



**ENVIRONMENTAL IMPACT STATEMENT
FOR THE PROPOSED EXTENSION TO THE
AES FACILITY
AT
KYLETALESHA, CO. LAOIS
Non-Technical Summary
VOLUME 1 OF 3**

ORIGINAL

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Abstract: This document summarises the main body of the EIS prepared for the proposed extension to the AES waste management facility at Kyletalesha, Co. Laois.

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PREAMBLE

The Proposed Development

The subject of this Environmental Impact Statement (EIS) is a proposed extension to the existing Advanced Environmental Solutions (AES) facility at Kyletalesha, Co. Laois. The existing facility consists of a waste transfer station and recycling centre operating under a waste licence from the Environmental Protection Agency (EPA) (Waste Licence Register No. 194-1). The applicant proposes to extend the existing waste management facility from 0.8 ha to 4.7 ha with an additional 1.5 ha acting as a screen/buffer.

The proposed development will include the extension of the existing waste transfer station to accommodate an area for the acceptance of small quantities of hazardous waste such as waste electrical and electronic equipment (WEEE). In addition, it is proposed to establish infrastructure for the treatment of mixed residual waste (i.e. grey bin) and source separated biodegradable waste (i.e. brown bin). These two wastes will be treated as separate waste streams using two separate process lines.

The facility currently accepts 40,000 tonnes per annum (tpa). It is intended that the extended facility will deal with up to 99,000 tonnes per annum. Internal infrastructure will be built to manage and process the 99,000 tonnes.

The Applicant

Advanced Environmental Solutions (Ireland) (AES) Ltd. was established in 1996 as Waste Recycling Ireland and commenced trading as AES Ltd in July 2001, through the acquisition of a number of waste facilities. The existing waste transfer station at Kyletalesha has been operating under a waste licence from the EPA since February 2005.

The Consultants

EIS and waste licence review application has been prepared by Fehily Timoney & Company (FTC). Odour Monitoring Ireland has carried out the odour & bioaerosol monitoring and modelling.

TrafficWise Ltd carried out the Traffic Impact Assessment. Abacus Surveys carried out the traffic monitoring survey in the area.

Keohane Geological and Environmental Consultancy completed the geology and hydrogeology sections.

1. INTRODUCTION

1.1. Waste Management Policy and Legislation

There are a numerous legislative and policy documents for the waste management sector which set targets for waste prevention, recycling, recovery, establishment etc which are relevant to the proposed extension of the AES facility. The main ones are summarised below:

Landfill Directive

The EU Landfill Directive (99/31/EC) seeks to reduce the amount of organic waste that is sent to landfill as follows:

- 75% of 1995 levels by 2010 (includes 4 year derogation)
- 50% of 1995 levels by 2013 (includes 4 year derogation)
- 35% of 1995 levels by 2016 (derogation available but not taken)

In order to implement the landfill directive, the Irish Government is drawing up policies and setting ambitious targets to divert biodegradable waste from landfill.

Waste Management: Changing Our Ways

Government policy in relation to waste management is set out in the policy statement entitled *Waste Management: Changing Our Ways* published by the Department of the Environment and Local Government (DoELG) in September 1998. The policy document outlines ambitious targets for waste management which includes:

- the diversion of 50% of overall household waste away from landfill
- a minimum 65% reduction in biodegradable wastes consigned to landfill
- the development of biological treatment facilities within Ireland.

National Strategy on Biodegradable Waste

The National Strategy on Biodegradable Waste was published in April 2006. It outlines the urgent need for waste infrastructure to treat and process biodegradable waste. The amount of biodegradable waste that needs to be diverted to meet Ireland's first target deadline (as outlined in the Landfill Directive) is estimated at 1.4 million tonnes.

AES wishes to provide infrastructure at Kyletalesha to treat source separated waste and to extract and treat the biodegradable fraction in municipal residual waste to divert residual biodegradable waste from landfill.

1.1.1. Midlands Waste Management Plan 2005 - 2010

The Plan has set:

- a recycling target of 46%
- thermal treatment target of 37%
- landfill disposal target of 17%.

The Plan's policy (Part 5) sets out specific objectives for the Region for the period 2005 – 2010 and in particular for the establishment of biological treatment. At present there are no biological treatment facilities within the Region. Specifically, the plan refers to Mechanical Biological Treatment (MBT) facilities for the treatment of mixed residual waste (i.e. grey bin). The proposed development will provide such a facility and will therefore contribute to the successful implementation of the Plan.

In addition, the proposed development will facilitate the collection, sorting and bulking of recyclable materials prior to onward shipment to appropriate recycling facilities. This development will contribute to a reduction in waste consigned to landfill and contribute to an increase in the recycling rates of municipal and industrial wastes within the Midlands Region.

1.2. **Development Policy**

1.2.1. Laois County Development Plan

The 2006 – 2012 County Development Plan outlines a number of policies which are relevant to the proposed development. In particular Chapter 7 – *Environmental Management* outlines the specific policies for waste management and the protection of the environment.

The Plan sets out the overall aim of environmental management as *“To ensure a good quality of life for the citizens of Laois through maintaining and improving wastewater treatment and water supplies and to minimise the adverse impacts of development on the environment through policies on the management of wastes and emissions”*.

The extension of the AES facility will reduce the County's reliance on landfill, thus minimising the impacts on the environment as well as producing a useful product for reuse for landscaping applications on infrastructural projects, for parks maintenance, as a soil conditioner or for capping landfills.

1.3. Alternatives to the Proposed Development

Alternative sites, waste treatment techniques, and facility designs were considered as alternatives to the proposed development. The various waste treatment techniques considered included:

- vermi-composting
- ethanol production
- gasification
- pyrolysis
- windrow composting
- aerated static pile composting
- tunnel composting systems

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1. The Site

The development site is an extension to the existing AES waste transfer station at Kyletalesha. Its total area is 6.2 ha but 1.4 ha will be retained in its current state (bog and peatland) to enhance both screening and biological diversity in what will be referred to as the buffer zone. Thus the area being developed is ca. 4.8 ha. The site location is illustrated on Figure 1.1.

There are a number of commercial/infrastructural facilities located in the vicinity of the site. These include two knackeries to the south-west, a non-hazardous landfill (Kyletalesha Landfill) to the west with a coniferous plantation across the road to the southeast. .

A drain leading to the Triogue River divides the waste transfer station from the proposed extension. It is proposed to culvert this drain in order to join the land banks.

Vehicular access to the site is achieved via a local road (L-2117-O) which runs along the south eastern boundary site.

2.2. Description of the Development

The transfer station accepts 40,000 tonnes per annum of household, commercial, industrial and construction and demolition (C&D) wastes.

It is intended that the proposed facility will deal with up to 99,000 tonnes per annum. This will include an extension to the existing waste transfer station building for the temporary storage of hazardous waste i.e. waste electrical and electronic (WEEE).

There is a critical need to provide infrastructure for the treatment of biodegradable waste diverted from landfill in accordance with EU and national requirements. AES proposes to extend the existing transfer facility with provision of infrastructure to treat biodegradable waste. It is intended to accept both residual municipal waste and source separated waste and to process the streams separately at the facility.

Source separated biodegradable waste will be treated in a Bedminster Digester followed by composting or by anaerobic digestion. Mechanical biological treatment, using a second Bedminster Digester, will be used to separate the biodegradable fraction from the residual municipal waste. The resulting fraction will then be processed by composting or by anaerobic digestion. The actual process to be undertaken will be dependant on the commercial viability of anaerobic digestion.

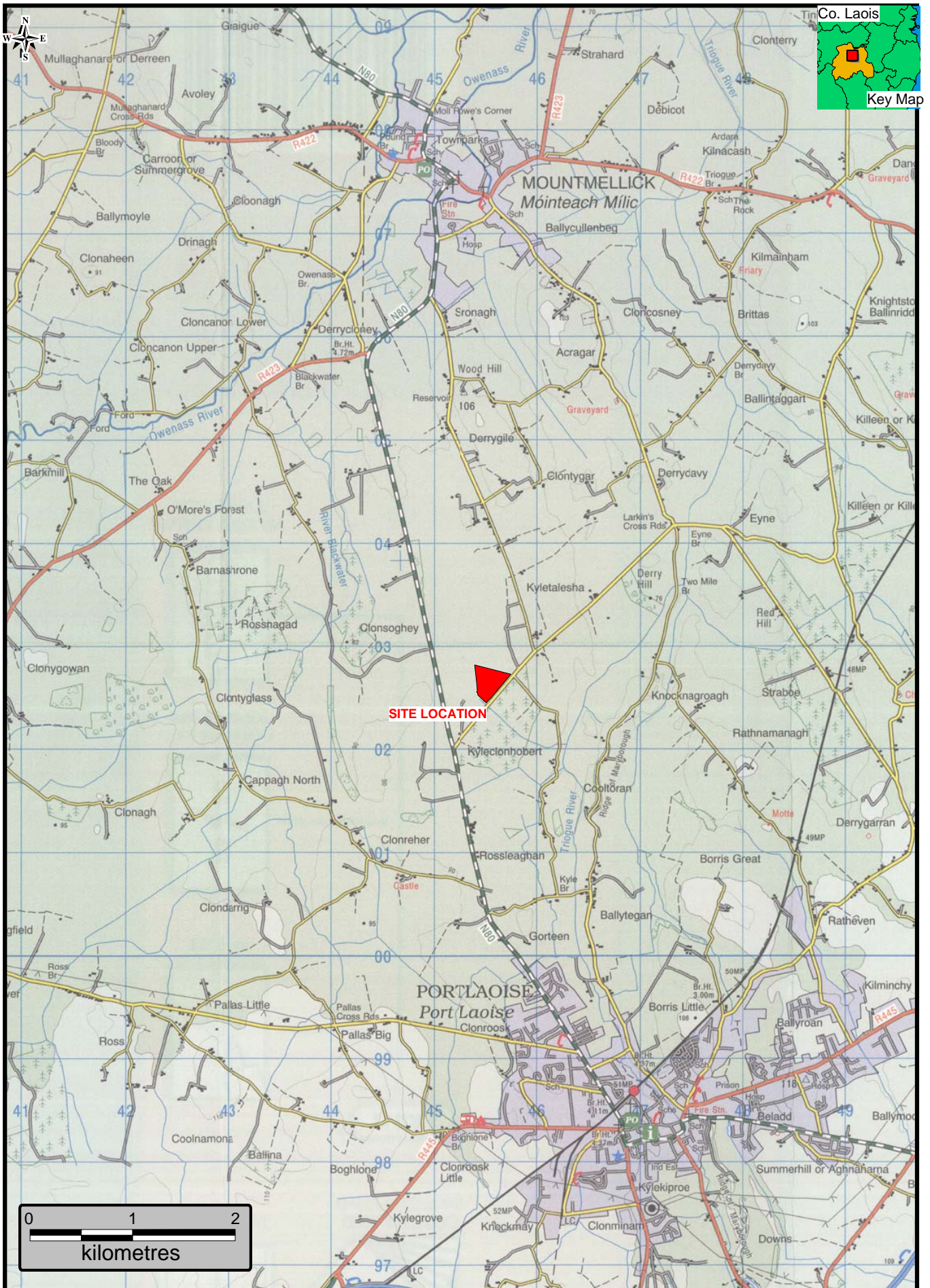
A Bedminster Digester is essentially a long, almost-horizontal tube that turns slowly as waste is fed into the upper end. The conditions within the tube are such that rapid biological breakdown of the biodegradable fraction enables screening and separation of the components of the waste immediately after the Bedminster Digester process.

2.3. Existing Site Infrastructure

The site is accessed from the local road the L-2117-0. The entrance to the waste transfer station is some 600 m from the national secondary route – the N80. There are no internal site roads. The entire site is finished with a hardstanding area that consists of concrete foundation on piles.

The existing waste transfer station comprises of the following elements:

- weighbridge & weighbridge hut
- portacabins for site office, a canteen storage and toilet facilities. An additional portacabin is located adjacent to the weighbridge.
- one shredder
- one loading shovel
- two track mounted excavators
- a bunded tank for fuel storage
- a waste quarantine and inspection area
- a *Puraflo* wastewater treatment unit & percolation area



Site Location

Figure 1.1

2.4. The Proposed Development

The proposed extension will increase the annual throughput tonnage from 40,000 tpa (as per the existing waste licence) to 99,000 tpa as outlined in Table 2.1.

Table 2.1: Types and Quantities of Waste

Existing WL		Proposed WL	
Waste Type	Max Tonnes per Annum	Waste Type	Max Tonnes Per Annum
Household, Commercial & C&D	38,990	Household, Commercial & Industrial	80,000
Non-Hazardous Industrial Sludges	1,000	Non-Hazardous Industrial Sludges	3,000
Hazardous Waste	10	Hazardous Waste	5,000
		C & D	5,000
		Sewage Sludge	6,000
Total	40,000	Total	99,000

During facility construction it will be necessary to raise the existing ground levels up to formation level. It is estimated that approximately 100,000 tonnes of infill will be required.

The bulk of the 80,000 tonnes of household, commercial and industrial waste will consist of mixed residual waste from AES customers. The facility will be able to process 40,000 tonnes of source separated organic waste (brown bin) if required. Both of these waste streams will be handled and treated as separate streams.

Non-hazardous industrial sludges and sewage sludges will be accepted at the facility. These wastes will be mixed with either the mixed residual waste and/or the source separated organic waste.

Waste acceptance hours and hours of operation

Waste will be accepted at the Facility Monday to Friday inclusive between the hours of 07.00 to 20.00 and on Saturdays 07.00 to 18.00. Waste handling (sorting, mixing etc) will be from the hours of 07.00 to 20.00 hours Monday to Friday inclusive and 07.00 to 18.00 on Saturdays. The plant for the treatment of biodegradable waste will be operated continuously.

Only waste from permitted haulers will be accepted at the site. There will be no acceptance of waste delivered by individual householders.

2.4.1. Plant & Waste Processing

The plant and process of treating source separated waste and the extraction and treatment of biodegradable waste is described in the sections below. The infrastructure proposed, is described in the following sections and is as indicated on Figures 2.1 and 2.2.

The Waste Reception Building

During normal weekday operation, waste will be tipped onto the floor. Source separated waste, residual municipal solid waste (MSW) and sludges will each have separate dedicated areas within the building. Any oversize items will be manually removed prior to the waste being loaded onto dedicated conveyors for each waste stream. The waste will pass through bag splitters, as well as ferrous and non-ferrous separators prior to loading into the Bedminster Digesters. The facility will accept deliveries over 6 days per week.

The waste reception building will be maintained under negative air pressure and the delivery entrances will be provided with automatic roller shutter doors.

Bedminster Digester

The core of the Bedminster process is the 'Eweson Digester', a revolving compartmentalised aerobic drum that accelerates the natural process of biological decomposition. Two digesters of approximately 5.4 m diameter and 70 m in length will be provided, with one dedicated to the processing of source separated waste and the other for residual municipal waste. Temperature and moisture are controlled to encourage a dense and varied microbial population. All of the waste in the Digester is constantly turned and aerated to ensure total waste sanitation. The waste will reside in the digester for three days.

Within three days, the organic fraction will be transformed into a new product (rough compost). The rough compost will be conveyed to a trommel screen to remove large residues, which will go for further recycling or disposal to an appropriate facility. The cleaned rough compost will then be transferred either to the aeration hall for maturation or to the anaerobic digester. Both processes are described below but only one will be implemented.

Compost Process - Maturation Area

For approximately three weeks, the product will undergo controlled secondary composting and curing in the aeration hall before final screening. The material will be turned frequently, ensuring that aerobic conditions are maintained within the enclosed windrows. The temperature and moisture content levels of the composting material will be monitored and adjusted to obtain optimum biological activity.

The floor of the building will be divided into bays and fitted with ventilation pipes so that air can be forced up or down through the compost heaps. Air will be supplied from an air blower gallery running the entire length of the building. The building will be 110 m long by 50 m wide and, its roof will be approximately 10 m high.

A dedicated area will be provided for the processing of source separated waste. As with the waste reception building, the maturation area will be maintained under negative air pressure and will be provided with automatic roller doors.

The process requires water to keep the conditions at an optimum. Any water generated during the composting process will be re-circulated through the compost. Therefore, generally, no wastewater will be treated or discharged.

The air from the maturation hall will be conveyed to an air treatment system comprising a cooler/condenser, wet scrubber (to remove dust particles) and a biofilter which is located adjacent to the building.

The purpose of the cooler/condenser is to cool the process air to a maximum temperature level of 35°C, to de-dust the air and also to humidify the air to almost maximum saturation. These conditions assist in extending the lifetime of the biofilter.

Compost Process – Storage Area

This will comprise sheds separated into bay approximately 6 m wide to accommodate storage of final product. Air will be forced through the compost piles to prevent odour emissions.

Compost Process – Biofilter

A biofilter is a container of biological matter in a support medium (e.g. woodchip or peat) through which air is forced. The biodegradable contaminants in the air will be broken down by biological action within the filter. The biofilters will comprise of four discrete cells approximately 1 - 2 m in depth. The total area of the biofilters will be approximately 2,400 m². Wood chips will be used in the proposed filters. The air from the building will be passed through the biofilter, evenly distributed into each of the cells by a manifold discharge system underneath the biofilters. The biofilters will be monitored to ensure optimum conditions are maintained.

Anaerobic Digestion Process

If the preferred process is anaerobic digestion rather than compost maturation of the extracted biodegradable fraction, the proposed layout of the process will be as detailed in Figure 2.3. It is proposed to use a reactor, with a height of approximately 10 m, to minimise the visual impact on the surrounding environment.

Anaerobic digestion (AD) transforms the carbon in the waste, into carbon dioxide (CO₂) and methane (CH₄) which can be used to produce energy (through a gas engine or turbine and possibly a boiler).

Excess electricity can be sold to national grid. Since the gas is not released directly into the atmosphere and the carbon dioxide comes from an organic source with a short carbon cycle, biogas does not contribute to increasing atmospheric carbon dioxide concentrations.

The second by-product is a liquid that is rich in nutrients and can be an excellent fertilizer or soil conditioner depending on the quality of the material being digested.

The third by-product is a stable organic material comprised largely of lignin and chitin, and resembles domestic compost and can be used as a soil conditioner.

Processing time within the reactor can vary between 15 and 30 days depending on parameters such as feedstock, temperature, etc.

Any additional wastewater generated at the site will be tankered off-site to an approved wastewater treatment plant.

The digestate (solid by-product) will be stored on an enclosed slab operating under negative aeration to prevent odour emissions.

2.4.2. Ancillary Site Infrastructure

The entire site will be fenced with green chainlink fencing on steel posts. The main gate will be similar to the existing gate. The entire site will be under constant surveillance by a CCTV system.

The site will fall generally in a northeast/southwest direction. Drainage will be to two oil interceptors and 'aquacell' units ultimately discharging to the stream that runs outside the eastern perimeter of the existing site.

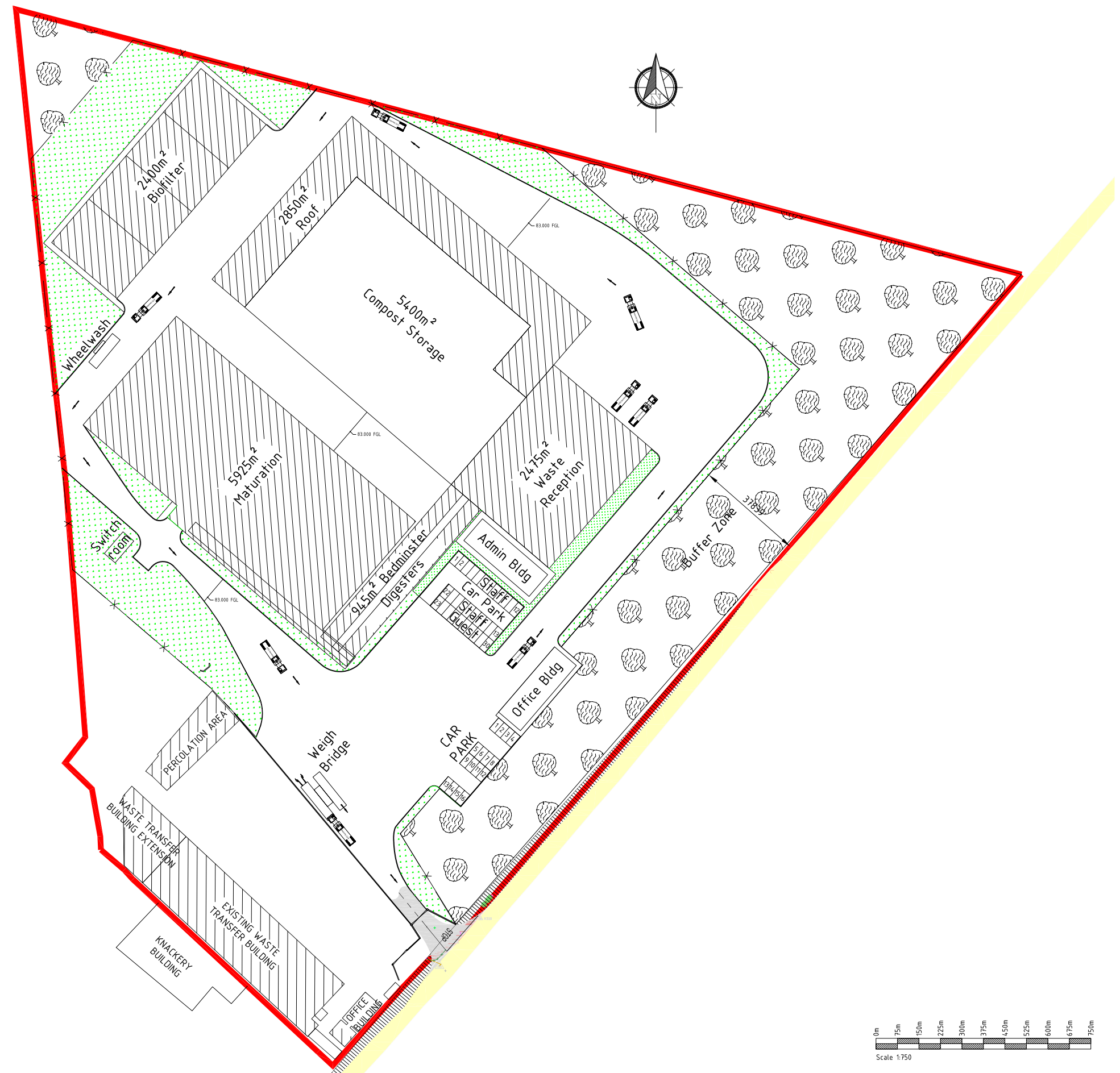
Other infrastructure:

- administration building and associated car parking
- office block & associated car parking
- a 15 m length weighbridge
- drive-through combination wheel bath/rumble cleaner
- laboratory facilities with the administration building
- waste Inspection and quarantine areas within the waste reception building
- office block and associated car parking
- ESB substation
- waste water treatment plant and raised percolation area

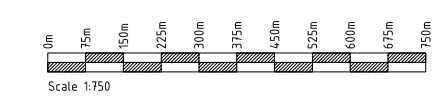
2.5. Environmental Monitoring Programme

AES intends to implement a comprehensive environmental monitoring programme on site to monitor and control all elements of the process and emissions. This programme will be dependent on the conditions of the Waste Licence granted by the EPA. At a minimum the Applicant proposes the establishment of the monitoring locations shown on Figure 2.7. Further details on monitoring are provided in Section 2 of the EIS

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A					28.07.06	ISSUE FOR PLANNING

Name of Client
AES

Name of Job
EXTENSION TO
KYLETALESHA SITE

Title of Drawing
PROPOSED SITE
LAYOUT PLAN
AEROBIC COMPOSTING PROCESS

Scales Used
1:750 A1 1:1500 A3

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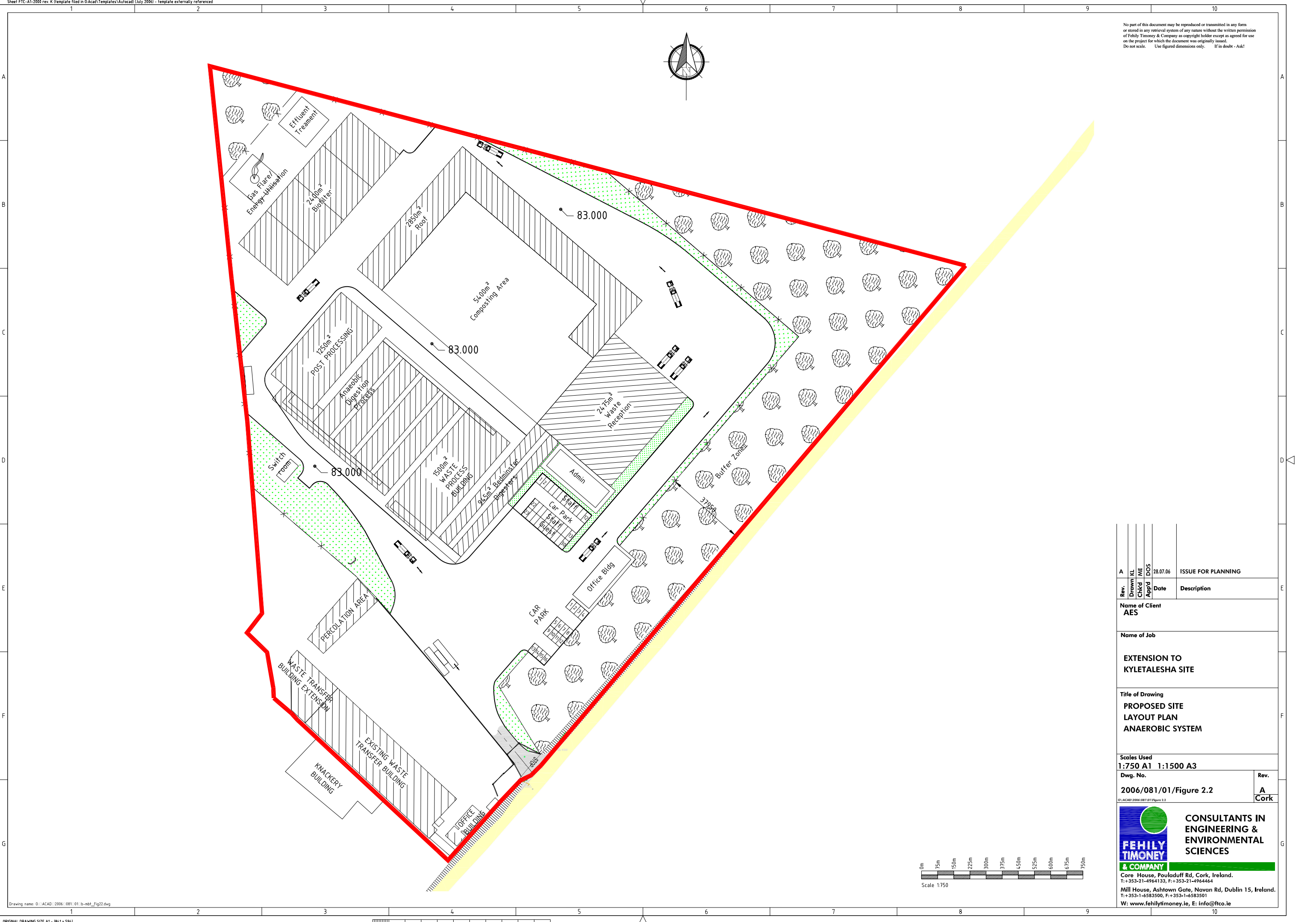
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NATURAL SCALE
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A	KL	JME	DOS	28.07.06	ISSUE FOR PLANNING

Name of Client
AES

Name of Job
EXTENSION TO KYLETALESHA SITE

Title of Drawing
PROPOSED SITE LAYOUT PLAN ANAEROBIC SYSTEM

Scales Used
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Dwg. No.
2006/081/01/Figure 2.2

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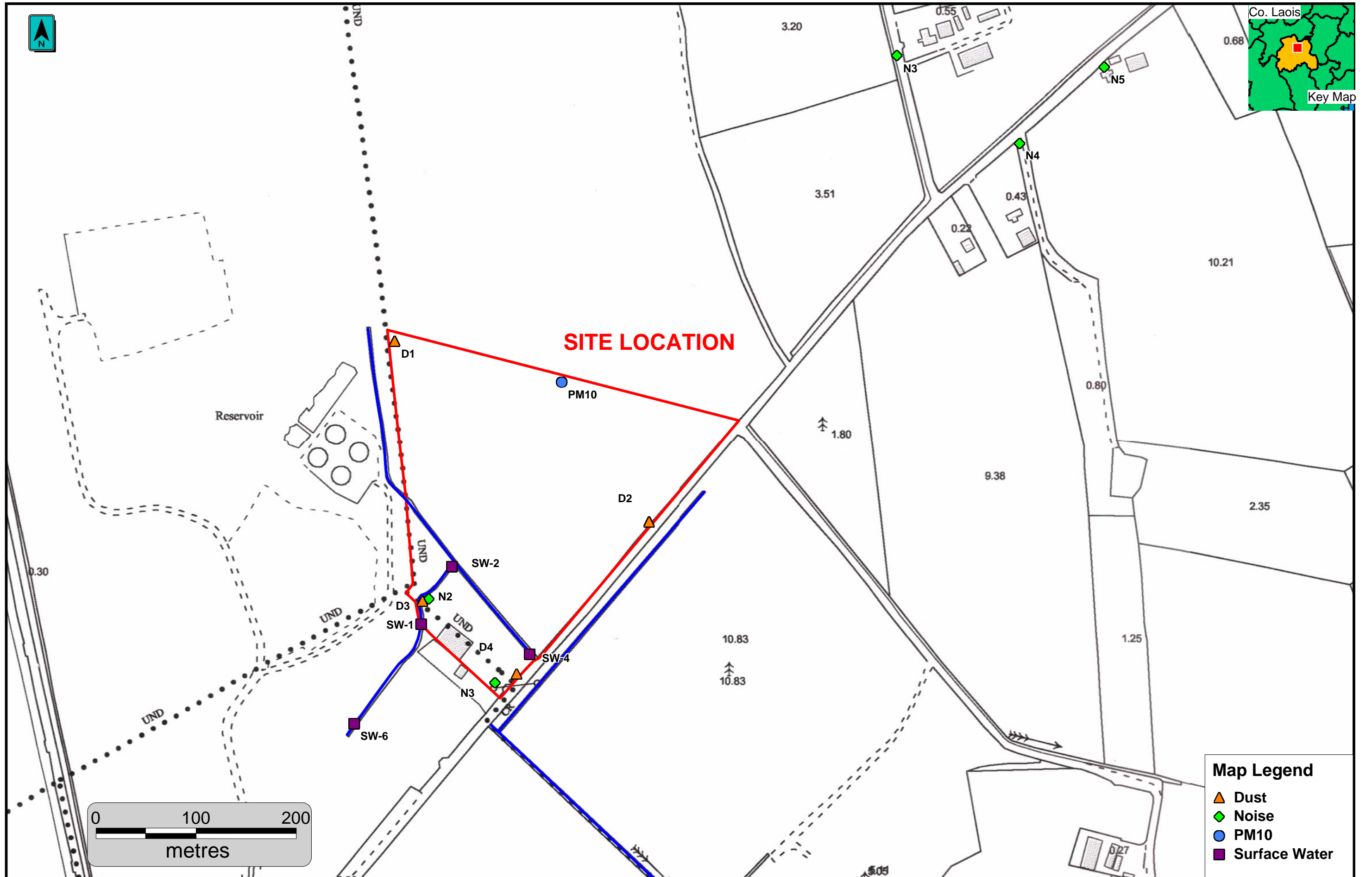
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3. ENVIRONMENTAL IMPACTS

3.1. Human Beings

Population density in the vicinity of the site is low. There are 10 houses located within 1 km of the site boundary. Of these, however, there are only 2 houses within 500 m of the site boundary. These are all located to the northwest of the site.

The main areas examined in this section with respect to the potential effects of the proposed development on humans are:

- noise
- traffic
- health and safety
- Air and climate

3.1.1. Noise

Noise measurements confirmed that both traffic and the existing operations at the transfer station and neighbouring facilities determine the background situation.

The principal source of noise from the proposed extension will be the air handling fans but the predicted emissions were modelled and the increase in noise will be imperceptible.

Short-term noise will arise during construction but that will be confined to day-time.

3.1.2. Traffic

It is estimated that the proposed extension to the AES facility will generate an additional 48 vehicular trips per day, comprised of an estimated 29 No. HGV trips and 19 No. light vehicle trips. The results of the analyses carried out show that the likely increase in traffic and the likely impact of such traffic on the capacity and operation of the receiving roads network would not be significant.

The construction phase of the development will generate traffic on the local road network. The importation of 100,000 m³ of infill material will generate a total of 27 trips per day.

Several mitigation measures have been proposed, the principle of which is to effect an improvement in road safety on the receiving roads environment. The proposed remedial measures will benefit not only the proposed development but all local road users. Proposed remedial measures include resurfacing a portion of the local country road between the landfill access and the facility access together with improving visibility sightline criteria at both the proposed site entrance and the existing public road junction of the L-2117-0 and the N80.

Given the modest increases in traffic associated with the current proposal, the proposed remedial measures are on balance considered likely to result in a net improvement in general road conditions on the local road network in the vicinity of the site. In addition the measures proposed are considered likely to effect a significant reduction in potential traffic hazard at the existing junction of the L-2117-0 and the N80.

3.1.3. Health and Safety

Health and safety relates primarily to the builders and operators of the facility. Security reduces the risk to the health and safety of the general public. The extended facility will be designed and constructed in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2001, and operated in accordance with relevant health and safety legislation and best practice guidelines.

Health and Safety practices will be reviewed on an annual basis to ensure that they are in line with best practice in this industrial sector.

It is not anticipated that the operation of the facility will present any danger to the public. Access to the site will be restricted to employees, hauliers and pre-arranged visitors. Procedures will be put in place to ensure the health and safety of all persons entering the site. All processes will be continuously monitored and recorded.

3.2. Air and Climate

3.2.1. Air

The existing ambient air quality is compromised by odour arising primarily from the two knackeries and the nearby landfill. The proposal incorporates state of the art odour management (previously described) to mitigate the potential for odour. Because the existence of the facility will reduce the need to landfill biodegradable waste, the odour-generation potential of the nearby landfill will reduce in time giving a net positive impact.

3.2.2. Climate

As the proposed development will greatly reduce the volume of biodegradable waste being landfilled and in so doing, will help to reduce the volumes of methane formed within the landfills, the development will have a direct positive impact on the climate. Therefore, no mitigation measures are required.

3.3. **Geology, Hydrogeology and Hydrology**

3.3.1. Geology and Hydrogeology

Based on geotechnical analysis of site investigation data, it is estimated that approximately 100,000 m³ of inert infill will be imported to raise the formation levels of the proposed extension. No material will be excavated from the site.

At present Laois County Council monitors groundwater at a number of locations within the vicinity of the site which includes a monitoring well within the proposed extension area. Results of monitoring indicate that the groundwater quality is generally good.

The water supply to the site is from a mains water supply which is currently being upgraded to meet increasing demand in the Portlaoise - Mountmellick area.

3.3.2. Hydrology

The extended development will generate surface water, leachate and wastewater. The collection, treatment and disposal systems for these have been carefully designed to minimise the impact on the surrounding environment. Clean surface water run-off will discharge to the two surface water holding structures with oil interceptor prior to discharging to the nearby stream. Wastewater will be collected, treated and discharged on site. Leachate (predicted to be small in volume) will be collected and transported off-site for treatment and disposal at a suitable wastewater treatment plant.

The proposed development will not have a significant impact on the water quality, hydrology and hydrogeology of the surrounding environment.

3.4. **Cultural Heritage**

There are no known archaeological features, architectural, or other features of cultural heritage, within the site boundary.

Given the absence of identifiable archaeological monuments on the site there are no direct mitigation measures that need to be put into place.

Avoidance of known archaeology is the favoured option where possible. As there are no known archaeological features within the site boundary and it is not proposed that

the site will be excavated, no mitigation measures are required for features of cultural heritage located outside of the site boundary.

3.5. Ecology

The areas that will be directly affected by the construction of the facility are not unique ecologically. The scrub and drained bog do not contain a particularly diverse or important flora or fauna community. The retention of a buffer area and the application of mitigating measures will minimise the footprint of the potential negative impacts on the local ecology.

Much of the area in the vicinity of the proposed development is degraded bog. The ecological community is relatively species poor and has very few taxa that are considered of special conservation importance.

3.6. Landscape

The lands in the surrounding area are generally flat and the site itself gently slopes northeast.

Due to the relatively level nature of much of the surrounding landscape, views of the site from the surrounding landscape are generally restricted. Views from the N80 are blocked by the two knackeries, while views from the local road are generally restricted by dense vegetation. A berm has been constructed around the landfill area which restricts views from some of the landfill area.

As the local topography is consistency flat, local screening vegetation is dense and there is screening from adjacent activities, there is unlikely to be a significant visual impact on the surrounding landscape. The tops of the proposed buildings (10 m high) will be visible from the nearest houses to the north and northwest as well as along the N80.

It is proposed to retain a buffer zone along the local road where existing dense vegetation provides screening for road users. In addition, the majority of the mature trees and vegetation along the north western boundary will also be retained.

3.7. Material Assets

The surrounding land use is a mixture of agricultural, forestry, bogland (with peat extraction), residential and commercial/infrastructural. The commercial/infrastructural element consists of the waste transfer station, a non-hazardous landfill and two knackeries. The predominant land use in the wider area is pasture and forestry. There is a woodland area to the south of the site. There are ten houses within 1 km of the site boundary. The closet house to the facility is some 340 m away from the facility boundary.

The site is not contained within any of the following designations:

- National Heritage Areas (NHA)
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

The proposed development will not have a significant impact on any of the existing land uses. Although the development of the proposed waste infrastructure will result in the loss of peatlands, the bog has been largely dewatered and degraded. There is no evidence of recent turbary. Areas of dense vegetation exist (and will be maintained) along the local road and northwest boundary of the site.

The impact of the traffic on the surrounding area will not be significant based on the traffic volumes currently using the surrounding roads. It is proposed that the surface of the road from the junction with the N80 to the site entrance be upgraded.

The proposed development will have a positive impact for the Midlands as the land will be used to extend a waste management facility which will contribute greatly to the waste management strategy for the Region and help to maximise the recovery and recycling of materials which previously were landfilled. This development will be operated in accordance with best available techniques and to all environmental standards set out by the EPA.

3.8. Interactive Impacts and Conclusions

The proposed extension to the AES facility at Kyletalesha will treat biodegradable wastes, thus reducing, in particular, the Midland Region's dependency on landfill. The process will result in a useful end-product.

The previous sections of the EIS deal with any potential impacts that may occur as a result of the proposed development. Where these impacts could be negative, specific mitigation measures are put forward to minimise or neutralise these impacts on the receiving environment. It is not expected that there will be any significant impact from the interactions as a result of the proposed extension to the AES site.