multiplied by 2.6 and heat produced for commercial use multiplied by 1.1(GJ/year),</p> <p>‘E_f’ means annual energy input to the system from fuels contributing to the production of steam (GJ/year),</p> <p>‘E_w’ means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/year),</p> <p>‘E_i’ means annual energy imported excluding E_w and E_f(GJ/year),</p> <p>‘0.97’ is a factor accounting for energy losses due to bottom ash and radiation.</p>	
D 2	Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.).		R 2	Solvent reclamation/regeneration.	
D 3	Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.).		R 3	Recycling /reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes), which includes gasification and pyrolysis using the components as chemicals.	
D 4	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.).		R 4	Recycling/reclamation of metals and metal compounds.	
D 5	Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.).		R 5	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.	
D 6	Release into a water body except seas/oceans.		R 6	Regeneration of acids or bases.	
D 7	Release to seas/oceans including sea-bed insertion.		R 7	Recovery of components used for pollution abatement.	

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D 8	Biological treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12.		R 8	Recovery of components from catalysts.	
D 9	Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcinations, etc.).		R 9	Oil re-refining or other reuses of oil.	
D 10	Incineration on land.		R 10	Land treatment resulting in benefit to agriculture or ecological improvement.	
D 11	Incineration at sea (this operation is prohibited by EU legislation and international conventions).		R 11	Use of waste obtained from any of the operations numbered R 1 to R 10.	
D 12	Permanent storage (e.g. emplacement of containers in a mine, etc).		R 12	Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).	Y P
D 13	Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).	Y	R 13	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y
D 14	Repackaging prior to submission to any of the operations numbered D 1 to D 13.	Y			
D 15	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y			

APPENDIX II

TABLE H.1(A). QUANTITIES OF WASTE IN RELATION TO EACH CLASS OF ACTIVITY APPLIED FOR

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TABLE H.1(A). QUANTITIES OF WASTE IN RELATION TO EACH CLASS OF ACTIVITY APPLIED FOR

Waste Management Act 1996, as amended. 3rd Schedule (Disposal) Operations			Waste Management Act 1996, as amended. 4th Schedule (Recovery) Operations		
Class of Activity Applied For		Quantity (tpa)	Class of Activity Applied For		Quantity (tpa)
Class D 1			Class R 1		
Class D 2			Class R 2		
Class D 3			Class R 3		
Class D 4			Class R 4		
Class D 5			Class R 5		
Class D 6			Class R 6		
Class D 7			Class R 7		
Class D 8			Class R 8		
Class D 9			Class R 9		
Class D 10			Class R 10		
Class D 11			Class R 11		
Class D 12			Class R 12		0-30,000
Class D 13		0-20,000	Class R 13		0-30,000
Class D 14		0-20,000			
Class D 15		0-20,000			

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APPENDIX III

ECOLOGY REPORT

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APPROPRIATE ASSESSMENT

SCREENING REPORT

IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE
(92/43/EEC)

FOR THE EXPANSION OF A WASTE TRANSFER
FACILITY AT KNOCKPOGE, WATERFALL, COUNTY
CORK

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SEPTEMBER 2013

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1.0 Introduction

This document constitutes an Appropriate Assessment Screening Report prepared for expansion of a Waste Transfer Station at Knockpoge, Waterfall, County Cork. The Waste Transfer Station is operated by Ted O'Donoghue and Sons Ltd under Waste License W0214-02.

As the waste transfer station is licensed for, and processes, under 25,000 tonnes the proposed project is not a scheduled development requiring an Environmental Impact Statement as listed under schedule 5 of the Planning and Development Act 2001 (SI 600/2001), Part 2. 11. a, which includes in its scope "*Schedule 5.11.(b) Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule*".

This Screening Report has been completed for in respect to a direction from the Environmental Protection Agency as detailed in a letter of the 18th of June 2013 to Mr. Pat Power, Glenside Environmental Services.

This letter states.

"Undertake a screening for Appropriate Assessment and state whether the activity, individually or in combination with other plans or projects, will have a significant effect on a European Site, the applicant shall provide a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations (S.I. No 477 of 2011). Where, based on the screening, it is considered that an Appropriate Assessment is not required; a reasoned response should be provided.

You are further advised to refer to the document "Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities". Issued in 2009 by the Department of the Environment, Heritage and Local Government, and revised in 2010".

1.1 Requirement for Appropriate Assessment Screening

Appropriate Assessment is required under Article 6(3) and 6(4) of the European Union Council Directive (92/43/EEC) on the conservation of natural habitats and of wild flora and fauna.

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

Article 6(3)

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(4) goes on to discuss alternative solutions, the test of “imperative reasons of overriding public interest” (IROPI) and compensatory measures:

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

The process of compilation of this Screening Report assesses whether the project either alone or in combination with other plans and projects is likely to have a significant impact on a European designated site under the requirements of the Habitats Directive.

This report therefore details

1. Whether the project is necessary for the management of the site
2. A description of the project and other projects and plans associated with the Waterfall Facility site that have in combination a potential to have significant effects on a European designated site
3. Identifies and details the potential aspects and effects of the development on the designated sites
4. Assesses and describes the significant effects, if any, on the designated site(s)

In accordance with the assessment guidelines the precautionary principal is applied in determining any significant aspects and impacts. Should any significant impacts be identified then completion of an Appropriate Assessment shall be recommended.

1.2 Screening Methodology

This Appropriate assessment Screening Assessment involves the following stages

- Assessment of the key elements of the project and their potential impacts on Natura 2000 designated sites
- Examination of the Natura 2000 sites including details of the designation qualifying features such as the presence of Habitats Directives Annex I and II habitats and bird species annexed under the Birds Directive.

Due consideration has been given in the compilation of this Screening Report to

- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000)
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2001)
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission (2007)
- Habitats Directive (92/43/EEC)
- Birds Directive (79/409/EEC)
- Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007)
- European Union (Industrial Emissions) Regulations 2013, S.I. 138 of 2013.
- the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) Part 5 42. (1) which states " *Screening for Appropriate Assessment and Appropriate Assessment of implications for European Sites:42. (1) A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site*".

The Screening Assessment follows the methodology guidelines detailed in

“Assessment of plans and projects significantly affecting Natura 2000 sites, methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC” (2001), Department of Environment, Heritage and Local Government (2009, revised February 2010)

Appropriate Assessment of Plans and Projects in Ireland and National Parks and Wildlife Services (2010) Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.

2.0 Stage 1 Screening

2.1 Description of the Project Proposed Activities

The proposed development site is not designated as a site of habitat, birds or conservation concern.

The site development is not directly associated with the conservation management of neither the site nor any associated designated site under the Habitats or Birds Directives.

2.1.1. Quantifiable Boundaries of the Development

The proposed development site is located in the town land of Knockpoge, Waterfall, County Cork. The site is located at GPS co-ordinates W 58702 65357 and comprises approximately 3 hectares.

The proposed development is set in a rural setting comprised predominantly of improved agricultural grassland and dairying as well as arable crop cultivation, especially barley. Habitats within 2km of the site have been degraded due to agricultural development and are of limited conservation potential.

The site consists of an existing Waste Transfer Station comprising waste management buildings and a hard paved yard. Ted O'Donoghue and Sons Limited waste transfer station segregates and transfers annually in the order of 23,000 tonnes of household and commercial non-hazardous waste.

Waste operations on site are confined to

- Reception
- Storage
- Waste movement and segregation
- Waste loading operations

It is intended that more efficient waste segregation through trammelling will be introduced as part of this expansion project.

The site is situated is set back from a third class roadway behind a ribbon development of houses in a rural agricultural setting.

The transfer station consists of a paved area for truck parking. Waste management operations are undertaken within a large shed on the property.

The site also includes offices, sanitary facilities, and environmental abatement and control equipment. Sewage and domestic wastewater from the site is treated in a package biological treatment plant and treated wastewater is discharged to a percolation area on site.

The expansion requirements for the operation include the installation of a trammelling unit for the separation of organic fines from residual refuse. The organic fraction will be sent for composting thereby increasing the percentage of waste received at the site that shall be recycled. Ancillary to this equipment further upgrades associated with the trammelling operation include the installation of a roller shutter door and a carbon adsorption unit on the roof. The carbon adsorption unit will create negative pressure within the operational area and abate any odours generated during waste management operations. Activated carbon utilised within the odour abatement unit will be sent offsite for treatment once exhausted.

Surface water runoff from the facility is collected and held in a retention tank. This surface water is treated by filtration, chemical treatment (pH adjustment, if required) and ultra-violet disinfection prior to discharge to a surface water drain on site. The surface water is monitored at sampling location SW1 which is sampled monthly in accordance with the waste licence for phosphates, ammonia, COD, conductivity, sulphates, total and faecal coliforms.

The surface water drainage ditch discharges to the Curraheen River with a confluence at approximately 3km from the site. The Curraheen River joins the tidal influenced section of the River Lee in Cork City near University College Cork at Grid Reference W 65459 71233.

The boundaries of the site are detailed in the attached site drawing, Figure 2.

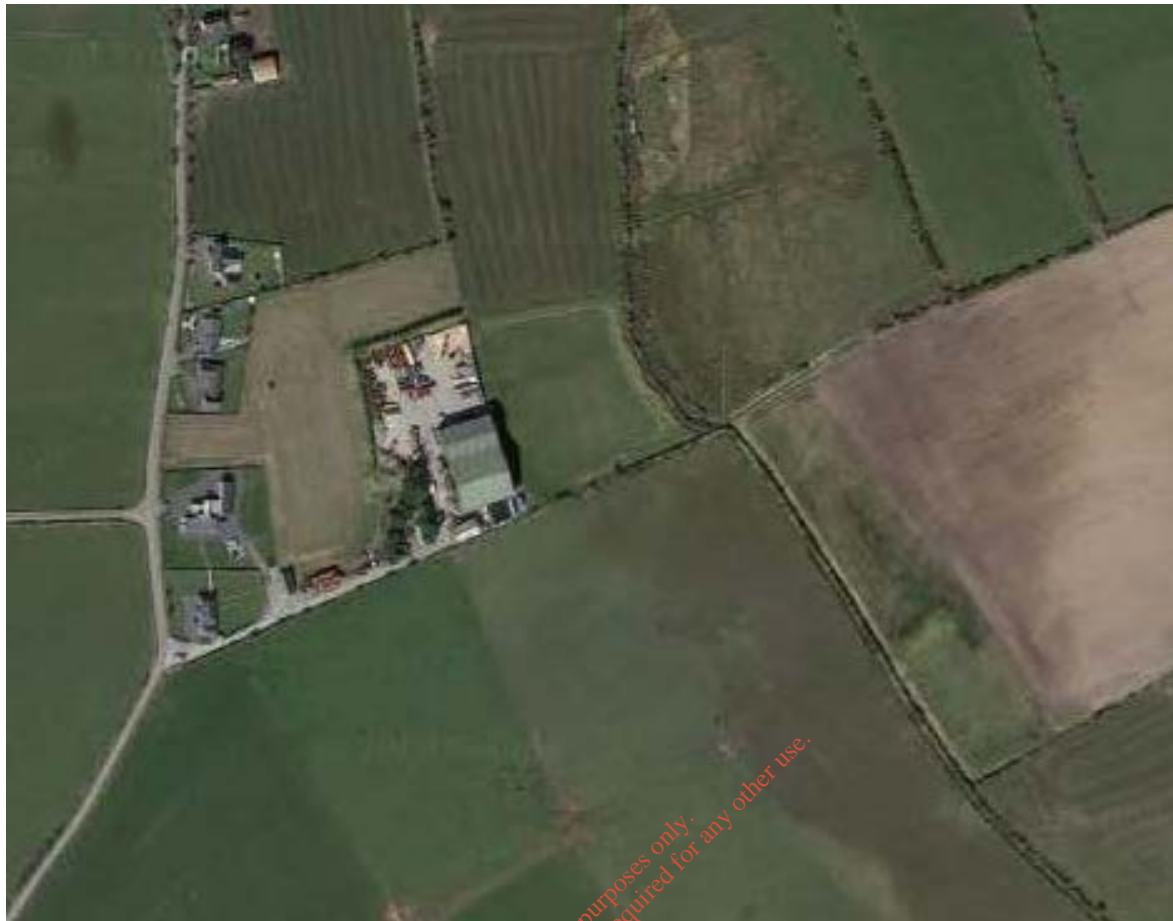


Figure 1 Aerial View and Aspect O'Donoghue and Sons Ltd Waste Transfer Station

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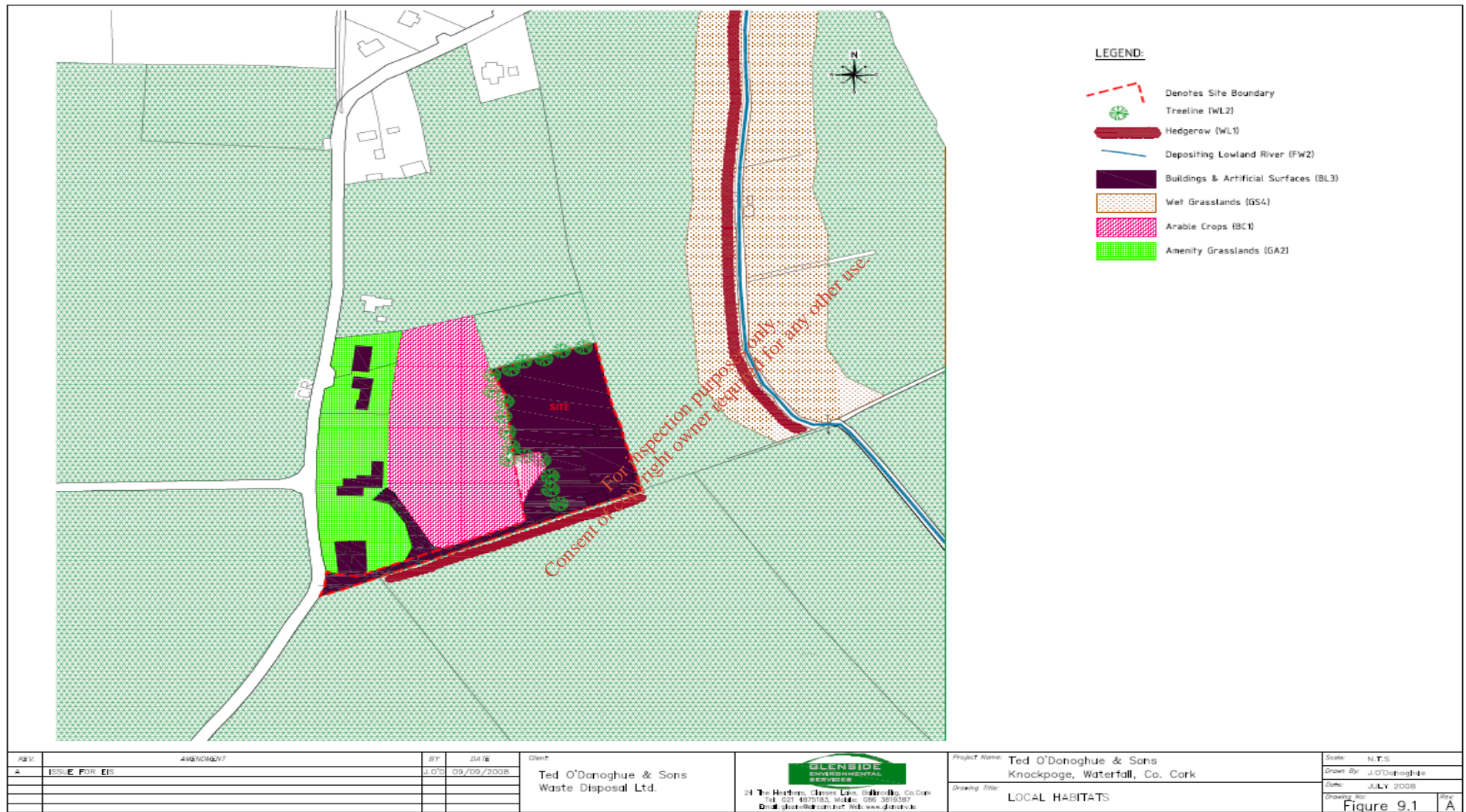


Figure 2 Habitat Map and Quantifiable Boundaries of the Site

2.2 Assessment of Significance

2.2.1 EU Designated Sites

There are 6 designated and proposed sites for designation to EU Directives within 10km of the proposed development site at Ballyguyroe North. National Parks and Wildlife Service site synopses have been reviewed for this screening assessment. These synopses are included in Appendix 1.



Figure 3 Designated sites within 10km

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Table 1 Assessment of Potential for Impact on EU Designated Sites

Site Code	Sites	Designation	Distance from site	Reason for Designation	Impact Assessment	Level of Significance
001249	Ballincollig Cave	pNHA	3.5km	Karst feature with some botanical species of local interest	The site is hydro-geologically separate from the proposed development and no impact from site activities is expected. No emissions from the facility during construction or operation that could impact on the site are expected.	Development of the site is remote and will not impact on the designated site
001857	Blarney Lake	pNHA	9km	An area of lake, mixed woodland and areas of wet grassland of botanical interest and locally importance for waterfowl and wetland bird species of conservation concern	The site is hydro-geologically separate from the proposed development and no impact from site activities is expected. No emissions from the facility during construction or operation that could impact on the site are expected.	Development of the site is remote and will not impact on the designated site
001081	The Lough, Cork City	pNHA	8km	An urban lake of local importance for waterfowl, in particular Mute Swan	The site is hydro-geologically separate from the proposed development and no impact from site activities is expected. No emissions from the facility during construction or operation that could impact on the site are expected.	Development of the site is remote and will not impact on the designated site
000094	Lee Valley	pNHA	7km	A mosaic of habitats including riparian, woodland and wet grassland of primarily riparian importance	<p>Drainage from the site eventually enters the River Lee in a tidal section at W 65459 71233. Surface water runoff from the site is retained for monitoring and treatment prior to discharge to surface water. In an emergency situation such as a fire firewater runoff could enter surface water.</p> <p>The Lee valley designated sites are upstream of the confluence of the Curraheen River and no impact on the site is expected</p>	Capacity exists on site for the retention of firewater runoff. Any runoff that escapes the site will enter the surface drainage discharge ditch and after 5km the Curraheen river and from there the River Lee. No designated sites are in the discharge route. All Lee valley designated sites are upstream. Significant controls exist on site to control discharges. Significant dilution exists over the approximately

Site Code	Sites	Designation	Distance from site	Reason for Designation	Impact Assessment	Level of Significance
						20km of water course before any runoff would enter the Cork Harbour SPA below Cork City. No significant impacts are expected that could impact on the Cork Harbour SPA nor the Lee valley designated sites
000103	Shournagh Valley	pNHA	7km	Designation as a botanically diverse woodland of Oak, Beech and Hazel	The site is hydro-geologically separate from the proposed development and no impact from site activities is expected. No emissions from the facility during construction or operation that could impact on the site are expected.	Development of the site is remote and will not impact on the designated site
001740	Bandon River Valley	pNHA	9km	This area is important as it contains an example of oak woodland on steep valley sides. The Bandon Valley is especially valuable for its woodlands and unmodified river bed, which are a rare habitat in a European context.	The site is hydro-geologically separate from the proposed development and no impact from site activities is expected. No emissions from the facility during construction or operation that could impact on the site are expected.	Development of the site is remote and will not impact on the designated site
004030	Cork Harbour	SPA	15km	Internationally important numbers of shorebirds	Potential for runoff in emergency situations such as a fire entering surface water and contaminants discharging to the Curraheen River and thereby to the River Lee	The site has a fire water retention system installed capable of retaining fire water runoff. Given the onsite controls, distance from the SPA and dilution in waterways the impact is not ascertained as being of significant risk.

2.3 Management and Mitigation of Potential Environmental Aspects

2.3.1 Conservation objectives for Natura 2000 sites.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. 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.

2.3.2 Potential Impacts on Natura 2000 Designated Sites and Level of Significance

All designated sites are remote and isolated geographically and hydro-geologically from the site. No receptor pathways of environmental aspect significance exist for all the designated sites within 10km of the proposed development.

No significant atmospheric or surface water emissions are likely to occur under normal, abnormal (for example maintenance) or emergency situations such as fire that can have an impact on designated habitats. Wastewater and surface water discharges from the facility will continue to be managed in compliance with the present Waste License W0214-02.

Cork Harbour SPA although outside the 10km assessment area for designated sites has been included in the assessment due to the fact that surface water from the site flows via the Curraheen River and River Lee from the site. This presents a potential source-pathway-receptor pathway. The assessment reviewed the potential for contaminated firewater runoff to enter the surface water system from the site during an emergency situation, such as a fire.

The onsite controls such as collection of surface water on the site through runoff control in paved areas and the retention of firewater runoff controls this aspect of operations. This coupled with the remoteness of the site from the Cork Harbour SPA, and potential for dilution of any surface water contaminants, concludes that the potential for an impact on this designated site is not significant.

Given the proposed development and installation of environmental abatement equipment the environmental aspects of the project are positive for the improvement of environmental operations and the mitigation of environmental aspects on a local basis such as the prevention of odour emissions.

3.0 Conclusions and Requirement for an Appropriate Assessment

The conclusion of this Screening Report is that there is no expected significant environmental impact on EU designated sites nor protected species under the Habitats and Birds Directives within 10 km of the proposed development site.

The proposed development shall not impact on the conservation objectives of the designated sites nor interrupt progress towards achieving the conservation objectives.

Additionally, the development shall not disrupt the factors that help to maintain the favourable conditions of the designated sites nor interfere with the balance, distribution and density of key species that are indicators of the favourable condition of the designated sites.

In this regard it is proposed that a Natura Impact Statement (Appropriate Assessment) is not required for the proposed development.

4.0 References

Assessment of plans and projects significantly affecting Natura 2000 sites, methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC” (2001), Department of Environment, Heritage and Local Government (2009, revised February 2010)

Appropriate Assessment of Plans and Projects in Ireland and National Parks and Wildlife Services (2010) Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities

Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. Department of Environment, Heritage and Local Government. December 2009

BAT Mitigation Guidelines for Ireland. National Parks and Wildlife Service, 2006

Cork County Biodiversity Action Plan 2009 to 2014

Cork County Heritage Plan 2005 to 010

Geological Survey of Ireland Aerial Mapping and Photography www.opi.ie

National Parks and Wildlife Service Designated Site Synopses. NPWS Website www.npws.ie

South Western River Basin District – Water Framework Directive. www.wfdireland.ie

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Appendix 1

SITE SYNOPSIS

SITE NAME: BALLINCOLLIG CAVE

SITE CODE: 001249

Ballincollig is a satellite town of Cork City and lies about 5km to the west in the same linear depression, based on limestone. South-west of the town the soils are shallow and the rock breaks through in places. Some of these outcrops are quarried but the highest one is untouched and bears Ballincollig Castle with the cave below. The site consists of this hall and also a lower one, partly quarried, to its south.

The south and east-facing slopes of the castle site are of dry grassland with some bushes of Blackthorn (*Prunus spinosa*), Elder (*Sambucus nigra*) and Ash (*Fraxinus excelsior*) below a cliff. The grassland contains Crested Dog's-tail (*Cynosurus cristatus*), Field Wood-rush (*Luzula campestris*) and Yellow Oat-grass (*Trisetum flavescens*) with much Common Bird's-foot-trefoil (*Lotus corniculatus*), Oxeye Daisy (*Leucanthemum vulgare*) and Mouse-ear Hawkweed (*Pilosella officinarum*). A number of less common species are included, for example Hop Trefoil (*Trifolium campestre*), Common Calamint (*Clinopodium ascendens*) and the Spiked Sedge (*Carex spicata*), as well as the introduced Greater Celandine (*Chelidonium majus*) and

Hairy Tare (*Vicia hirsuta*).

Woodland is densest on the north side where Ivy Broomrape (*Orobanche hederæ*) and Three-nerved Sandwort (*Moehringia trinerva*) add interest to the more widespread flora of False Brome (*Brachypodium sylvaticum*), Sanicle (*Sanicula europaea*), Shield-fern (*Polystichum setiferum*) and Hart's-tongue (*Phyllitis scolopendrium*). Both polypody ferns (*Polypodium australe* and *P. interjectum*) grow widely and cover cliffs and trees in places.

The other sections of the site are a disused quarry where a broad range of 'limestone'

plants occurs on the rock surfaces and grassland. Biting Stonecrop (*Sedum acre*), Wall Speedwell (*Veronica arvensis*), Common Whitlowgrass (*Erophila verna*), Rue-leaved

Saxifrage (*Saxifraga tridactylites*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*) and Field Madder (*Sherardia arvensis*) are some of these.

The site is relatively species-rich, even for limestone, with some uncommon native and introduced plants. It is also an example of natural habitat in an area of intensive agriculture and also rapid urbanisation. The cave deposits are interesting from a geological viewpoint.

18.11.2009

SITE SYNOPSIS

SITE NAME: BLARNEY BOG

SITE CODE: 001857

Blarney Bog is a small area of Reed Canary-grass (*Phalaris arundinacea*) fen, situated in the flat valley floor of the River Blarney. It is located 0.5km west of Blarney Town and 4.5km north-west of Cork City. It is bounded on the north side by a new road development and to the south of the river by the fences of the agricultural land abutting the wetland site. This wet area was formed through ponding of the Blarney River by a natural blockage at Gothic Bridge to the west of the site (probably

a fault in the underlying bedrock). Sediments brought downstream from the Blarney River and its tributaries have accumulated and the soil is a fine silt with some peat. There was greater peat accumulation on the south side of the river (Inchancomain townland) but this has been cut away in the past, the only evidence of this activity remaining at the field edges. The vegetation on the south side is also of a more acidic

nature. The area is damp throughout the year and is flooded in the winter particularly at the western side of the site.

The main habitats of the area are lowland wet grassland, both grazed and ungrazed and freshwater marsh/fen. The dominant species of the wet grassland are Reed Canary-grass, Soft Rush (*Juncus effusus*) and grasses such as Creeping Bent (*Agrostis*

stolonifera), Tufted Hair-grass (*Deschampsia cespitosa*) and Yorkshire-fog (*Holcus lanatus*). Land to the west is generally wetter with herbs such as Greater Tussocksedge

(*Carex paniculata*), Greater Pond-sedge (*Carex riparia*) and Bladder-sedge (*C. vesicaria*). Commonly occurring herbs are Meadowsweet (*Filipendula ulmaria*) and Common Valerian (*Valeriana officinalis*), locally distributed in the sward are Yellow Loosestrife (*Lysimachia vulgaris*) and Purple-loosestrife (*Lythrum salicaria*). The land nearer the Blarney road is drier with a mixture of grasses and sedges with the ungrazed areas being more tussocky with herbs such as Common Sorrel (*Rumex acetosa*) and Tormentil (*Potentilla erecta*). There is considerable disturbance to the area as a new road development is occurring in the north of the site and soil/subsoil has been bulldozed onto some of this grassland.

South of the river the land is wetter with scattered willow (*Salix* spp.) trees, Purple Moor-grass (*Molinia caerulea*), Tufted Hair-grass and Soft Rush dominating the vegetation. The wetter areas support the growth of Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Devil's-bit Scabious (*Succisa pratensis*) and Common Yellow-sedge (*Carex demissa*). Towards Horgan's Bridge in the east of

the site, is an area dominated by tussocks of Greater Tussock-sedge (*Carex paniculata*). The water course flora is not particularly rich but contains Common Duckweed (*Lemna minor*), Floating Sweet-grass (*Glyceria fluitans*) and Fool's Watercress

(*Apium nodiflorum*). Less frequently found are Branched and Unbranched Burreed (*Sparganium erectum* and *S. emersum* respectively) and pondweeds (*Potamogeton* spp.).

The area as a whole is used by a variety of bird species. Birds noted to be breeding in

the site include Sedge and Grasshopper Warblers, Reed Bunting, Stonechat, Meadow

Pipit, Snipe and Mallard. In the water Snipe and Mallard are seen feeding in the area and also Teal. Hen Harriers, a species listed in Annex I of the E.U. Birds Directive and also a Red Data Book species whose status is threatened in Ireland, are regularly

seen in this area, hunting over the wetter ground and sometimes nesting in the reedbeds.

The area is threatened by the road developments to the north of the site which has disturbed and destroyed some of the grassland, and the closer proximity of the traffic may disturb the birds which breed in the area. It may also alter the hydrology of the

site.

27.11.2009

SITE SYNOPSIS

SITE NAME: LEE VALLEY

SITE CODE: 000094

This site occupies five separate sections of the valley of the River Lee, immediately to

the west of Cork City. One section passes close to Ballincollig, and the Ballincollig Regional Park makes up a portion of the site. A diverse range of semi-natural habitats

occurs here, with those described below being the most prevalent:

Wet broadleaved woodland has developed in a number of places on the river side.

The dominant trees are either Alder (*Alnus glutinosa*), Grey Willow (*Salix cinerea*) or Small-leaved Elm (*Ulmus minor*). Downy Birch (*Betula pubescens*) is often present

also. Typical species occurring in the ground flora include Cock's-foot (*Dactylis glomerata*), Yorkshire-fog (*Holcus lanatus*), Canary-grass (*Phalaris* spp.),

Meadowsweet (*Filipendula ulmaria*), Cuckooflower (*Cardamine pratensis*), Common

Marsh-bedstraw (*Galium palustre*), Wild Angelica (*Angelica sylvestris*) and Lesser

Celandine (*Ranunculus ficaria*). Other parts have abundant Hemlock Water-dropwort

(*Oenanthe crocata*), Marsh-marigold (*Caltha palustris*), Yellow Iris (*Iris*

pseudacorus), Fool's Water-cress (*Apium nodiflorum*) and Purple-loosestrife

(*Lythrum salicaria*).

Some areas behind the riverbank are frequently flooded and support wet grassland

communities. Species of the wet woodland ground flora described above occur in

many of these stands, as do Sweet Vernal-grass (*Anthoxanthum odoratum*), Ribwort

Plantain (*Plantago lanceolata*), Meadow Buttercup (*Ranunculus acris*), Silverweed

(*Potentilla anserina*), Red Clover (*Trifolium pratense*) and Common Sorrel (*Rumex*

acetosa).

Dry broadleaved woodland exists in other sections of the valley, with the most

important trees being Ash (*Fraxinus excelsior*), oak (*Quercus* spp.) and Holly (*Ilex*

aquifolium). Hazel (*Corylus avellana*) and Hawthorn (*Crataegus monogyna*) are

important components of some stands, while the exotic species Beech (*Fagus*

sylvatica) and Sycamore (*Acer pseudoplatanus*) occur in others. The ground flora of

many of these woods is relatively species-rich and includes Wood Anemone

(*Anemone nemorosa*), Herb-Robert (*Geranium robertianum*), Honeysuckle (*Lonicera*

periclymenum), Ground-ivy (*Glechoma hederacea*), Bramble (*Rubus fruticosus*

agg.),

Bluebell (*Hyacinthoides non-scripta*) and False Brome (*Brachypodium sylvaticum*).

In places, Hard Fern (*Blechnum spicant*), Great Wood-rush (*Luzula sylvatica*),

Malefern

(*Dryopteris filix-mas*) and Wood Speedwell (*Veronica montana*) are common,

and one stand has a very well-developed shrub layer of Spindle (*Euonymus*

europaeus).

Unimproved dry grassland occurs on an area of soil that has probable glacial origins.

Field Wood-rush (*Luzula campestris*), Sweet Vernal-grass, Crested Dog's-tail

(*Cynosurus cristatus*), Spring-sedge (*Carex caryophyllea*), Wild Carrot (*Daucus*

carota), Common Bird's-foot-trefoil (*Lotus corniculatus*), Glaucous Sedge (*Carex*

flacca), White Clover (*Trifolium repens*) and Cowslip (*Primula veris*) are all present

here.

Freshwater marsh fringes the river itself in places. Here, Bulrush (*Typha latifolia*),

Branched Bur-reed (*Sparganium erectum*), Bottle Sedge (*Carex rostrata*), Canarygrass,

Meadowsweet, Water Horsetail (*Equisetum fluviatile*), Marsh-marigold and Water Mint (*Mentha aquatica*) are all species frequently encountered.

A number of wetland bird species breed here, including Mallard, Heron, Sedge and Grasshopper Warblers and Reed Bunting and two rather locally distributed butterflies,

the Small Blue and the Wood White also occur.

Land-use in the site consists of a little cattle-grazing and hay-making in the grasslands. Sections of the valley have been improved for agriculture in the past, so that the site now consists of five sub-sites. This should not be allowed to infringe further into the site. The spread of Sycamore poses a threat to the naturalness of parts

of the woodlands, as do river engineering works to the river bank communities.

Recreation is important in the Valley, especially in the Ballincollig Regional Park.

The diverse range of intact semi-natural habitats in the Lee Valley makes this a site of

regional conservation importance.

4.11.2009

SITE SYNOPSIS

SITE NAME: SHOURNAGH VALLEY

SITE CODE: 000103

This site includes two lower sections of the Shournagh River c. 8km west of Cork City – this river flows south-east to join the River Lee which then flows through the City. The Shournagh River has its source in the foothills of the Boggeragh Mountains and is a fairly turbulent river, whose energy, in former times, was used to power the Mills which are now derelict along its banks.

The section furthest north-west from Cork City, comprises areas of wet woodland, scrub and an old estate mixed woodland - Cloghphilip Wood. Wet woodland areas are composed mainly of Hazel (*Corylus avellana*) and oak (*Quercus* spp.) with some Crab Apple (*Malus sylvestris*). The ground-flora species include Bilberry (*Vaccinium myrtillus*), *Rhytidadelphus triquetrus*, Wood-sorrel (*Oxalis acetosella*) and Soft Shield-fern (*Polystichum setiferum*). In some places, Beech (*Fagus sylvatica*) has been planted. The areas of scrub are dominated by Grey Willow (*Salix cinerea*) and are developing into willow woodland with some Downy Birch (*Betula pubescens*), Hazel and Holly (*Ilex aquifolium*). They are grazed by cattle and the ground flora is composed of Common Water-starwort (*Callitriche stagnalis*), Blinks (*Montia fontana*), Bulbous Rush (*Juncus bulbosus*), Creeping Bent (*Agrostis stolonifera*) and the sedges - Glaucous Sedge (*Carex flacca*) and Common Yellow-sedge (*C. demissa*).

The sloping fields adjacent to this part of the river have been abandoned for agriculture and are being colonized by the aforementioned scrub and by Bracken (*Pteridium aquilinum*), whereas the more level fields next to the site boundary are often endangered, with improved agricultural grassland grazed by sheep or cattle. Within this section of the site is an old planted wood (Cloghphilips) co-dominated by Beech and oak with Hazel in the clearings. The ground flora species include Wood Anemone (*Anemone nemorosa*), Soft Shield-fern, Lesser Celandine (*Ranunculus ficaria*) and Bluebell (*Hyacinthoides non-scripta*); wetter areas support the growth of Meadowsweet (*Filipendula ulmaria*) and Wild Angelica (*Angelica sylvestris*). The introduced species Winter Heliotrope (*Petasites fragrans*), Greater Periwinkle (*Vinca*

major) and Columbine (*Aquilegia vulgaris*) are present in parts of the wood. The spread of Sycamore (*Acer pseudoplatanus*) is also noted in this wood. On the opposite side of the river (north bank) to Clogphillips Wood a young woodland of Hazel, willow (*Salix* spp.) and Hawthorn (*Crataegus monogyna*) is developing with a ground flora of Bramble (*Rubus fruticosus* agg.), Hemlock Water-dropwort (*Oenanthe*

crocata) and Meadowsweet.

Further downstream in Codatanavally townland a golf course has been built and the grass is mown right up to the river bank and some areas of scrub woodland have also

been bulldozed. The remaining woodland here is of an open structure with Beech and

Ash (*Fraxinus excelsior*) being the dominant species, and a ground flora of Bracken, Bluebell and Greater Stitchwort (*Stellaria holostea*). Both Holly and Spindle (*Euonymus europaeus*) are spreading through this woodland. Wetter areas are dominated by Alder (*Alnus glutinosa*), willow, Ash and some tall oak. Oak is also regenerating in Bracken dominated areas and like in Clogphillips Wood, Sycamore is also spreading.

The Coolymurraghne estate woodland consists of a broadleaved woodland mostly of full grown, widely spread oak trees with a diverse understorey growth of Holly with Scaly Male-fern (*Dryopteris affinis*), but the northern end of the wood consists of Beech with pine (*Pinus* spp.) and larch (*Larix* spp.). Much of the ground is steeply sloping (c. 50 degrees) and the ground flora is sparse, possibly limited by dryness and

the shading from the abundance of Holly. At the southern end of this wood is an area of old oak and Sycamore coppice, also with Holly and much Ivy (*Hedera helix*) and Navelwort (*Umbilicus rupestris*). An extensive badger sett is found here. This area grades northwards into young oak woodland with Hazel and Holly, and a ground flora

of Great Wood-rush (*Luzula sylvatica*), *Mnium hornum*, Bilberry and carpets of Bluebell.

Dippers and Grey Wagtail are noted to feed along and around the river channel, with Willow Warbler and Redpoll Finches on the higher reaches of the river.

Wood Improvement Scheme grants are being sought (1993) for both Clogphillip and Coolymurraghne woods. Both of these woods contain large fully grown oak trees, within the surrounding area. They form the most important part of the Valley's woodland. Replanting with conifers or non-native broadleaves is a major threat and the spread of non-native species such as Sycamore, may also be detrimental.

The woods along the Shournagh Valley included in this site (103) are recommended for conservation and are noted to be of regional importance and deserving of NHA status.

4.11.2009

SITE SYNOPSIS

SITE NAME: BANDON VALLEY ABOVE INISHANNON

SITE CODE: 001740

The Bandon River flows almost due east for much of its course, following a natural synclinal valley that itself extends to Cloyne. At Inishannon however, the river turns abruptly to the south, crossing several ridges before reaching the sea at Kinsale. The interest of the valley lies partly in its aquatic habitats since the river has not been

deepened artificially as is so often the case. Four areas of scientific interest are located along the river. This site covers a section of the river 3km east of Bandon running approximately a further 4km downstream to Inishannon.

The recent survey of this area reports it to be very scenic. Woodlands occur where the

meanders of the valley approach the valley's edge and create steep slopes. The woodlands are semi-natural, mostly planted with species such as Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*) mixed in with the native oaks (*Quercus*

spp.). Some areas of commercial plantation occur near the railway tunnel and at Drumkeen Wood. The spread of Rhododendron (*Rhododendron ponticum*) is limited to small areas of the site.

Lower down in the Bandon Valley birdlife is more associated with woodland and involves characteristic species like owls, Sparrowhawk, Woodcock and Jay.

Cormorant and Heron fish throughout the river.

The valley is reported to have Otter in many places, a species listed in Annex II of the

E.U. Habitats Directive as it is threatened within the E.U.

This area is important as it contains an example of oak woodland on steep valley sides. The Bandon Valley is especially valuable for its woodlands and unmodified river bed, which are a rare habitat in a European context.

25.11.2009

SITE NAME: CORK HARBOUR SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poul nabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character.

These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva lactuca* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the

North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Salt marsh species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Laxflowered

Sea-lavender (*Limonium humile*) and Sea Arrowgrass (*Triglochin maritima*). Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe,

Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest

for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. The two-year mean of summed annual peaks for the entire harbour complex was 55,401 for the period 1995/96 and 1996/97. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (905) and Redshank (1,782) - all figures given are average winter means for the two winters 1995/96 and 1996/97. At least 18 other species have populations of national importance, as follows: Little Grebe (51), Great Crested Grebe (204), Cormorant (705), Grey Heron (63), Shelduck (2,093), Wigeon (1,852), Teal (922), Pintail (66), Shoveler (57), Red-breasted Merganser (88), Oystercatcher (1,404), Golden Plover (3,653), Grey Plover (84), Lapwing (7,688), Dunlin (10,373), Bartailed Godwit (417), Curlew (1,325) and Greenshank (26). The Shelduck population is the largest in the country (over 10% of national total). The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145) and Turnstone (79). Other species using the site include Gadwall (13), Mallard (456), Tufted Duck (113), Goldeneye (31), Coot (53), Mute Swan (38), Ringed Plover (34) and Knot (38). Cork Harbour is a nationally important site for gulls in winter and autumn, especially Black-headed Gull (4,704), Common Gull (3,180) and Lesser Black-backed Gull (1,440).

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat. As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 wintering species that have populations of national importance, as well as a

nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

26.2.2008

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APPENDIX IV

DETAILS OF AIR TREATMENT SYSTEM FROM EDPAC

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TECHNICAL SPECIFICATION SHEET

File: Q6414-01-A

PROJECT DETAILS

Date	01 July 2010	Unit No.	Q6414-01-A
Project Reference	O Donoghue Waste	Rev Date	01 July 2010
Project No.	6414	Air Flow (m3/s)	NaN
Customer		Total Static Pressure (Pa)	839
Unit Reference	Extract Filtration Sytem	Quantity	1

UNIT CONSTRUCTION

Unit Model		AHU Location	External
Aluminium Frame Work	50mm A Post 1.7 Galv	Panel Depth	
Base Frame	PB 150	Panel Construction External	0.5 Prevarnished Zinc coated Steel
Frame Coating	Mill Finished	Panel Construction Internal	0.5 Prevarnished Zinc coated Steel
Access Side	Right	Panel Insulation	Expanded Polyurethane 25mm of density 45 Kg/m3

SECTION WEIGHTS AND DIMENSIONS

Section No.	Width (mm)	Height (mm)	Length (mm)	Weight (KG)
Section A	2890	2180	4665	2147
Overall Unit Dimensions	2890	2180	4665	2147

INLET SECTION

Height x Width x Depth	None	mm	Location	Onair
Flange size	None	mm	Mounting	None
Edge seals	None		Blade type	None
Additional opening type	50mm spigot GI		Alignment	Bottom
Additional opening H x W	2080 x 2790	mm	Damper Material	None
Additional opening finish				

Section A

PANEL and BAG FILTER

Panel Grade	EU 4	Bag Grade	EU7
Filter make	Camfil/Equivalent	Filter make	Camfil/Equivalent
Filter type	Flat	Filter type	Flange
Pressure Drop Calc	Dirty	Pressure Drop	330 Pa
Withdrawal	Side	Withdrawal	Side
Media	Cotton & Synthetic Fibre	Media	Synthetic Fibre
Efficiency	90% < Am	Efficiency	80 < Em < 90
Spare filter sets	None	Filter Face Area	4.8 Sq.m
Size Ref:	12x596x596x48 mm	Size Ref:	12x592x592x534 mm

Section A

Size Ref: 3x292x596x48 mm Size Ref: 3x287x592x534 mm

ACCESS DATA

Type/Position Hinged door/Left Width 0 mm

PLENUM SECTION

length 660 mm Access Hinged door

Section A

Extras: Bulkhead Appleby

EXHAUST FAN

Section A

Volume	12.500000	m3/s	External static pressure	300.00	Pa
Type	Plenum Fan		Total pressure	839.00	Pa
Fan Reference	ER10C-6DN.N7.1R-130533/0121		Motor Frame size	180M	
Fan ABS power	15.04		Motor power	18.50	kW
Fan Speed	1009.00	rpm	Motor speed	1400	rpm

Extras: 3P+Aux Enclosed Isolator 32A IP65

CARBON FILTER

Section A

Grade	Activated carbon	Withdrawal	Front
Filter make	Camfil/Equivalent	Filter type	CamCarb
Media	Carbon CM 05		
Pressure Drop Calc	Dirty		
Spare filter sets	None		
Size Ref:	12x610x610x455	mm	
Size Ref:	192 x cylinders	mm	

ACCESS DATA

Type/Position Hinged door/Left Width 0 mm

OUTLET SECTION

Section A

Height x Width x Depth	1780 x 2490 x 125	mm	Location	Ofair
Flange size	30.00	mm	Mounting	Internal
Edge seals	Yes		Blade type	Opposed
Additional opening type	125mm louvre GI		Alignment	Bottom
Additional opening H x W	2080 x 2790	mm	Damper Material	Aluminum
Additional opening finish				

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Activated Carbon Filters



Ed. Jan. 2003

Adsorption and Deodorisation

ADVANTAGES

- Semi-industrial applications
- High performance
- Easy maintenance
- Rapid bayonet fitting system fixing

😊 **Camfil hints!** To avoid clogging the activated carbon, it is vital to install filters upstream with a minimum efficiency of 85% OPACIMETRIC (F7) type HI-FLO, SFLO-W or OPAKFIL

□

CAMCARB Cylinders

Application: Adsorption of odours (deodorization), adsorption of VOC and low toxicity gases.

Type: Cylindrical activated carbon cartridge, rapid bayonet system fixing.

Temperature: 40°C maximum in continuous service.

Mounting system: CAMCARB support plate, FCBL-CC housing.

Cylinders: Zinc-plated steel sheet.

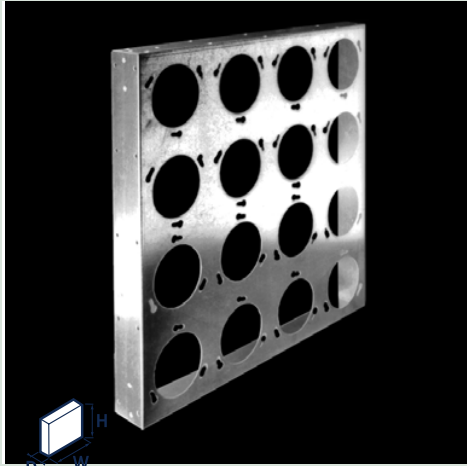
Carbon: Coconut shell carbon: CM 05.

Reference	Type	Model	Dimensions (WxHxD) mm	Carbon thickness	Carbon volume (litres)	Type of carbon	Air flow/pressure drop for contact time = 0.15 s m ³ /h/Pa	Unit weight kg	Unit volume m ³
571004	Camcarb	Cylinder 2000	145x145x455	16	2.9	CM 05	63/10	3.2	0.01
571007	Camcarb	Cylinder 2600	145x145x455	26	4.3	CM 05	94/40	4.0	0.01
571703	Camcarb	Cylinder 3500	145x145x605	26	5.7	CM 05	125/40	5.2	0.02

Other types of activated carbon available. Contact us. – Stainless steel version on request.

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Activated Carbon Filters



Ed. Jan. 2003

Adsorption and Deodorisation

ADVANTAGES

- Modular design adaptable for all types of installations
- Easy maintenance
- Rapid tightening system via bayonet fitting
- Quick and easy service

CAMCARB Mounting Frames

Application: Assembly of Camcarb activated carbon cylinders.

Type: Quick bayonet-mounted support plate for Camcarb cylinders.

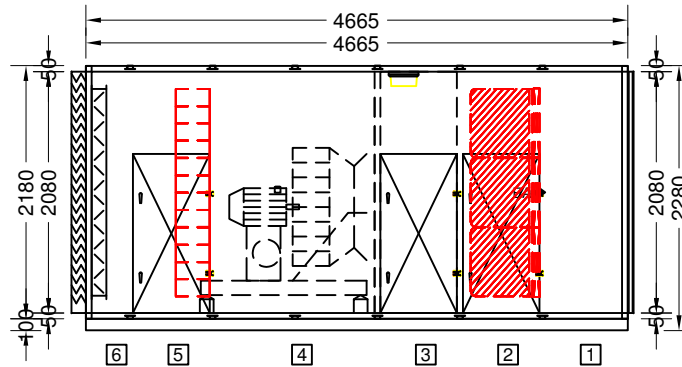
Design: Galvanised steel or stainless steel.

For filters: Camcarb activated carbon cylinders.

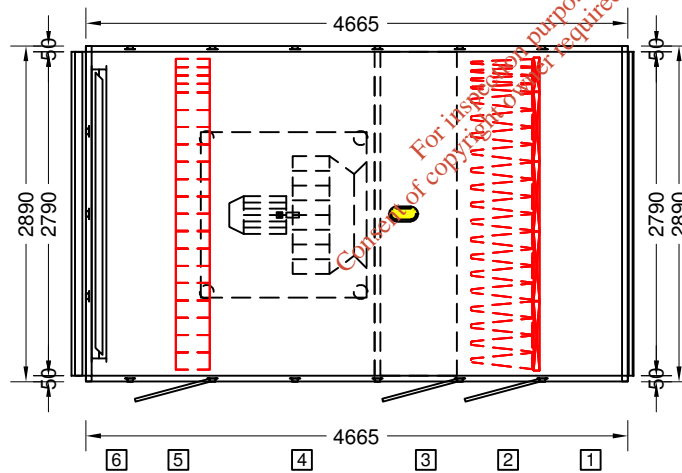
Mounting: Bayonet locking.

Reference	Type	Model	Overall dimensions (WxHxD) mm	Number of slots for cylinders	Unit weight kg	Unit volume m ³
59300301	Camcarb	Frame G8	305x610x70	8	3.0	0.02
59300601	Camcarb	Frame G16	610x610x70	16	4.8	0.04
16185400	Camcarb	Frame G8 SS	305x610x70	8	4.0	0.02
16185600	Camcarb	Frame G16 SS	610x610x70	16	5.0	0.04

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ELEVATION



PLAN DECK

Exhaust:
 Size: E-120
 Airflow: 12.50 m³/s
 E.S.P.: 300 Pa
 Unit Wgt: 2146.890 kg

Section A:

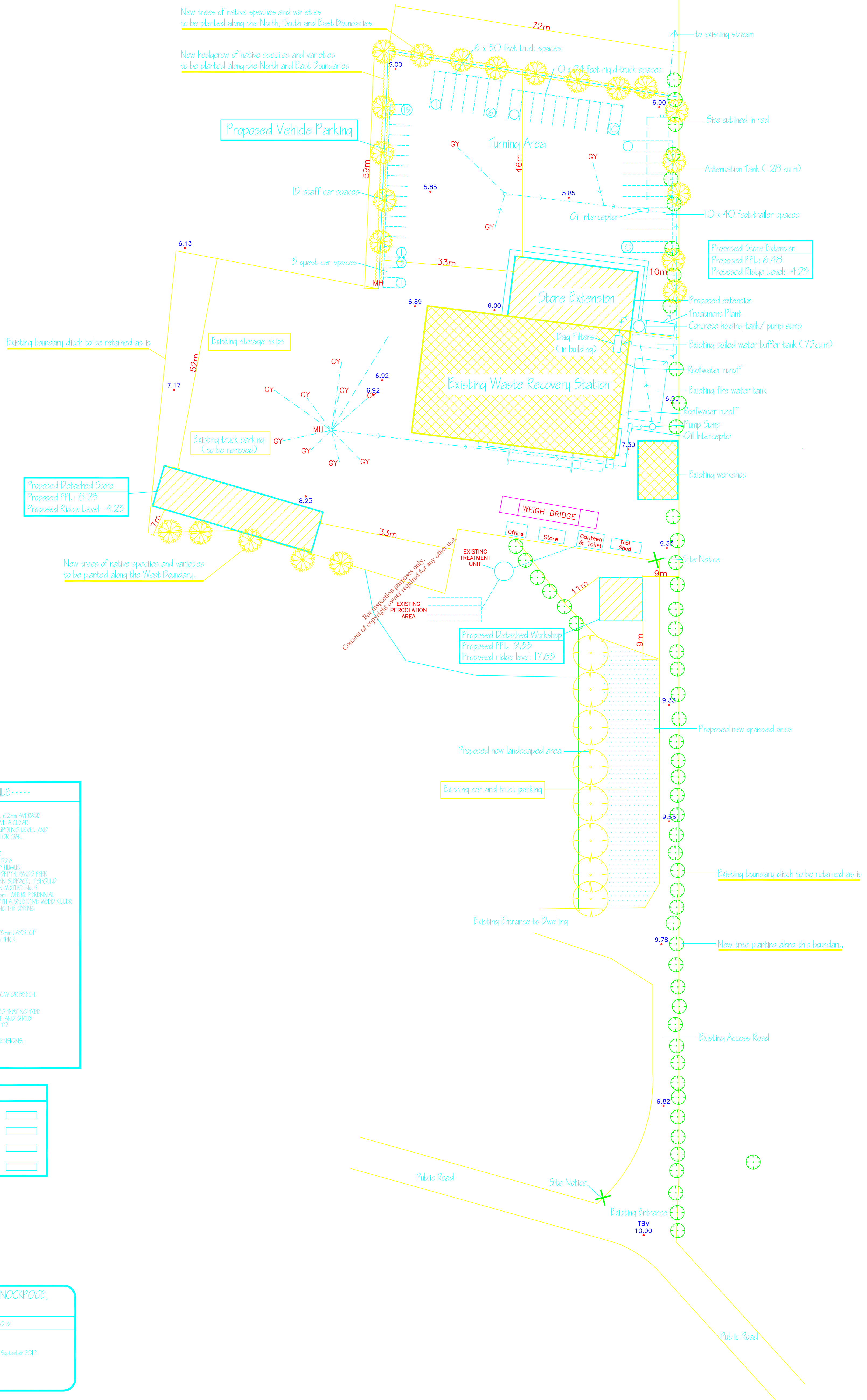
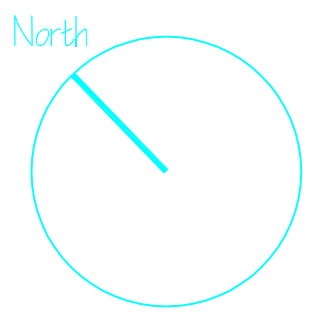
S.No	Module	Length(mm)
1	Inlet Section	710
2	Panel & Bag Filter	710
3	Plenum	710
4	Plenum Fan	1420
5	Carbon Filter	710
6	Outlet Section	355

Customer		Model	AHU No. 001	Not To Scale All Dimensions shown are in mm	This Drawing is property of AHS and should not be re-produced in any form		EDPAC International Carrigaline Industrial Park, Carrigaline, Co. Cork, Ireland Ph: +353 21 4372850 Fax: +353 21 4372756 Web:www.edpac.com	No.	Revision	Date	
Project	O Donoghue Waste	Air flow	NaN	m ³ /s	Selected	Initial		Date			
Location	Extract Filtration Sytem	Quantity	1	Nos.	Approved	Dwg No.					

APPENDIX V

SITE MAPS

*For inspection purposes only.
Consent of copyright owner required for any other use.*



-----LANDSCAPING SCHEDULE-----

SOILED AND TIES:
EACH TREE SHALL BE SECURED TO A STRUT STRAIGHT STAKE, 62mm AVERAGE DIA. BY 2 RUBBER TIES AND PAD STAKES, WHICH SHOULD HAVE A CLEAR HEIGHT OF 2m ABOVE GROUND LEVEL AND 75mm BELOW GROUND LEVEL AND SHOULD BE OF A CREOSOTED SOFTWOOD, NATURAL LARCH OR OAK.

GRASED AREAS:
GREEN AREAS TO BE PLANTED WITH GRASS SEEDS IN AREAS WHERE TOP SOIL HAS BEEN STRIPPED. IT MUST BE REPLACED TO A DEPTH OF AT LEAST 100mm WITH AN ADEQUATE AMOUNT OF HUMUS. IN ALL CASES THE TOP SOIL IS TO BE DIG AT LEAST 300mm DEPTH, GRADED FREE FROM STONES AND RUBBISH, ROLLED AND MADE UP TO EVEN SURFACE. IT SHOULD BE RAN AGAIN AND SHOWN WITH 'ROWNS DENSWARD' LAWN MIXTURE No. 4 OR OTHER APPROVED SEED WITH A RATE OF 0.020kg/m² sown. WHERE PERENNIAL WEEDS ARE PRESENT, THE TOP SOIL SHOULD BE TREATED WITH A SELECTIVE WEED KILLER BEFORE PLANTING BEGINS. SEED TO BE SOWN ONLY DURING THE SPRING (MARCH - EARLY MAY) AND AUTUMN (SEPT. - OCT.).

MULCHING:
ALL SHED BEDS AND TREES ARE TO BE MULCHED WITH A 75mm LAYER OF FORWARD MANURE OR BULKING COMPOST OR PEAT 25mm THICK.

SCREEN PLANTING:
SCREEN PLANTING TO BE LEVLANO AND SHEWARCH.

SHRUB PLANTING:
SHRUB PLANTING TO BE HYDRANGEA AND BERRBERIS TYPE.

TREE PLANTING ON EASTERN BOUNDARY:
TREE PLANTING TO BE ASH, ALDER, STEWARTIA, BIRCH, WILLOW OR BEECH.

PLANTING:
PLANTS ARE TO BE PLANTED AROUND THE SITE, SO DISPOSED THAT NO TREE ARE IN LINE UNLESS OTHERWISE INSTRUCTED FOR EACH TREE AND SHED TO BE PLANTED MORE THAN 1m APART, A SEPARATE HOLE IS TO BE TO BE EXCAVATED KEEPING TOP SOIL SEPARATE.
THE HOLES ARE TO BE NOT LESS THAN THE FOLLOWING DIMENSIONS:
FOR TREES: 1.0sqm X 0.75m DEEP.
FOR SHRUBS: 0.75sqm X 0.75m DEEP.

LEGEND	
Existing Buildings	
Proposed Store Extension	
Proposed Detached Store	
Proposed Detached Workshop	

PROPOSED DEVELOPMENT AT KNOCKPOGE, WATERFALL, Co. CORK.

CLIENT: Teal O' Donohue	PRG. NO. 9
SCALE: 1:500	
DRAWING: Site Layout Plan	
DRAWN BY: Pat O' Hullivan, Corbett, Waterfall, Co. Cork.	DATE: September 2012

PROPOSED DEVELOPMENT AT KNOCKPOGE, WATERFALL, Co. CORK.

CLIENT: Ted O' Donoghue

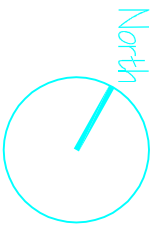
DRG. NO. 7

SCALE: 1:200

DRAWING: Plan of Extension to Existing Building

DATE: June 2012

DRAWN BY: Pat O' Halloran,
Engineer,
Corbally,
Waterfall, Co. Cork.



Ground Floor Plan of Main Building
Scale: 1:200

