

- The Huntstown Bioenergy Plant

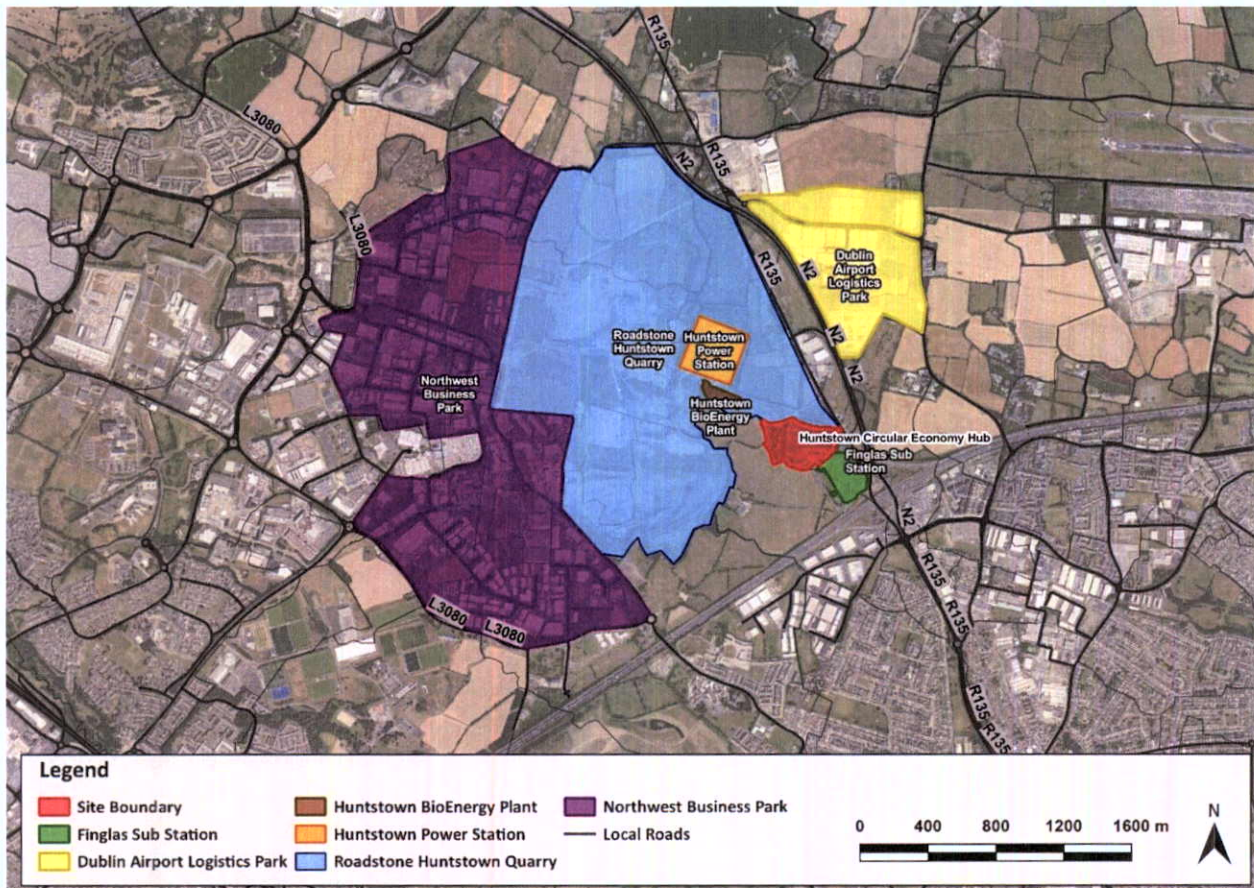


Figure 9-4 Site Setting

Installations such as the Finglas sub-station and the Dublin Airport Logistics Park are not associated with emissions to air that would affect baseline levels that are typical of Zone A baseline levels.

Emissions from installations such as the Roadstone Huntstown Quarry, the Huntstown Power Station and the Huntstown Bioenergy Plant were considered as part of the baseline for the study area as they are likely to elevate air contaminants above levels that are typical of Zone A baseline levels in close proximity to these installations and the proposed development site.

The baseline levels that are typical of Zone A were determined from three reports:

- Air Quality in Ireland 2019 – Indicators of Air Quality (EPA, 2020a)
- Air Quality in Ireland 2020 – Indicators of Air Quality (EPA, 2021)
- Air Quality in Ireland 2021 – Indicators of Air Quality (EPA, 2022)

Background air quality data observed at Zone A ambient air monitoring sites was used including data from:

- Swords, Dublin Airport and Dublin Port to represent ambient levels of  $\text{NO}_2$  at the site
- Blanchardstown, Dublin Airport, Dublin Port and Finglas to represent ambient levels of  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  at the site
- Winetavern St, Rathmines, Tallaght or Ringsend to represent ambient levels of  $\text{SO}_2$  at the site

- Winetavern St, Rathmines, Tallaght or Ringsend to represent ambient levels of CO at the site.

The closest NO<sub>2</sub> monitoring station to the site is at Blanchardstown; however, it is located adjacent to the busy roadway intersection that connects the M50 to the N3. The observed levels of NO<sub>2</sub> at Blanchardstown are likely to overestimate baseline levels of NO<sub>2</sub> at the proposed development site due to its proximity to this intersection. Baseline levels of NO<sub>2</sub> from Zone A locations that are representative of the site were taken from Dublin Airport (monitoring location approximately 6 km northeast of the site), Swords (monitoring location approximately 8 km northeast of the site) and Dublin Port (monitoring location is in a heavily industrialised port location that is considered representative of the industrial nature of the site.)

In relation to PM<sub>10</sub> and PM<sub>2.5</sub>, the monitoring location at Finglas is 1.9 km from the site and is surrounded by residential areas and roads typical of a suburban town centre. The air quality at this location is influenced by emissions from road traffic and residential heating and is considered to be a conservative representation of background air quality at the proposed development site.

The monitoring location at Blanchardstown is 4.1 km from the site. It is surrounded by residential areas of Blanchardstown to the southwest and it is within 10 m of a major road that forms part of the M50-M3 Motorway Interchange.

The monitoring location at Dublin Port provides a representative indication of PM<sub>2.5</sub> levels in an industrial location of Zone A. Considering the proximity of the Blanchardstown and Finglas monitoring locations to residential areas and a motorway interchange and the proximity of the Dublin Port monitoring location to industrial sources of emissions the use of worst case data collected at these locations is considered to provide a conservative characterisation of baseline PM<sub>10</sub> and PM<sub>2.5</sub> in the study area.

In relation to SO<sub>2</sub> and CO, the highest observed concentrations of these air contaminants at Winetavern St, Rathmines, Tallaght or Ringsend over a three-year period provide a conservative indication of baseline levels of these air contaminants in the study area as local emissions will not result in ground level concentrations that exceed these observed worst-case levels.

Air quality in the study would also be influenced by the nearby emission sources at the Huntstown BioEnergy Plant and the Huntstown Power station. Katestone conducted a review of the Environmental Impact Statement (Huntstown Bioenergy EIS) submitted as part of the EPA licence application for the Huntstown Bioenergy Plant (SLR, 2013) and the air quality assessment submitted to EPA in support of environmental permit application for the Huntstown Temporary Emergency Power Plant (Mott McDonald, 2022), referred to here as the Huntstown Power Plant Report.

The Huntstown Power Plant Report indicates that the fuel is natural gas. Consequently, the Huntstown Power Plant will:

- Likely to have significant effect on baseline levels of NO<sub>2</sub> in the study area.
- Be unlikely to have significant effects on baseline levels of:
  - SO<sub>2</sub> which is likely to result from the low sulphur content of natural gas
  - PM<sub>10</sub> or PM<sub>2.5</sub> as emissions of these air contaminants is low from the combustion of natural gas
  - CO above ambient levels due to the low levels of impact of CO in relation to the guidance level for impacts

The Huntstown Power Plant Report includes a number of modelling scenarios. Scenario 3 assessed the impacts of the Proposed Huntstown Temporary Emergency Power Plant in combination with the Huntstown Power Station and the Huntstown BioEnergy Plant. The Scenario 3 modelling assessment

shows that emissions of NO<sub>x</sub> from these facilities results in a combined worst case impact of NO<sub>2</sub> in the modelling domain of:

- 64.3 µg/m<sup>3</sup> as a 1-hour average 99.79<sup>th</sup> percentile concentration on the modelling domain
- 7.1 µg/m<sup>3</sup> as an annual average concentration on the modelling domain

These predicted concentrations were added to the typical worst case Zone A concentrations of NO<sub>2</sub> and provide a highly conservative estimate of baseline levels of NO<sub>2</sub> in the study area.

The long-term data presented in Table 9-18 indicates that the level of air contaminants reported are below the limit values specified in the *Air Quality Standards Regulations 2011* (S.I. No. 180 / 2011), as amended. The data is representative of the baseline air quality at the site and indicates that the baseline air quality in the vicinity of the site is good.

In relation to PM<sub>10</sub>, the *Air Quality Standards Regulations 2011* states that the 50 µg/m<sup>3</sup> daily limit value may not be breached more than 35 times in a calendar year. The EPA does not apply a daily limit that can be adopted as a baseline for modelled ground-level concentrations of PM<sub>10</sub>. UK DEFRA and EPA advise that the 36<sup>th</sup> high 24-hour mean process contribution can be added to the annual mean background PM<sub>10</sub> to determine the cumulative daily impacts of PM<sub>10</sub> from localised sources with background.

**Table 9-18**

Pollutant	Averaging period	Baseline Ambient Value (µg/m <sup>3</sup> )	Source
Nitrogen dioxide	1-hour	185.8 <sup>a</sup>	Maximum 1-hour average concentration measured at Swords, Dublin Airport or Dublin Port between 2019 and 2021 in combination with localised ground level concentrations resulting from emissions from localised industrial installations
	Annual	34 <sup>b</sup>	Maximum 1-hour average concentration measured at Swords, Dublin Airport or Dublin Port between 2019 and 2021 in combination with localised ground level concentrations resulting from emissions from localised industrial installations
PM <sub>10</sub>	24-hour	20.2	Maximum from Blanchardstown, Finglas, Dublin Port or Dublin Airport between 2019 and 2021
	Annual	20.1	Maximum from Blanchardstown, Finglas, Dublin Port or Dublin Airport between 2019 and 2021
PM <sub>2.5</sub>	Annual	9.1	Maximum from Blanchardstown, Finglas, Dublin Port or Dublin Airport between 2019 and 2021
Sulphur Dioxide	1-hour	65	Maximum from Winetavern St, Rathmines, Tallaght or Ringsend between 2019 and 2021
	24-hour	45	Maximum from Winetavern St, Rathmines, Tallaght or Ringsend between 2019 and 2021
	Annual	5.4	Maximum from Winetavern St, Rathmines, Tallaght or Ringsend between 2019 and 2021
Carbon Monoxide	8-hour Rolling	3,699	Maximum from Winetavern St between 2019 and 2021

<sup>a</sup> worst case ambient background based on observations from the EPA Air Monitoring Network of 121.5 µg/m<sup>3</sup> in combination with the worst-case impact of Scenario 3 of the Huntstown Power Plant Report (Mott MacDonald, 2022) of 64.3 µg/m<sup>3</sup>

<sup>b</sup> A worst case ambient background based on observations from the EPA Air Monitoring Network of 26.9 µg/m<sup>3</sup> in combination with the worst-case impact of Scenario 3 of the Huntstown Power Plant Report (Mott MacDonald, 2022) of 7.1 µg/m<sup>3</sup>

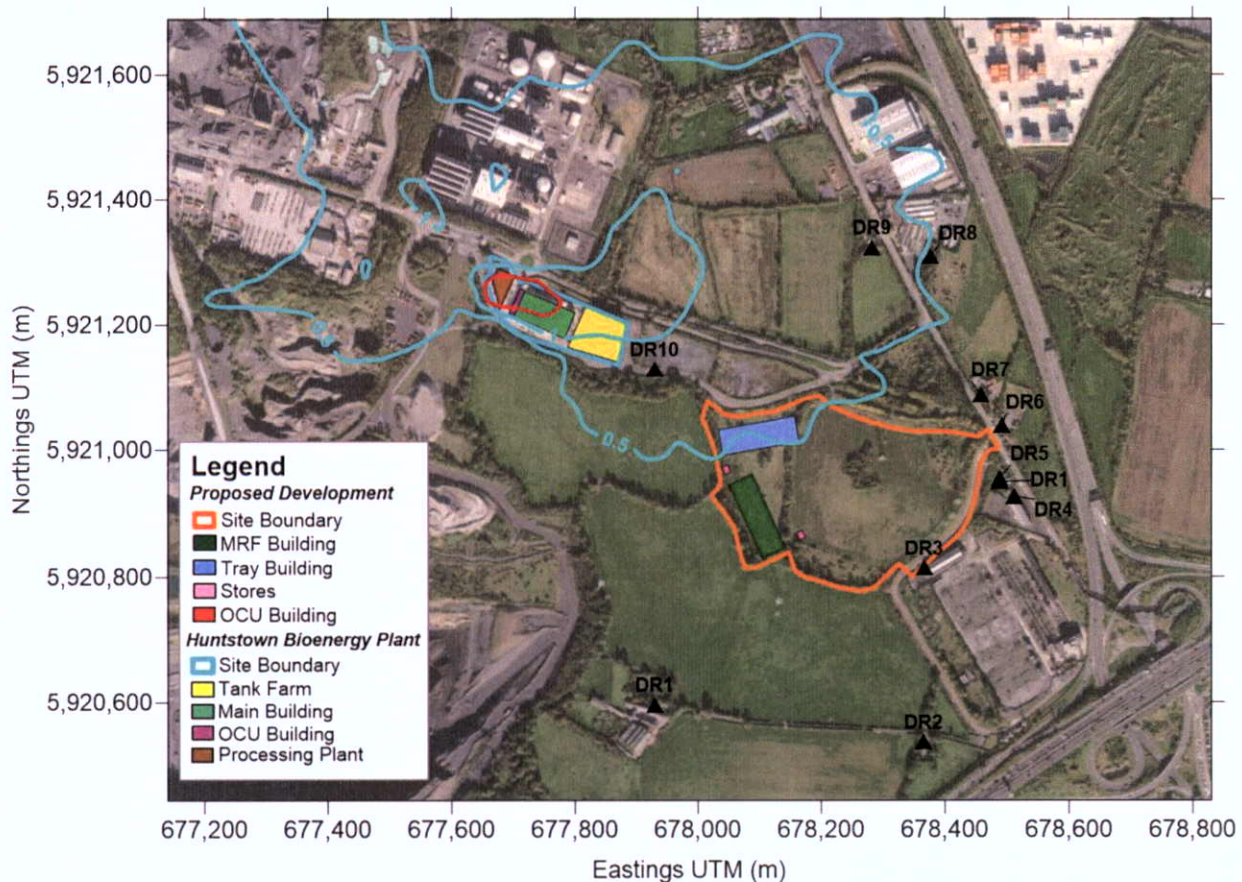
9.4.2.2 Odour

A review of nearby existing and approved facilities was undertaken to determine baseline odour levels in the study area. The review identified:

- A number of industrial facilities in close proximity to the proposed development with operation that are typically not associated with odorous emissions including:
  - The Roadstone Huntstown Quarry
  - The Huntstown Power station
  - The Dublin Airport Logistics Park
  - The Finglas Sub-station
- A single industrial facility, the Huntstown Bioenergy Facility, that accepts and processes waste streams and the odorous emissions from which could result in cumulative odour impacts in combination with the proposed development

The Huntstown Bioenergy Facility is an EPA licensed facility (Registration P0993-02). Katestone reviewed the EPA licence and documents submitted as part of the licence application to determine how to quantify baseline levels of odour in the study area due to the operation of this facility.

Baseline odour levels in the study area was quantified using dispersion modelling techniques as described in section 9.3.3.1. The results of this assessment are presented in Figure 9-5 as predicted ground level concentrations of odour due to the operation of the Huntstown Bioenergy Facility in the study area. The results show that baseline levels of odour are well within applicable odour criterion recommended by EPA for waste facilities at all locations in the study area beyond the licence boundary of the Huntstown Bioenergy Facility.



**Figure 9-5 Highest Predicted Ground-Level concentrations of odour (1-hour 98<sup>th</sup> percentile) from the Huntstown Bioenergy Plant**

## 9.4.3 Sensitive Receptors

The sensitive human receptors that are of greatest interest are residential and commercial locations in close proximity to construction and operational activities at the site. Construction activities including earthworks, construction and trackout will occur in close proximity to residential and commercial areas. The sensitive receptors included in the assessment of construction phase impacts are presented in Table 9-19 and Figure 9-6.

Table 9-19 Sensitive Receptors Included in the Assessment

Receptor ID	Receptor Type	x-coordinate	y-coordinate
		UTM (m)	
DR1	Residential	677,930	5920,595
DR2	Residential	678,366	5920,534
DR3	Commercial	678,367	5920,813
DR4	Residential	678,512	5920,927
DR5	Residential	678,488	5920,955
DR6	Residential	678,491	5921,038
DR7	Residential	678,458	5921,086
DR8	Residential	678,377	5921,309
DR9	Residential	678,283	5921,322
DR10	Commercial	677,930	5921,127

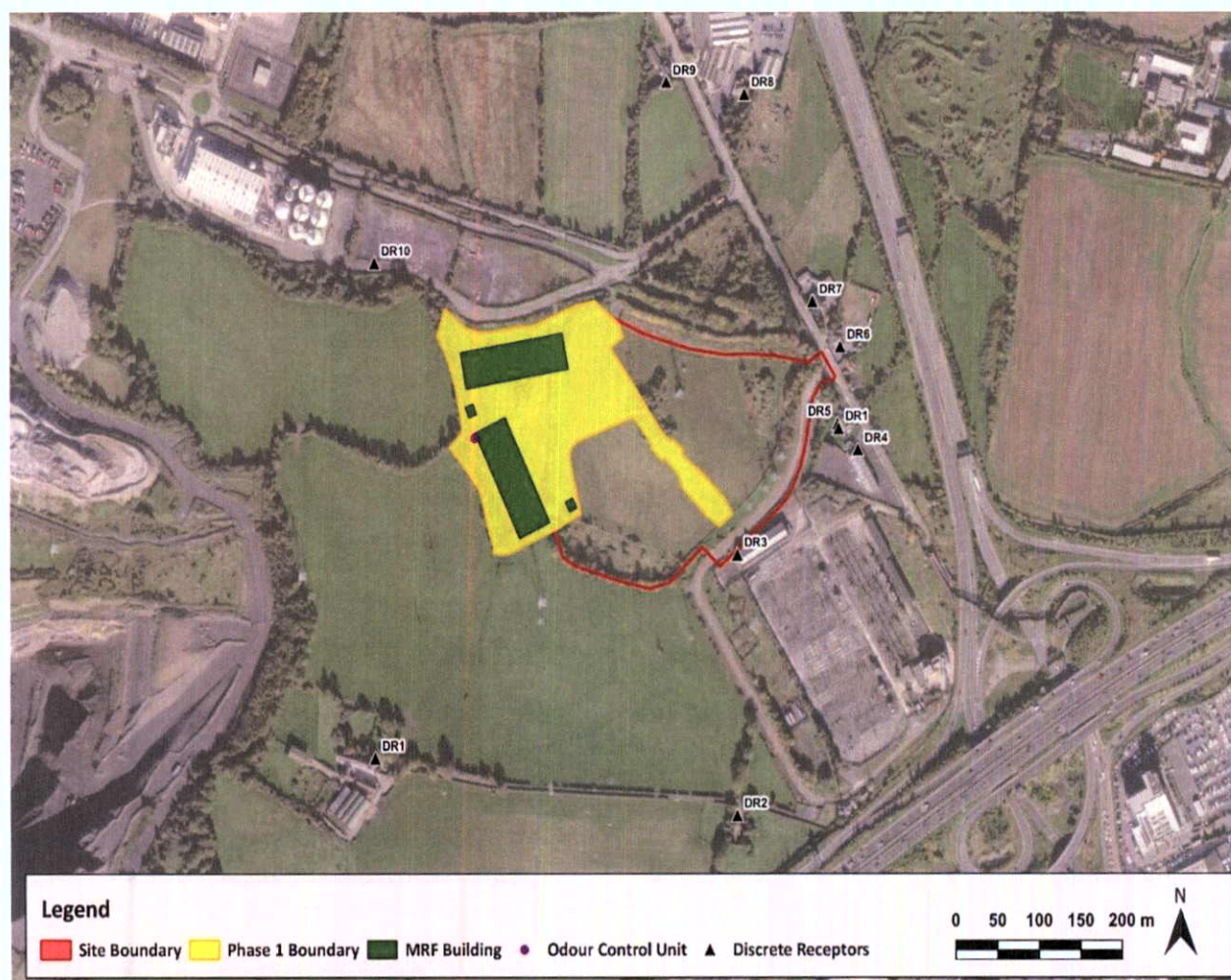


Figure 9-6 Sensitive Human Receptors Construction and Operational Stages

There are two ecological sensitive Natura 2000 Sites within 10 km of the proposed development including:

- The South Dublin Bay and River Tolka Estuary SPA
- The Malahide Estuary SAC

The location of these and other Natura 2000 Sites in relation to the proposed development are shown on Figure 9.7. The shortest distance between the proposed development Natura 2000 sites is:

- 7.8 km from the South Dublin Bay and River Tolka Estuary SPA
- 9.5 km from the Malahide Estuary SAC
- 10.1 km from the North Bull Island SPA
- 11.3 km from the Baldoyle Bay SAC
- 10.1 km from the North Dublin Bay SAC
- 10.3 km from the South Dublin Bay SAC

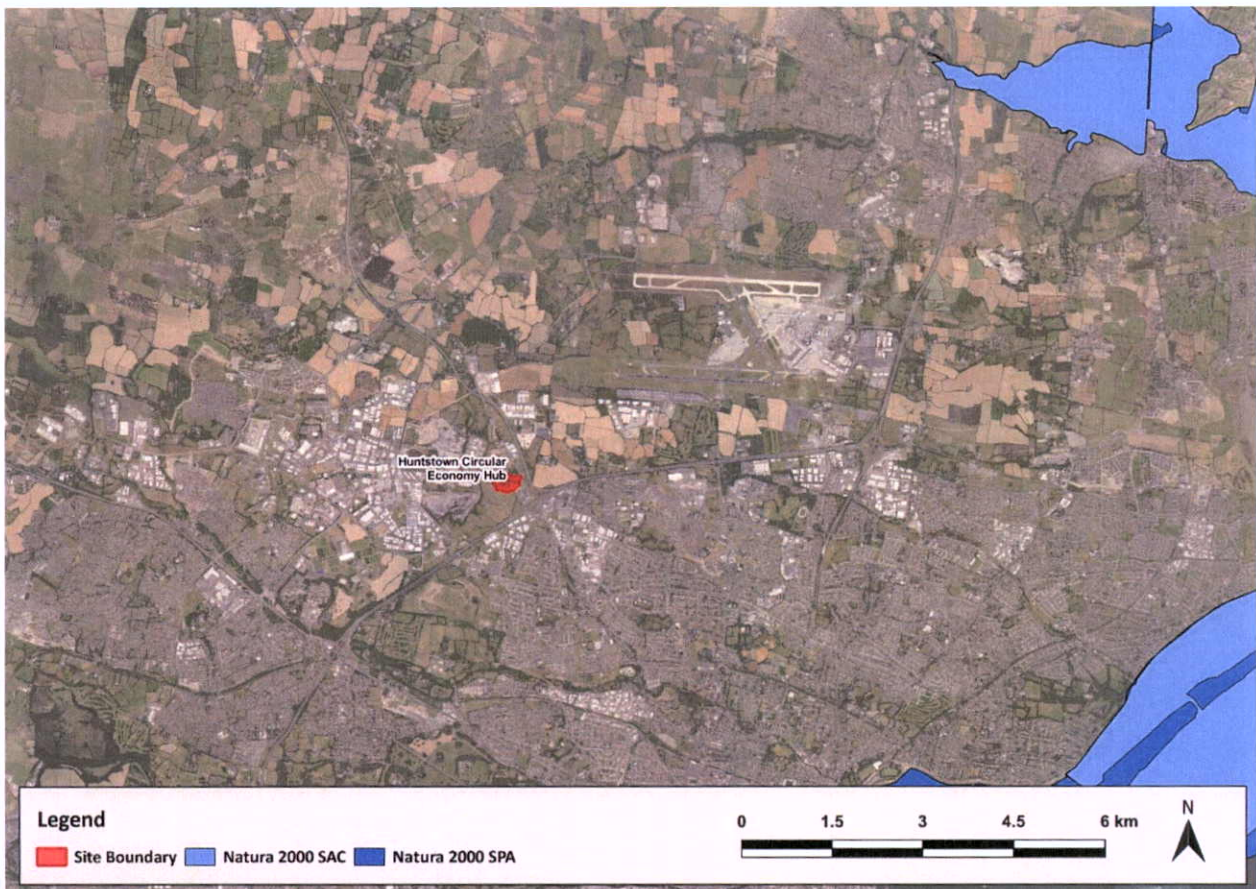


Figure 9.7 Ecological Receptors

## 9.5 Impacts

### 9.5.1 Construction Stage

Potential temporary impacts on air quality associated with the construction stage are dusts and vehicle exhaust emissions. Dusts are likely to arise from the following activities (IAQN, 2014):

- Earthworks
- Wind blow from temporary stockpiles
- Handling of construction materials
- Landscaping
- Construction traffic movements (Trackout)

The screening assessment, conducted in accordance with in IAQM (2014), indicated that a more detailed assessment is required as there are human receptors within 350 m of the boundary of the site and within 50 m of the routes used by construction traffic.

There are no ecological receptors within 50 m of the boundary of the site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance. The effect of the construction stage on ecological receptors can be screened out, meaning that the effects are negative and temporary.

The air quality assessment of the construction phase of the proposed development on sensitive human locations was conducted for the following construction elements:

- Demolition
- Earthworks
- Construction
- Trackout.

There will be no demolition activities associated with the construction phase of the proposed development.

Earthworks are required to facilitate the levelling of the site, the installation of a drainage network and installation of foundations and piles. As a precautionary measure it was assumed that the maximum land area on which earthworks will take place is greater than 10,000 m<sup>2</sup>. According to IAQM (2014) size categories, earthwork activities are therefore classified as large.

Construction will involve the construction of the MRF building, the Tray Washing Building, the OCU, onsite roads and car park. The volume of buildings that will be constructed is over 150,000 m<sup>3</sup>. According to IAQM (2014) size categories, the construction phase of the proposed development is class classified as large (volume of buildings is greater than 100,000 m<sup>3</sup>).

Earthworks and construction will involve the removal of topsoil and excavated inert material and delivery of construction materials using heavy duty vehicles (HDVs). The maximum number of HDVs on any one day will be between 10 and 50. According to IAQM (2014) size categories, trackout is therefore classified as medium. A summary of the size of each construction activity for the purpose of adopting IAQM (2014) guidance is presented in Table 9-18.

**Table 9-18 Summary of the Scale of Each Construction Activity**

Activity	Size	Magnitude Of Activity	Unit of Activity
Demolition	Not applicable		m <sup>3</sup> of structures demolished
Earthworks	Large	>10,000	m <sup>2</sup> of earthworks area
Construction	Medium	25,000 to 100,000	m <sup>3</sup> of construction buildings
Trackout	Medium	10 to 50	maximum number of vehicles per day

Earthworks, construction and trackout will not take place in close proximity to sensitive locations. The closest residential receptors are over 170 m from where construction works will take place. There are no sensitive residential locations within 100 m of the site boundary.

According to IAQM (2014) residential locations are classified as “highly sensitive receptor” in terms of potential dust soiling effects and to health effects on people. There is a single industrial operation within 20 m of site boundary, the Finglas Sub Station. Places of work are classified as “medium sensitive receptor” in terms of potential dust soiling effects and to health effects on people.

Considering the baseline level of PM<sub>10</sub> and the number of receptors affected, the sensitivity of the area to adverse impacts of PM<sub>10</sub> at the construction phase of the proposed development is low. In terms of dust soiling, the area would also be considered to be of low sensitivity as there is a single industrial facility with operations within 20 m of the site boundary. In this instance the point of the site boundary is the access road to the proposed development. The main body of construction activities will take place over 200 m from this location.

Earthworks and construction activities will be conducted across the extents of the proposed development site. Earthworks and construction activities may occur within 170 m of the nearest residential properties and within 200 m of the closest industrial premises. According to IAQM (2014) the sensitivity of an area to dust soiling and human health impacts is low due to earthworks and construction activities due to:

- The significant distance between earthworks and construction activities and sensitive locations;
- The low number of sensitive locations in proximity to the site, and
- Baseline PM<sub>10</sub> levels are below 24 µg/m<sup>3</sup>.

Considering the magnitude of dust emissions and sensitivity of the area to dust impacts from earthwork activities, the unmitigated risk of dust impacts is classified as:

- A low risk for dust soiling impacts, and
- A low risk for health effects of PM<sub>10</sub>

Considering the dust emissions magnitude and sensitivity of the area to dust impacts from construction activities, the unmitigated risk of dust impacts is classified as:

- A low risk for dust soiling impacts, and
- A low risk for health effects of PM<sub>10</sub>

Trackout activities will take place in along the service road link between the site entrance and North Road (R135) before traffic continues on to North Road. As the magnitude of the activity is medium, trackout activities are considered within 200 m of the site entrance. As the distance along the access road link between the site entrance and North Road is more than 200 m this is the road link considered for trackout activities. According to IAQM (2014) the sensitivity of the area in the vicinity of road link within 200 m of the site entrance to dust soiling and human health impacts are as follows:

- Dust soiling: sensitivity is medium because there is a single medium sensitive receptor (industrial installation) located at distances less than 200 m from the site entrance and less than 20 m trackout activities
- Human health impacts: sensitivity is low because baseline PM<sub>10</sub> levels are below 24 µg/m<sup>3</sup> and fewer than 10 highly sensitive receptors are located at distances less than 50 m from trackout activities.

Considering the magnitude of dust emissions from trackout and sensitivity of the area to dust impacts, the unmitigated risk of dust impacts is classified as a low risk for both dust soiling and for health effects of PM<sub>10</sub>.



A summary of the unmitigated risk of dust impacts from various construction activities is presented in Table 9-19.

**Table 9-19 Summary of Unmitigated Risk of Dust Impacts**

Construction Activity	Dust Soiling	Health Effect PM <sub>10</sub>
Demolition	n/a	
Earthworks	Low Risk	Low Risk
Construction	Low Risk	Low Risk
Trackout	Low Risk	Low Risk

The unmitigated impact of construction on air quality can be described in terms of dust soiling as negative, imperceptible and temporary effects. The unmitigated impact of construction on air quality can be described in terms of health impacts as negative, imperceptible and temporary effects.

Mitigation will not be required to reduce potential impacts of construction activities to levels that can be described as not significant.

### 9.5.2 Operational Stage

#### 9.5.2.1 Traffic

The potential for air quality impacts in the operational stage under the 'do-something' scenario result from traffic associated with the proposed development. The air contaminants of concern from traffic are NO<sub>x</sub>, NO<sub>2</sub> and PM<sub>10</sub>.

Traffic data was obtained from Trafficwise to determine the potential for air quality impacts at the operational stage of the proposed development under the do-something scenario. Traffic data was provided for the following road links:

- Link 1 – North Road (South of Development Access Junction)
- Link 2 – North Road (South of Huntstown Quarry)
- Link 3 – North Road (North of Huntstown Quarry)
- Link 4 – N2 Coldwinters Off-slip
- Link 5 – R135 North Road (Between N2 Off/On-slips)
- Link 6 – N2 Southbound On-slip Link Road
- Link 7 – N2 Southbound On-slip
- Link 8 – R135 North Road (South of Kilshane Cross)
- Link 9 – L3120
- Link 10 – L3125
- Link 11 - R135 North Road (North of Kilshane Cross)
- Link 12 – Blanchardstown Link Road
- Link 13 – R135 Wards Cross.

The assessment of impacts of the operational phase of the proposed development is based on the air quality impacts due to predicted AADT and HDV AADT on the road links.

A summary of the traffic flows generated on each of the road links due to the operational phase of the proposed development is presented in Table 9-20.

**Table 9-20 Traffic Flows on Road Links: Operational Stage**

Road Link	AADT	HDV AADT
Link 1 – North Road (South of Development Access Junction)	0	0
Link 2 – North Road (South of Huntstown Quarry)	236	162
Link 3 – North Road (North of Huntstown Quarry)	236	162
Link 4 – N2 Coldwinters Off-slip	75	50
Link 5 – R135 North Road (Between N2 Off/On-slips)	162	105
Link 6 – N2 Southbound On-slip Link Road	233	146
Link 7 – N2 Southbound On-slip	71	49
Link 8 – R135 North Road (South of Kilshane Cross)	90	63
Link 9 – L3120	40	22
Link 10 – L3125	24	15
Link 11 - R135 North Road (North of Kilshane Cross)	26	18
Link 12 – Blanchardstown Link Road	16	16
Link 13 – R135 Wards Cross.	11	8

The total volume of traffic generated as a result of the proposed development on any road link is less than the scoping criteria for:

- AADT of  $\geq 1,000$
- HDV AADT of  $\geq 200$

Considering that there will be no changes in speed band or carriageway alignment by  $\geq 5\text{m}$  due to the proposed development, no further assessment is required to demonstrate that traffic generated as part of the operational phase of the proposed development would cause adverse air quality impacts.

The potential impact of the operational stage on air quality is therefore found to be imperceptible, negative and long-term.

#### 9.5.2.2 Odour

The potential for air quality impacts in the operational stage under the 'do-something' scenario result from in-coming MSW and brown bin waste streams that will be handled and processed in the MRF.

The operational phase of the proposed development has the potential to result in odorous emissions that could cause adverse impacts that could in the absence of mitigation be described as significant, negative and long-term. Mitigation, in the form of an onsite odour abatement unit will be required to reduce potential impacts of operational activities to levels that can be described as not significant.

#### 9.5.2.3 Fire

In the event of a fire, which is the worst case scenario, smoke emissions would be generated by the combustion of materials and wastes; however the localised impacts on air quality will be brief.

### 9.6 **Baseline Scenario**

In the do-nothing scenario, no development of the site will take place. Air quality at the site will remain at baseline levels. Baseline air quality levels at the site will change with time in line with general trends in air quality for the site and the wider surrounding area.

## 9.7 Prevention & Mitigation

### 9.7.1 Design Stage

#### 9.7.1.1 Odour

An odour management system comprising the extraction of odorous air and its treatment in an odour control unit consisting of a dust filter to remove dusts and a carbon filter to reduce odour levels, will be installed in the section of the MRF where the MSW and 'brown bin' wastes are handled.

Prior to the installation of the system a thick foam spray will be applied to all cladding joints and other parts of the building fabric that could be susceptible to air leaks. The objective is to achieve an air leakage rate of  $< 2\text{m}^3/\text{m}^2/\text{hour}$ . Rapid action doors will be fitted to the vehicle access points.

Air will be drawn from the building using an extraction fan and a system of internal ceiling mounted ducts provided with grills. The fan will have the capacity to achieve 2 air changes per hour. The air will pass through the dust filter before entering the carbon filter. A damper will be fitted to the inlet of the unit to allow the air flow to be balanced. The treated air will vent to atmosphere via a single stack. The stack height was determined by the air dispersion modelling to ensure that the ground level concentrations of the odours emitted in the operational stage would not be a cause of odour nuisance.

#### 9.7.1.2 Fire Safety

The fire safety measures included in the design to mitigate the risk of fire outbreak are described in Section 10.8.1.6.

### 9.7.2 Construction Stage

When rainfall is greater than 0.20 mm/day, dust generation is generally suppressed. The potential for significant dust generation is also dependent on threshold wind speeds greater. Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest.

The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur.

A Preliminary CEMP describing the proposed construction mitigation measures has been prepared and a copy is in Appendix 3.3. This document will be updated in advance of the construction stage to take into consideration any additional measures that may be required by conditions attached to planning permission. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- Water spraying of exposed earthworks and site haul road during dry weather using mobile bowser units.
- Provision of a wheel cleaning unit at the site access road to remove dirt from vehicles prior to exiting the site
- Control of vehicle speeds on site roads
- Material drop heights from plant to plant or from plant to stockpile will be minimised.

### 9.7.3 *Operational Stage*

#### 9.7.3.1 Air Quality

The impact of the proposed development was considered in accordance with regulatory guidance and determined to be imperceptible. Therefore, no additional mitigation is required to further reduce operational impacts on air quality.

#### 9.7.3.2 Odour

The odour abatement unit installed in the MRF will effectively mitigate potential effects of odorous emissions. The emissions will be regulated by and Industrial Emissions Licence issued by the EPA and the emission limit values applied in the odour impact assessment are typical of levels set in EPA Licences.

#### 9.7.3.3 Fire Safety

The fire safety and emergency response measures that will be implemented in the operational stage to mitigate the risk of fire outbreak and, if one does occur, to ensure the appropriate response actions are taken to ensure the fire is extinguished as quickly as possible so as to minimise the adverse environmental impacts are detailed in Section 10.8.3.1.

## 9.8 **Monitoring**

### 9.8.1 *Construction Stage*

If required by the planning authority dust deposition monitoring will be carried out in the construction stage at locations and frequencies specified by the planning authority. The monitoring will be carried out using Bergerhoff gauges specified in the German Engineering Institute VDI 2119 document entitled 'Measurement of Dustfall Using the Bergerhoff Instrument' (Standard Method).

The gauges will be set up such that the containers are approximately 2m above the ground surface. To inhibit the growth of algae, 10ml of copper sulphate will be added to each jar. The monitoring period shall be between 28 and 32 days. The deposition limit will be 350 mg/m<sup>2</sup>/day.

### 9.8.2 *Operational Stage*

At the MRF, the emissions from the odour control unit will be monitored at the frequencies set in the EPA licence to demonstrate compliance with the emission limits. The odour control unit will be inspected regularly to ensure it is operating effectively. Dust deposition monitoring will be carried out at locations and frequencies specified by the EPA. At a minimum, this will include three locations inside the EPA licence boundary at quarterly intervals.

## 9.9 **Cumulative Impacts**

### 9.9.1 *Construction Stage*

Construction activities will take place in proximity to operational activities at the Huntstown Quarry. The closest point between construction activities and the quarry operational will be 300 m. The implementation of the CEMP for the proposed development will ensure that levels of impact identified in the assessment of the construction stage in combination with the quarry operations will be imperceptible, negative and temporary.

## 9.9.2 Operational Stage

### 9.9.2.1 Air Quality

The nature of the proposed development, involving haulage activities has the potential to impact on air quality in the operational stage due to traffic. Considering that baseline levels of air quality in the study area are well below regulatory limits, the potential impact of the operational stage on air quality in combination with baseline levels of air quality was therefore also found to be imperceptible, negative and long-term.

### 9.9.2.2 Odour

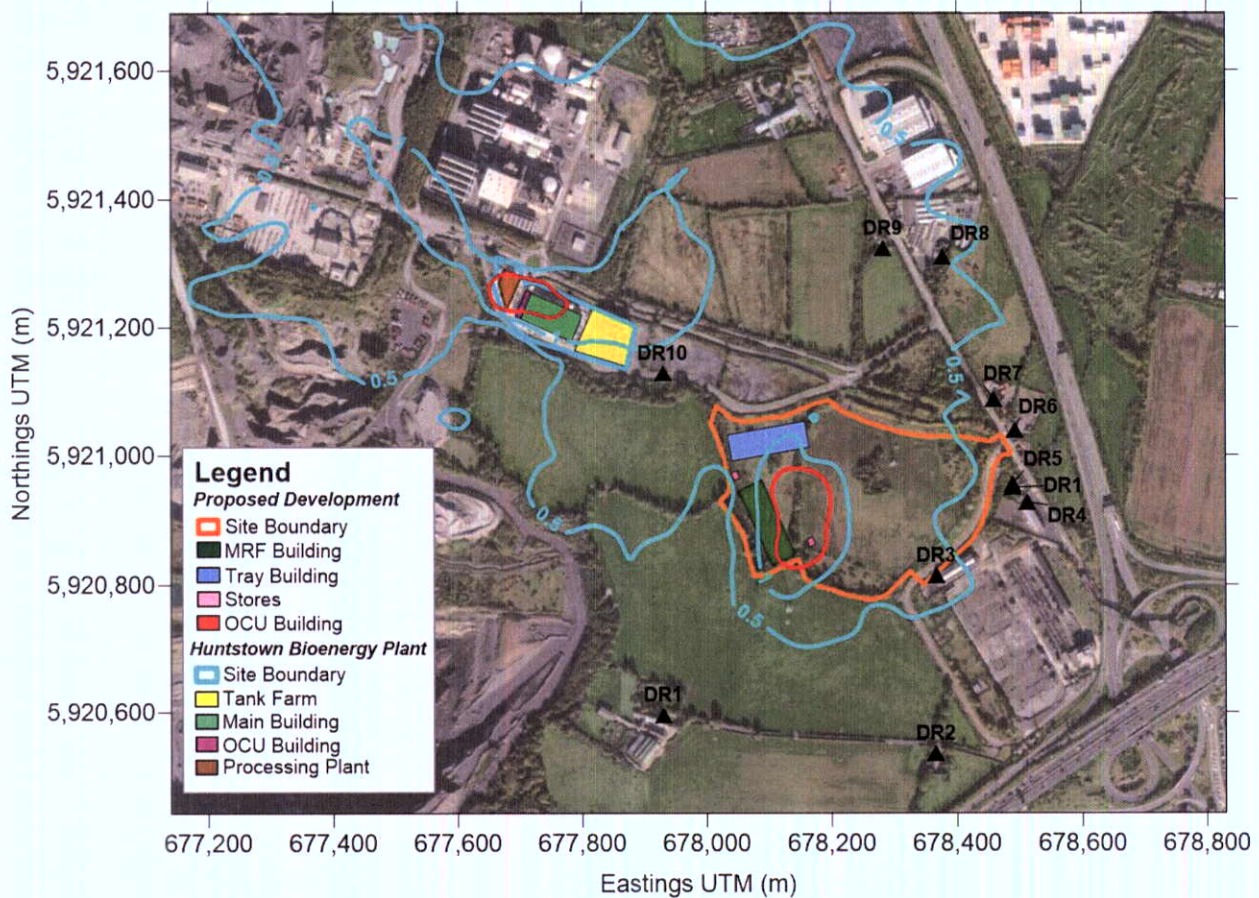
A cumulative odour impact assessment was undertaken to determine the impact of the proposed development in combination with the baseline levels of odour resulting from the Huntstown Bioenergy Facility. The assessment was undertaken using dispersion modelling techniques as described in Section 9.3.3.1. Predicted ground-level concentrations of odour (1-hour average, 98<sup>th</sup> percentile) are presented here as:

- Concentrations of odour at modelled receptors in Table 9-21
- A contour plot illustrating the concentrations of odour on a cartesian grid around the site in Figure 9-

The results show that predicted concentrations comply with the odour criterion recommended by EPA for waste facilities of 1.5 ou<sub>E</sub>/m<sup>3</sup> at all sensitive receptors included in the modelling assessment. The operation of the OCU will ensure that levels of odour impact identified in combination with baseline levels of odour will be minimised to levels that are imperceptible, negative and long-term.

**Table 9-203 Highest Predicted Odour Ground-Level Concentrations (1-hour 98th percentile) for each Sensitive Receptors**

Receptor ID	1-hour 98 <sup>th</sup> Odour Concentrations (ou <sub>E</sub> /m <sup>3</sup> )
	Maximum 5-year
DR1	0.2
DR2	0.2
DR3	0.6
DR4	0.4
DR5	0.4
DR6	0.4
DR7	0.5
DR8	0.5
DR9	0.6
DR10	0.9



**Figure 9-8 Highest predicted ground-level concentrations of odour (1-hour 98<sup>th</sup> percentile) in any of the five modelled years included in the dispersion modelling assessment due to the MRF**

## 9.10 Residual Impacts

### 9.10.1 Construction Stage

The implementation of the CEMP will ensure that levels of impact identified in the assessment of construction impacts will be minimised to levels that are negative, imperceptible, local, not likely and temporary.

### 9.10.2 Operational Stage

#### 9.10.2.1 Air Quality

The results of the traffic modelling assessment indicate that the impact of the operational stage on human health will be negative, imperceptible, local, likely and long-term. In relation to ecological sites the impact will be negative, imperceptible, not likely and long-term.

#### 9.10.2.2 Odour

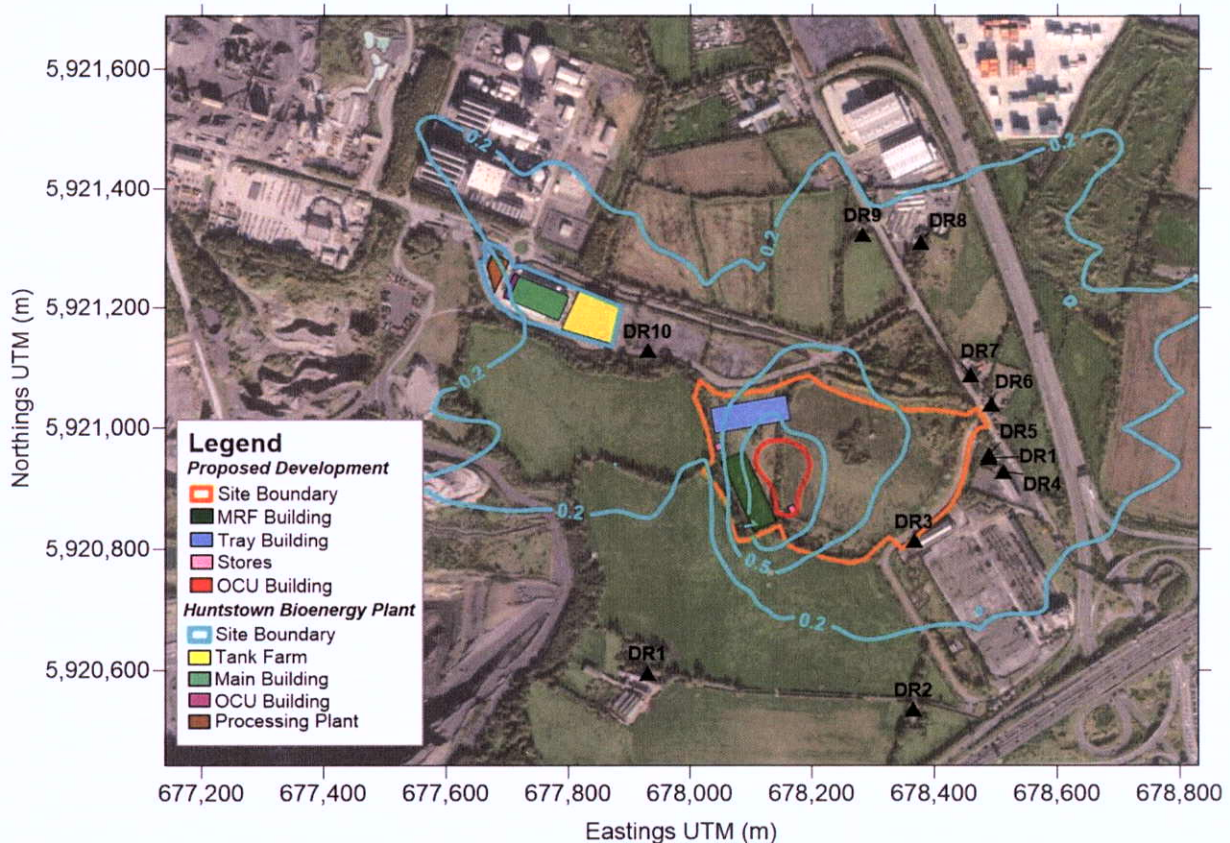
The predicted ground-level concentrations of odour (1-hour average, 98<sup>th</sup> percentile) are presented here as:

- Concentrations of odour at modelled receptors in Table 9-212
- A contour plot illustrating the concentrations of odour on a cartesian grid around the site in Figure 9-7

The results show that predicted concentrations comply with the odour criterion recommended by EPA for waste facilities of  $1.5 \text{ ou}_E/\text{m}^3$  at all sensitive receptors included in the modelling assessment. The operation of the OCU will ensure that levels of impact identified in the assessment in terms of odour will be minimised to levels that are negative, imperceptible, local, likely and long-term.

**Table 9-21 Highest Predicted Odour Ground-Level Concentrations (1-hour 98th percentile) for each Sensitive Receptor**

Receptor ID	1-hour 98 <sup>th</sup> Odour Concentrations ( $\text{ou}_E/\text{m}^3$ )
	Maximum 5-year
DR1	0.1
DR2	0.1
DR3	0.4
DR4	0.3
DR5	0.3
DR6	0.3
DR7	0.3
DR8	0.3
DR9	0.2
DR10	0.4



**Figure 9-7 Highest Predicted Ground-Level Odour Concentrations (1-hour 98<sup>th</sup> percentile)**

## 9.10.3 Summary of Impacts

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Construction Stage					
Air Quality	Negative	Imperceptible	Local	Likely	Long Term
Operational Stage					
Air Quality Human Receptors	Negative	Imperceptible	Local	Likely	Long Term
Air Quality Ecological Receptors	Negative	Imperceptible		Not Likely	Long Term

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## 10. POPULATION & HUMAN HEALTH

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### 10.1 Introduction

This Chapter assesses the impacts of the proposed development on the population and human health. The assessment considered a 'baseline' scenario and identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses the residual impacts. This Chapter should be read in conjunction with Chapter 9 Air and Chapter 14 Materials Assets Traffic & Transport.

"Human health" is not defined in the EIA Directive; however the term "human health" is contained in both the Strategic Environmental Assessment Directive (2001/42/EC) and EIA Directive and a common interpretation can be assumed. Therefore the consideration of human health effects resulting from the construction and operation of a project should focus on health issues arising in the context of the other relevant environmental factors listed in Article 3 of the Directive<sup>10</sup>, namely:

- Population
- Biodiversity, with particular attention to protected species and habitats
- Land, soil, water, air and climate
- Material assets, cultural heritage and the landscape
- Interactions between the above factors

The EIA Directive and transposing regulations do not generally require assessments of land-use planning, demographic issues or detailed socio-economic analysis and these should be avoided in an EIAR, unless issues such as economic or settlement patterns give rise directly to specific new developments and associated effects<sup>11</sup>. Given the nature of the proposed development these aspects have not been considered.

This Chapter was prepared by Dr Martina Gleason PhD of OCM, with assistance from Mr Damian Brosnan MSc of Damian Brosnan Acoustics (dBA) who prepared a Noise and Vibration Impact Assessment for the proposed development, a copy of which is in Appendix 10.1. Dr Gleason has a BSc in Environmental Geochemistry and a PhD in Geochemistry. She has over 15 years' experience of environmental impact assessment and, managing environmental monitoring contracts at EPA licensed sites including the preparation of interpretive reports on air quality and noise impact assessments.

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<sup>10</sup> • Government of Ireland Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018).

<sup>11</sup> Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA 2017).

Mr Brosnan holds a BSc, Diploma in Acoustics and Noise Control, MSc in Applied Acoustics and is a Member of the Instituted of Acoustics (MIOA) and a founding member of the Association of Acoustic Consultants of Ireland (AACI) who has over 20 years' experience in scoping and carrying out noise and vibration impact assessments.

## 10.2 Relevant Regulations and Guidance

The general EIA legislation and guidance documents are listed in Section 1.5. The guidelines relevant to Population and Human Health considered in the preparation of this Chapter include:

- Dublin Airport Local Area Plan(LAP) 2020);
- Fingal Noise Action Plan 2019-2023, and
- Noise Action Plan Dublin Airport 2019 – 2023.

## 10.3 Methodology

The assessment was based on the land use and settlement patterns in the vicinity of the proposed development. Information was derived from databases maintained by the Central Statistics Office (CSO), the Fingal County Development Plan; Chapter 9 Air, and Chapter 14 Traffic & Transport; a Noise & Vibration Assessment completed by dBA (Appendix 10.1); an Aeronautical Assessment prepared by O' Dwyer Jones Design Partnership (Appendix 10.2), and a Glint and Glare Assessment completed by MacroWorks (Appendix 10.3).

## 10.4 Proposed Development

Chapter 3 provides a detailed description of the proposed development. Those aspects of the relevant to Population & Human Health include the land use in the vicinity of the development site; local amenities; proximity to Dublin Airport and the flight path to Casement Aerodrome; emissions during the construction and operational stages with the potential to directly and indirectly impact on human health, for example air emissions and noise, and potential sources of nuisance (e.g. odours and traffic congestion).

## 10.5 Receiving Environment

### 10.5.1 Surrounding Land Use

The surrounding land use is a mix of quarrying, utilities and agricultural. Huntstown Quarry, which includes an inert soil recovery facility, is to the west; Huntstown Bioenergy, which is an anaerobic digestion plant is 150m to the west Huntstown Power Station, which is a Tier 2 Seveso Site, is approximately 280m to the north-west; an Eirgrid 220 kv Substation is to the south-east. The adjoining lands to the east, south and west are currently used for agriculture. The southern runway of Dublin Airport is approximately 2.4km from the north-eastern boundary.

Despite the commercial character of the area, there are a number of residential dwellings in proximity to the development site (Figure 10.1) that are potential sensitive receptors to human health impacts:

- A cluster of three dwellings 220 m east of Phase 1 on North Road are the nearest receptors. One of these houses a veterinary clinic.
- Individual dwellings further north, including the Ravenswood Estate Community Housing Project at 830 m.
- An isolated farmhouse 280 m southwest of the site (Kildonan House), which is accessed from the Substation service road.



**Figure 10.1: Phase 1 Nearest Residences (White). Ravenswood Estate Community Housing Project (Yellow), and the Baleskin Reception Centre (Orange).**

Other receptors are scattered in several directions, all of which are over 700 m from the site. A number of residential estates lie to the south and south-east, in addition to apartment complexes at Charlestown.

In terms of noise impacts, all of receptors in proximity to the site are residential. There are no particularly vulnerable receptors such as hospitals or nursing homes within 500 m. Commercial and energy-related facilities, including their offices, are not considered noise sensitive. Similarly The Dog's Trust Facility to the north is also not considered to be a noise sensitive location.

#### 10.5.2 Amenities

There are no recreational areas, schools, nursing homes or medical centres within 1km of the site.

#### 10.5.3 Major Accidents and Natural Disasters

##### 10.5.3.1 Major Accidents

The Seveso II Directive 96/82/EC is concerned with the prevention of major accidents that involve dangerous substances and the limitation of their consequences for humans and the environment. It applies to establishments where dangerous substances are produced, used, handled or stored. The Directive was transposed into Irish law by the "European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations" SI No 476 of 2000 and the Health and Safety Authority (HSA) is the designated competent authority.

Facilities that are subject to the Regulations are ranked as Upper and Lower Tier Establishments based on their scale. The proposed development will not be subject to the Regulations and the nearest designated facility is the Lower Tier Huntstown Power Station, approximately 270m to the north-west.

##### 10.5.3.2 Natural Disasters

The subject site is not in an area at risk of land instability or identified as being at risk of, pluvial, fluvial or groundwater flooding. .

#### 10.5.4 Dublin Airport & Casement Aerodrome

The development site is outside all Airport Public Safety Zones, and just outside the new Airport Noise Zone C. However it is 2.4km from one of Dublin Airport's main runway thresholds (Threshold 10R) and is on elevated ground directly under the Airport's "Inner Horizontal Surface".

The site's ground surfaces are directly in view of Dublin Airport's new 90m-tall Control Tower and in line with the control tower's view towards aircraft landing on Dublin's Runway 10R. It is well within the 13km distance from Dublin Airport, identified as the area of bird hazard risk. The development area is also directly under the end of the "Approach Surface" to Casement Aerodrome's Runway 22 and directly under the Aerodrome's "Outer Horizontal Surface".

Aviation safety at and around Dublin Airport and in Fingal in general is provided for under Objectives of the Dublin Airport Local Area Plan (LAP) 2020. Objective OS01 requires the control of the type and height of any structures developed in the environs of the Airport in accordance with the Obstacle Limitation Requirements of Regulation (EU) No 139/2014 (EASA Certification Specifications).

#### 10.5.5 Noise & Vibration

The Noise Action plan for Fingal County 2019-2023 includes maps relating to the road network in the vicinity of the proposed development. The Day-Evening-Night noise levels (Lden) levels at the proposed development reach 65 dB, and exceed 65 dB at the nearest dwelling cluster on North Road,

as well as at Kildonan House to the southwest. Night ( $L_{night}$ ) levels are also elevated, exceeding 55 dB across the local area. These high levels reflect the 24 hour dominance of road traffic, and approach the ‘undesirable high’ noise level thresholds set out in the Noise Action Plan.



Figure 10.2 Day-Evening-Night Time Noise Contours

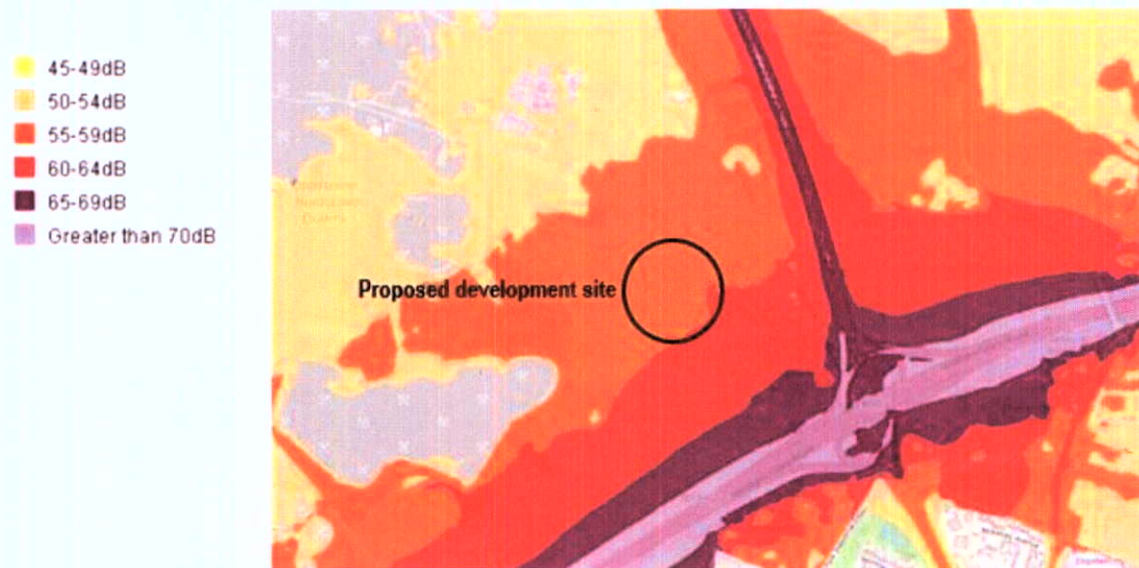
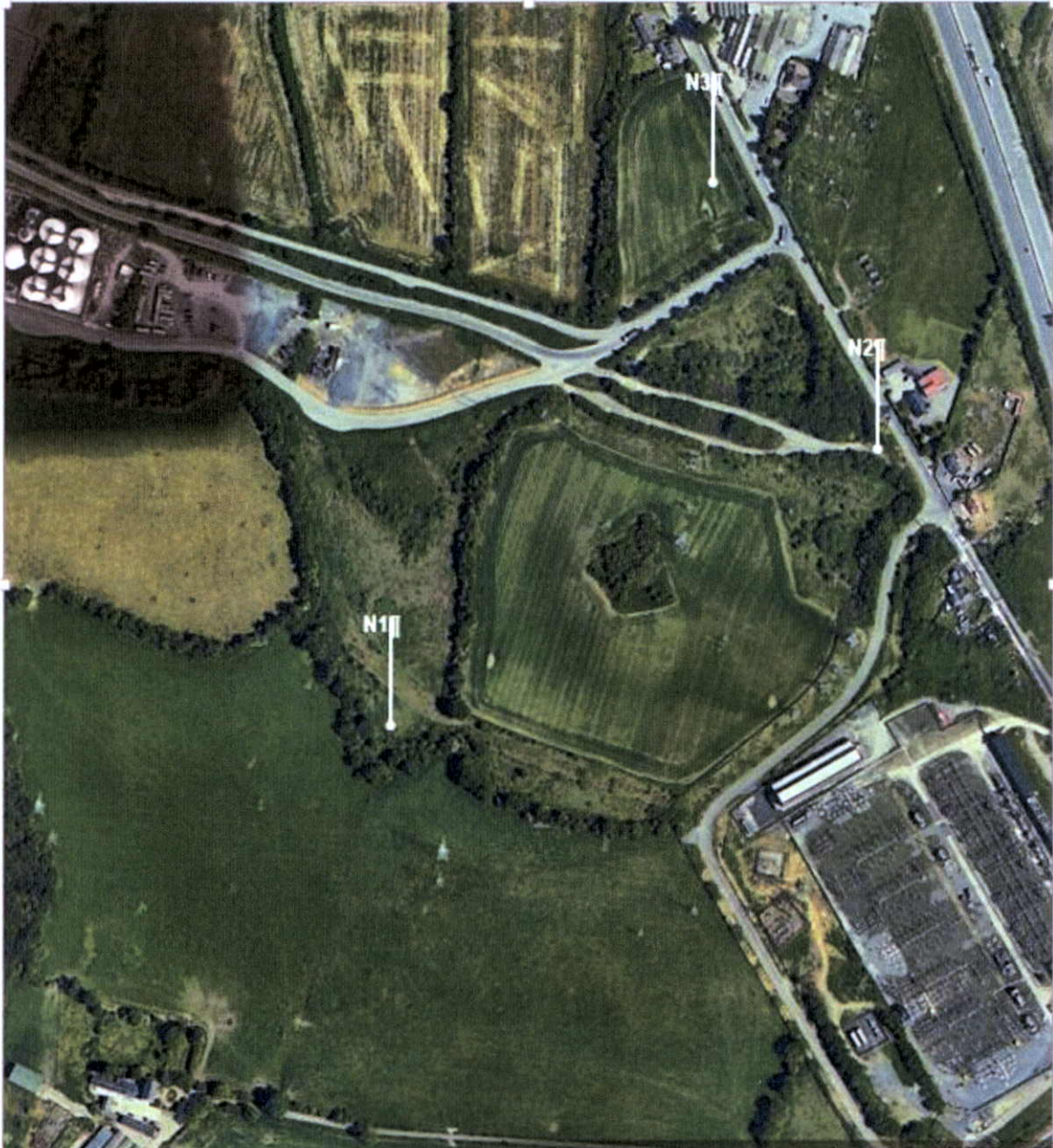


Figure 10.3 Night Time Noise Contours

The development site is outside the noise zones specified in the Draft Dublin Airport Noise Action Plan. dBA completed a baseline noise survey on 23.02.23—24.02.23 at three locations (N1, N2 and N3) shown on Figure 10.4. The survey methodology, equipment specifications and weather conditions are described in Section 3.4 of the dBA report in Appendix 10.1, with the noise data presented in Tables 9 and 10.

The soundscape at all three stations was entirely dominated by distant road traffic, with traffic on N2 being more intrusive than M50 traffic. Intermittent North Road traffic was also significant at station N3, chiefly associated with truck movements related to the nearby Huntstown Quarry. All three

stations were influenced by local bird song/calls and aircraft movements, while noise emissions from the quarry were slightly audible at N1.



**Figure 10. 4 Baseline Noise Monitoring Locations**

The dominance of distant traffic is reflected in the relatively high noise levels measured, in particular the elevated LAF90 30 min levels. Daytime and evening LAF90 30 min levels exhibit a narrow range, suggesting little or no break in distant traffic. Night-time levels show a wider range, attributable to occasional lulls in traffic. Lden and Lnight levels measured across all three stations are relatively high.

The noise levels at all three stations, measured levels are lower than mapped levels in the Fingal Noise Action Plan (Figures 10. 4 and 10.5). The most likely explanation is that the northeast and northwest breezes prevailing during the survey significantly minimised M50 traffic noise levels, and it was noted during the survey that N2 traffic noise masked M50 traffic noise. In contrast, the Noise Action Plan mapping indicates that M50 noise contours ordinarily exhibit a considerably wider corridor than N2 contours.

### 10.5.6 Air Quality

The development site is in an area that has been extensively developed for industrial and commercial use and mineral extraction. The assessment of the impact of the development on air quality (Chapter 9) has established that the baseline air quality in the vicinity of the site is good.

### 10.5.7 Traffic

At present there is no direct access to the development lands from a public road. The proposed access is off the existing service road that provides access to the ESB Finglas 220kV Station from North Road. The service road also provides access to agricultural lands and a farm house with a large farm yard and sheds located between M50 to the south. The service road intersects North Road at a simple priority junction approximately 600m south of the Coldwinters N2 off-slip near the Dogs Trust property.

There is a footpath along the eastern side of the North Road between the ESB service road junction and the Dogs Trust. A short section of footpath continues on the western side of the road past the Dogs Trust. To the south of the ESB service road the footpath continues along the eastern side of the road ending approximately 40m short of the end of the overbridge of the M50.

The closest bus stop is on North Road, immediately north of the Dogs Trust. The bus stop serves northbound travellers and the closest southbound bus stop is between Kilshane Cross and the M50 overbridge of the N2. Both bus stops are serviced by Bus Eireann Routes 103 and 105X.

## 10.6 Impacts

### 10.6.1 Construction Stage

In the construction stage (approximately 14 months) in the absence of mitigation noise, air emissions and construction related traffic have the potential to result in localised, if temporary, nuisance. Construction stage impacts on air are described in Section 9.5.1 and construction related traffic is described in Section 14.6 of this EIAR.

#### 10.6.1.1 Noise & Vibration

##### Noise

The chief source of noise emissions will be the plant and equipment used onsite. The emissions will vary considerably due to:

- Relocation of plant around the site as required;
- Different plant items will be required at different times, and construction operations will vary on a daily basis;
- Each plant item may operate under different loading conditions or be in varying states of repair;
- Construction works may be concentrated for certain periods, followed by periods of inactivity;



- Localised works may require several hours of intense activity, and
- During the later stages of the construction phase, emissions from some operations will be screened by previously completed structures.

With respect to noise sensitive receptors, the 'worst case' scenario emissions will arise when works are undertaken close to their respective boundaries. An 'extreme worst case' scenario consists of construction activity simultaneously occurring at the nearest points to offsite receptors, involving plant with the greatest noise output. In this scenario, operations may occur simultaneously in two zones:

- Zone 1: Construction works near the northeast corner.
- Zone 2: Construction works near the southwest corner.

dB(A) modelled the extreme worst case scenario (Sections 4.1.5 and 4.1.6 of dB(A) Report in Appendix 10.1). The modelling established that the noise levels will be considerably lower than the relevant noise criterion (65 dB) applicable to construction sites.

### Vibration

Delivery truck movements may give rise to vibration at positions adjacent to the road. However, such emissions are typically imperceptible beyond 10 m, and are highly unlikely to be perceptible at dwellings alongside site access routes. North Road is currently subject to a large number of daily truck movements.

The on-site movement of plant is not considered to constitute a source of groundborne vibration and is not listed in typical vibration documents such as BS 5228-2:2009. In addition, plant machinery used onsite is likely to be small to mid-sized, and similar to those used on other urban construction projects.

Excavation of trenches and pits for foundation and services will be required. These activities are not typically associated with off-site groundborne vibration impacts. Piling is not proposed and in addition, rock breaking is unlikely to be required.

While vibro-rolling will generate high levels of vibration at the point of operation, experience at other sites indicates that such vibration is typically immeasurable beyond 50 m.

On the basis of the foregoing peak particle velocity levels at all receptors are expected to be considerably lower than relevant human threshold and building and structural integrity criteria, and indeed are expected to be below measurement threshold. It follows that construction operations are unlikely to be either perceptible offsite, or to cause cosmetic or structural damage to buildings.

### *10.6.2 Operational Stage*

#### *10.6.2.1 Odour*

The residual MSW and the 'brown bin' wastes, which will be processed in the MRF, are odorous and in the absence of mitigation could be a source of odour nuisance outside the development boundary. The wastewater treatment plant in the FCCP plant will be a physico-chemical system and will not involve potentially odorous biological stages e.g. activated sludge. The mechanical screenings and sludge from the DAF unit are potentially odorous.

#### 10.6.2.2 Noise

The MRF and the FCCP plant will operate 24/7. In the MRF the noise emission sources will include trommels, shredders, optical separators, magnets, eddy current separators, wind sifters, picking lines, compactor units and bale wrapping units. The C&D processing line will have crushing and screening equipment. A mobile grab front end loader and a telescopic loader will be used to move the materials. Negative air pressure will be maintained in the MSW/Brown Bin Bay using an air management system that includes an air extraction fan.

In the FCCP Plant the noise sources will include the washing and waste water treatment plants. Electric forklift trucks will be used to move tray and crate stacks within the building, including loading/unloading of vans and trucks.

dBa completed a predictive noise modelling assessment of the operational phase for three different methodologies (Ref Section 5.3 of the dBA Report in Appendix 10.1). The first was based on criteria recommended by the EPA and established that the proposed development will comply with EPA criteria at the nearest dwellings and will also comply at more distant dwellings.

The second method was based on British Standard 4142:2014, which provides for the comparison of specific LAeq T levels (i.e. noise levels attributable to the source in question) with background levels. This established that in all cases, operational noise levels will be lower than background levels, which at all receptors are dominated by road traffic.

The third method was an assessment of the increase in LAeq 30 min levels arising from the proposed development in line with Institute of Environmental Management and Assessment (IEMA) guidance. This concluded that in all cases, impacts will be imperceptible, again due to high existing baseline noise levels resulting from road traffic.

#### 10.6.2.3 Nuisance

In addition to odour and noise and in the absence of mitigation the waste processing activities have the potential be a source of off-site nuisance and impairment of amenity linked to litter, traffic, vermin and birds.

#### 10.6.2.4 Fire

A major incident such as a fire presents a risk to site staff and there is the potential, depending on the weather conditions, for smoke to affect the occupants of the residential, industrial and commercial properties in the vicinity of the site.

#### 10.6.2.5 Aircraft Safety

Given the proximity of the development area to Dublin Airport and its location beneath the flight path to Casement Aerodrome birds attracted to the development present a risk of bird strike to aircraft.

## 10.7 Baseline Scenario

If the proposed development does not proceed there will be no new point emission sources to air, no additional traffic in the vicinity of the site with their associated emissions, no new noise sources, no potential sources of nuisances and no potential risk to aviation safety.

## 10.8 Prevention & Mitigation Measures

### 10.8.1 Design Stage

#### 10.8.1.1 Building Design Height

The Dublin Airport Aerodrome Operator's Map is the 'Safeguarding Chart' for the airport. This Chart shows 0.5 × 0.5km grids with guidelines as to building heights in each grid-square – 0m, 10m, 15m, 45m, 90m – above which it is advised that a proposed development be referred for consultation with the Dublin Airport Authority (DAA). It also shows the principal "Obstacle Limitation Surfaces" that apply around the airport.

The proposed development is in an area for which assessment is advised for any building higher than 15m. The "Obstacle Limitation Surfaces" constitute the principal height restrictions that now apply in the vicinity of the various airports/aerodromes. In the south-west part of Fingal, the "Surfaces" of Dublin Airport, Casement Aerodrome and Weston Aerodrome all overlap, with the lowest "Surface" being the limiting one.

The Dublin Airport "Inner Horizontal Surface" extends to 4km from the centrelines of all runways at Dublin Airport, and is 45m above the airport's datum (67m OD), i.e. it is a flat Surface at 112m OD. This "Surface" extends above the proposed development area; however, the highest element of the proposed development – which is the odour control unit exhaust stack at the west corner of the Materials Recovery Facility – rises to just 94.7m OD. The proposed development is therefore very comfortably below Dublin Airport's "Inner Horizontal Surface"

The Casement Aerodrome's "Outer Horizontal Surface" is 145m above the Aerodrome's datum (86.6mOD) i.e. it is a level surface at 231.6m OD, and extends for 15km from the Aerodrome's reference point. The "Approach Surface" to the Aerodrome's Runway 22 extends for 15.06km from the 22 Threshold and the section of this "Approach Surface" above the development area is 243.3m OD. The two Casement "Surfaces" , at 231.6m OD and 243.3m OD, are therefore very substantially higher (by 136.9m and 148.6m) than the highest element of the proposed development (94.7m OD).

#### 10.8.1.2 Roof Top Solar Panels Glint & Glare

Solar/PV panels will be provided on roofs of the two buildings. Because the new control tower at Dublin Airport is particularly tall (extending 160m OD) the height of the roof parapet (1.66m above roof gutter level) is designed to obscure all panels from any view from the new Control Tower cab.

#### 10.8.1.3 Lighting

The proposed development area is not in a location, or of a height, where aviation obstruction lighting is required. Given the proximity to the flight path to/from Dublin Airport's Runway 10R/28L the external lighting will be of the cut-off type (i.e. not showing light above horizontal).

#### 10.8.1.4 Odour

An odour control system designed to ensure that odour emissions from the processing of odorous waste in the MRF will not be a source of off-site nuisance will be installed.

#### 10.8.1.5 Noise

Design stage measures are not required.

#### 10.8.1.6 Fire Safety

To prevent/reduce risk of arson there will be a security fence around Phase and the entrance gate will be locked during non-operational hours. Emergency exit doors will be provided in all of the buildings and fitted with emergency exit signs with back-up lighting.

An automatic fire detection (for example ceiling mounted heat and smoke detectors) and alarm system certified to IS 3218 will be installed in both buildings that covers all internal areas, supplemented by a manual break glass system.

The ring main will be fitted with six hydrants that comply with the Uisce Eireann Water Infrastructure Standard Details (STD-W-19).

The separation distances between the buildings means that a fire outbreak in one will not spread to any of the others. Internal separation distances between materials storage areas/bays will comply with the requirements of the EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, (2013) and the EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016.

### 10.8.2 *Construction Stage*

#### 10.8.2.1 Air

Dust emissions are likely to arise from earthworks, wind blow from temporary soil stockpiles; construction traffic movements; handling of construction materials and landscaping. Given the distance between the site and the nearest sensitive receptor there is no risk of dust soiling causing a nuisance; however the following control measures will be implemented at a minimum:

- Spraying of exposed earthworks, soil stockpiles and site haul roads during dry weather using mobile bowser units;
- Provision of a wheel cleaner at the site entrance road to remove soil from vehicles before they leave the site;
- Paved roads will be regularly swept to remove mud and debris and traffic movements on non-paved areas will be restricted to essential site traffic;
- Control of vehicle speeds;
- Material drop heights from plant to plant or from plant to stockpile will be minimised and

- The access junction on the service road will be inspected daily for cleanliness and cleaned as required using a mechanical road sweeper.

The following mitigation measures will be implemented to minimise the impacts of vehicle exhaust emissions:

- Construction materials will where possible be sourced locally so as to minimise transport distances;
- Engines will be turned off when machinery is not in use, and
- Regular maintenance of vehicles, plant and equipment.

#### 10.8.2.2 Noise

There will be no vibration impacts and although noise emissions will be short term, and will not exceed the applicable noise criterion, the following mitigation measures will be implemented:

- Construction operations will in general be confined to the periods Monday-Friday 0700-1900 and Saturday 0800-1400, unless otherwise agreed with Fingal County Council.
- Drivers of plant and vehicles will be instructed to avoid hooting at all times.
- Plant items will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks on North Road will be prohibited.
- Machinery not in active use will be shut down.
- The Environmental Clerk of Works will act as a liaison officer with the local community and all noise complaints will be logged in a register, and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Guidance set out in British Standard BS 5228:2009 with respect to noise control will be applied throughout the construction phase.

For aviation safety reasons the operating height of any cranes on site will be limited to no more than 33m above finished ground level, and 17m above the highest element of the development (i.e. to no higher than 112m OD).

As required by S.I. 215 of 2005 – ‘Irish Aviation Authority (Obstacles to Aircraft in Flight) Order’ the IAA and DAA will be informed 30 days in advance of the use of any cranes and all notifications and safety measures required by either authority, for example the provision of aviation warning lights will be implemented.

### 10.8.3 Operational Stage

#### 10.8.3.1 Fire Safety

Members of the public will not have access to the facility and only authorised personnel will be permitted inside the waste processing buildings. Site visitors will be informed of the safety and fire prevention procedures that must be followed while they are on site. There will be a policy of only smoking in designated areas.

Safe systems of work will be provided and outside contractors will be obliged to undergo safety inductions before being allowed access operational areas. The inductions will address behaviour on site, housekeeping and specific high risk jobs i.e. hot works procedures & permits.

The use of portable electrical heaters will be prohibited and the electrical systems in the buildings will be subject to regular inspections.

In the MRF the internal separation distances between materials storage areas/bays will comply with the requirements of the EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, (2013) and the EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016.

Fire extinguishers will be positioned at strategic locations throughout the site and the locations recorded in Fire Register. The extinguishers will be subject to annual inspection and replenishment/replacement as required by a fire safety contractor. Site staff will be trained to extinguish small fires with appropriate hand held fire. If staff members cannot tackle a fire safely and effectively, the evacuation of all personnel will be the primary priority.

An Emergency Response Procedure will be prepared that describes the actions that will be taken in the event of a fire outbreak to ensure it is contained and extinguished as soon as is practical.

#### 10.8.3.2 Noise

As the impacts at offsite receptors will be imperceptible, site specific mitigation measures are required; however the following general measures will be implemented:

- Both the MRF and the FCCP will be constructed so as to avoid any gaps at cladding joints;
- Prior to selection of the air management system and odour control unit, noise emissions data shall be assessed to ensure that emissions are entirely broadband in character;
- All mobile plant shall be fitted with flat spectrum reversing alarms;
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times;
- Plant and equipment will be maintained in a satisfactory condition and in accordance with manufacturer recommendations, and
- All noise complaints received will be logged in a register, and investigated immediately. Details of follow-up action will be included in the register.

### 10.8.3.3 Odour

An Odour Management Plan (OMP) will be prepared for the MRF that identifies all the potential sources of odours and specifies the control measures that will be implemented to effectively mitigate odour nuisance, which will include:

- All materials acceptance and processing will be carried out inside the buildings;
- The doors on the MSW/Brown Bin Bay in the MRF will be kept closed and only opened to allow vehicles to enter and leave the building;
- Odorous materials will typically be sent off-site within 24 hour of arrival and in any event within 72 hours, and
- Regular cleaning of the floor of the MSW/Brown Bin Bay.

The odour management system in the MRF will be the subject to a regular preventative maintenance programme to ensure it operates effectively. Stocks of the carbon filter media will be kept on site to minimise downtime of the system when it has to be replaced.

### 10.8.3.4 Nuisance

In addition to the measures to mitigate odour nuisance the following will be implemented:

- Daily litter patrols;
- Retaining a pest controller to implement appropriate pest and vermin control measures as required, and
- During periods of dry weather the paved yards will be damped down with water to prevent windblown dusts.

### 10.8.3.5 Aviation Safety

All wastes containing foodstuff that are attractive to birds will be delivered to the MRF in fully enclosed bin trucks and the vehicles will only be off off-loaded inside the building. The entrances will be fitted with rapid opening and closing doors, typical opening and closing time <10 seconds. As these doors also form part of the odour control system they will only be opened to allow the vehicles to enter and leave and will be closed at all other times. All processing and storage of wastes containing foodstuff will be carried out inside the building and all waste containing food stuff will be dispatched in fully enclosed vehicles. Additional measures that can be deployed if required include bird wires, netting, acoustic distress calls and kites.

## 10.9 **Monitoring**

### 10.9.1 *Construction Stage*

If required by Fingal County Council noise surveys and dust deposition monitoring will be carried out at agreed locations and frequencies, and the results submitted to the Council.

### *10.9.2 Operational Stage*

At the MRF, the emissions from the odour control unit will be monitored at the frequencies set in the EPA licence to demonstrate compliance with the emission limits. The odour control unit will be inspected regularly to ensure it is operating effectively.

Dust deposition monitoring will be carried out at locations and frequencies specified by the EPA. At a minimum this will include three locations inside the EPA licence boundary at quarterly intervals.

At both the MRF and the FCCP the discharges to the foul sewer will be monitored in accordance with the conditions of the EPA licence and the Uisce Eireann Trade Effluent Discharge Licence.

#### *10.9.2.1 Fire Safety*

The fire detection system will be subject to annual checks by a fire safety contractor. The alarm will be remotely monitored by a security company and if activated outside of operational hours the security company will notify the emergency services and nominated site personnel.

The fire extinguishers will be subject to annual inspection and replenishment/replacement as required by a fire safety contractor.

## **10.10 Cumulative Impacts**

### *10.10.1 Air Quality*

The cumulative impacts of the proposed development on Air in conjunction with the existing activities in the vicinity of the development area (Huntstown Quarry, Huntstown Energy Plan and Huntstown Bioenergy Anaerobic Digestion Plant) and permitted projects whose construction have the potential to overlap with the proposed development are assessed in Section 9.9 of this EIAR.

### *10.10.2 Noise*

The local soundscape is entirely dominated by road traffic noise. Although a number of commercial and industrial noise sources are located in the surrounding area, emissions from these do not contribute to the soundscape at receptors. The only exception is Kildonan House to the southwest of the site, where quarry operations are audible during the daytime.

The predictive noise modelling indicates that noise emissions from the proposed development will be lower than baseline noise levels at receptors, and thus cumulative impacts will not arise. While cumulative impacts will arise in relation to an increase in North Road traffic, the increase will be negligible north of the Huntstown Quarry entrance. South of the entrance, the proposed development will generate an increase in traffic noise levels of 4 dB, resulting in a not significant to slight impact. Therefore, the proposed development will not give rise to any cumulative noise impacts of significance.

### *10.10.3 Traffic*

The cumulative impacts of the proposed development on traffic in conjunction with the existing activities in the vicinity of the development area and permitted projects whose construction have the potential to overlap with the proposed development are assessed in Section 14.9 of this EIAR.



### 10.11 Residual Impacts

#### 10.11.1 Construction Stage

The construction stage will have a negative, not significant, local, likely and temporary impact on Population and Human Health.

#### 10.11.2 Operational Stage

The operational stage will have a negative, not significant/slight, local, likely and long term impact on Population and Human Health.

#### 10.11.3 Summary of Residual Impacts

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Construction Stage					
Human Health Noise	Negative	Imperceptible	Local	Likely	Short Term
Human Health Vibration	Neutral	Imperceptible	Local	Unlikely	Short Term
Operational Stage					
Human Health Air Quality	Negative	Imperceptible	Local	Likely	Medium Term
Human Health Noise	Neutral	Imperceptible to Not Significant	Local	Likely	Medium Term
Amenity	Positive	Slight	Local	Likely	Long Term

### 10.12 References

Report RI 8507: Structural response and damage produced by ground vibration from surface mines blasting (US Bureau of Mines, 1980).

British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration (1993).

International Standard ISO 9613-2:1996 Acoustics: Attenuation of sound during propagation outdoors – Part 2 General method of calculation (1996)

Guidelines on community noise (World Health Organisation, 1999).

Directive 2002/49/EC of the European Parliament and of the Council relating to the assessment and management of environmental noise (2002), transposed into Irish law by the European Communities (environmental noise) Regulations 2018 (SI no. 549/2018).

Night noise guidelines for Europe (World Health Organisation, 2009).

Design manual for roads and bridges (UK Highways Agency, 2011).

British Standard BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise (2014).

British Standard BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration (2014).

Good practice guidance for the treatment of noise during the planning of national road schemes (National Roads Authority (now Transport Infrastructure Ireland), 2014).

Guidelines for environmental noise impact assessment (Institute of Environmental Management & Assessment, 2014).

NG4 Guidance note for noise: Licence applications, surveys and assessments in relation to scheduled activities (EPA, 2016).

International Standard ISO 1996-2:2017 Acoustics – Description, measurement and assessment of environmental noise, Part 2: Determination of environmental noise levels (2017).

Noise action plan for Fingal County 2019-2023 (Fingal County Council, 2018).

Noise action plan for Dublin Airport 2019-2023 (Fingal County Council, 2018).

British Standard BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound (2019).

## **11. LANDSCAPE & VISUAL IMPACT**

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### **11.1 Introduction**

This Chapter provides an assessment of the visual impacts of the proposed development on the landscape and visual amenity, which includes a 'baseline' scenario. It identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses the residual impacts. The Chapter should be read in conjunction with Chapter 8 Biodiversity and Chapter 10 Population & Human Health.

This Chapter was prepared by Mr Jim O'Callaghan of OCM. Mr O'Callaghan holds a BA Moderatorship in Geography and an MSc in Environmental Science. He is a Chartered Member of the Institution of Waste Management, a Chartered Environmentalist and an Associate of the Institute of Environmental Management and Assessment. He has over 35 years' experience in the field of environmental consultancy services including land use and landscape and visual impact assessment of large scale industrial waste management developments.

### **11.2 Relevant Legislation & Guidelines**

The general EIA guidelines and legislation are listed in Section 1.5 and the specific guidelines relevant to the Landscape and Visual Impact Assessment taken into account in the preparation of this Chapter are:

- Guidelines for Landscape and Visual Impact Assessment (Landscape Institute & IEMA., UK 2013);
- Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities' published by the Department of the Environment and Local Government (June 2002), and
- Landscape Character Assessment (Fingal Development Plan 2017-2023).

### **11.3 Methodology**

The objective of the assessment was to determine the magnitude and significance of the proposed development to the landscape character and visual setting. Significance depends on the sensitivity of the affected landscape and visual receptor and the magnitude of change judged to have resulted from the proposed development. In considering the magnitude and significance, the following were considered:

- The sensitivity of views taking into account both the public accessibility of the land where views are possible and the likely sensitivity of that view given the distance, travelling speed (if relevant), intervening vegetation and land usage;
- The quality and value of the existing landscape;

- The degree to which the development will be visible within the surrounding area, and
- Any other changes in the existing landscape e.g. new road junctions.

While the significance or scale of impact may range from 'Imperceptible' to 'Profound' in relation to distance and proximity, the nature of the change and the sensitivities of the viewers must be considered. An individual's sensitivity can cause emotive responses that often have little or no regard to the appropriateness and/or design of the proposal and, as such, it must be borne in mind that the impact of a proposed development must be assessed based on its context.

The assessment of quality must consider the nature of the proposed change, its context, appropriateness, quality of design and the sensitivities of the viewers. The quality of impact can be determined as 'positive' or 'negative' depending on whether the change is considered to improve or reduce the quality of the landscape character or visual environment. It may also be assessed as 'neutral' if the landscape is unaffected.

## 11.4 Proposed Development

A detailed description of the proposed development is in Chapter 3. Those aspects that are relevant to the landscape and visual impact assessment are the topography; form, height and massing of the buildings; the construction materials texture and colour, the removal of the existing hedgerows/trees and the proposed landscape measures.

### 11.4.1 Topography

The site encompasses approximately 9.8 ha and comprises two fields and a section of an adjoining service road. The western field had been used for animal grazing, but is no longer used for this purpose. The eastern field had been used for tillage but is currently uncultivated. The ground levels rises from ca 78 to 79m Ordnance Datum (OD) at the site boundaries to a localised high point of 88m OD in the centre of the site.

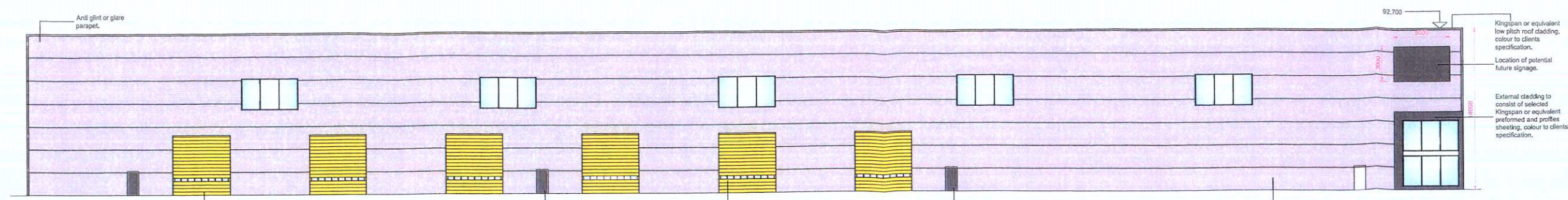
### 11.4.2 Building Form & Materials

Elevations and Sections of the MRF and the FCCP are shown on Drawing No. P004 and P006. The eaves of the Materials Recovery Building will be 15.13m above ground level, while the eaves of the FCCP will be 14m above ground level. The highest structural element will be the stack on the odour control unit at the MRF, which will extend to 16m above ground levels. The buildings will a neutral monochromatic (e.g. goose grey) external cladding and anti-glint and glare parapets.

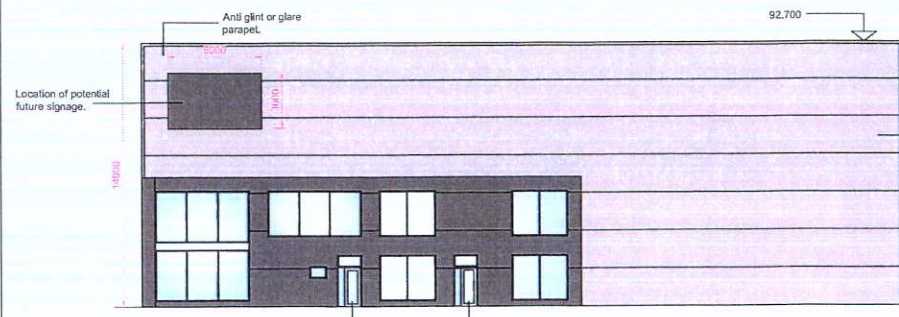
### 11.4.3 Landscape Plan

The proposed landscaping measures are shown on the Landscape Plan (Drawing 7670-L-1001). The boundary treatment will comprise native deciduous trees (*Betula pendula*, *Malus sylvestris*, *Pinus sylvestris*, *Prunus avium*, *Crataegus monogyna*, *Viburnum opulus*, *Euonymus europaeus* and *Corylus avellana*). Additional planting of native species will be carried out at the entrance to the operational yard off the access road and to the east of the MRF, south of the FCCP. Tree planting (*Acer campestre*, *Betula pendula* and *Prunus Avium*) will be carried out along the access road and at selected locations along the development boundary to supplement the existing hedgerows/treelines.

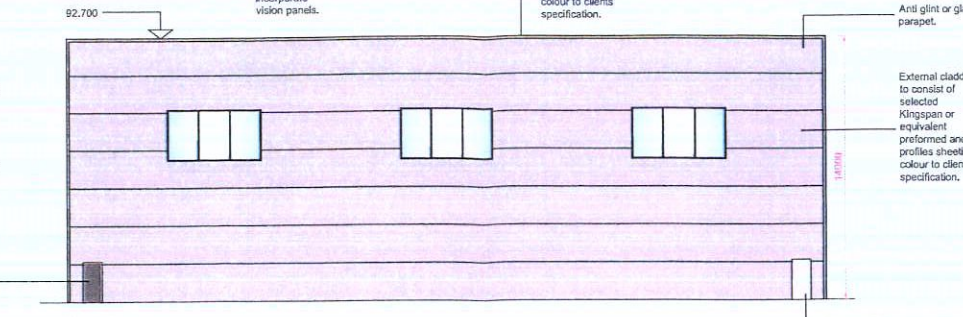
Lawns and shrubberies will be planted at the entrance to the operational yards, in the space between the buildings and the boundary treatment and around the electrical substation.



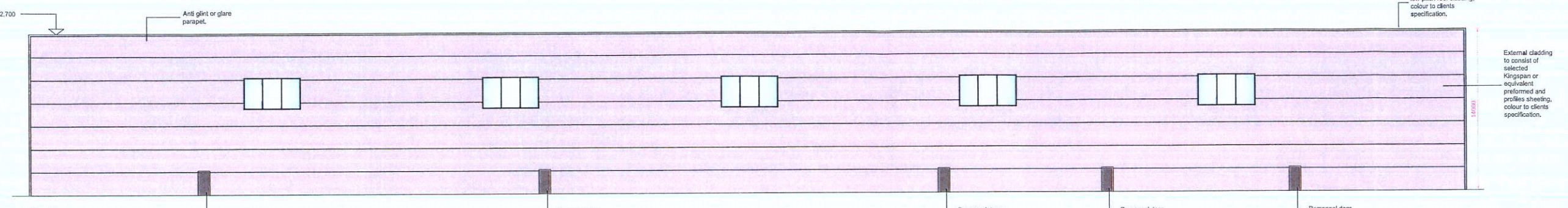
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Scale 1:200.



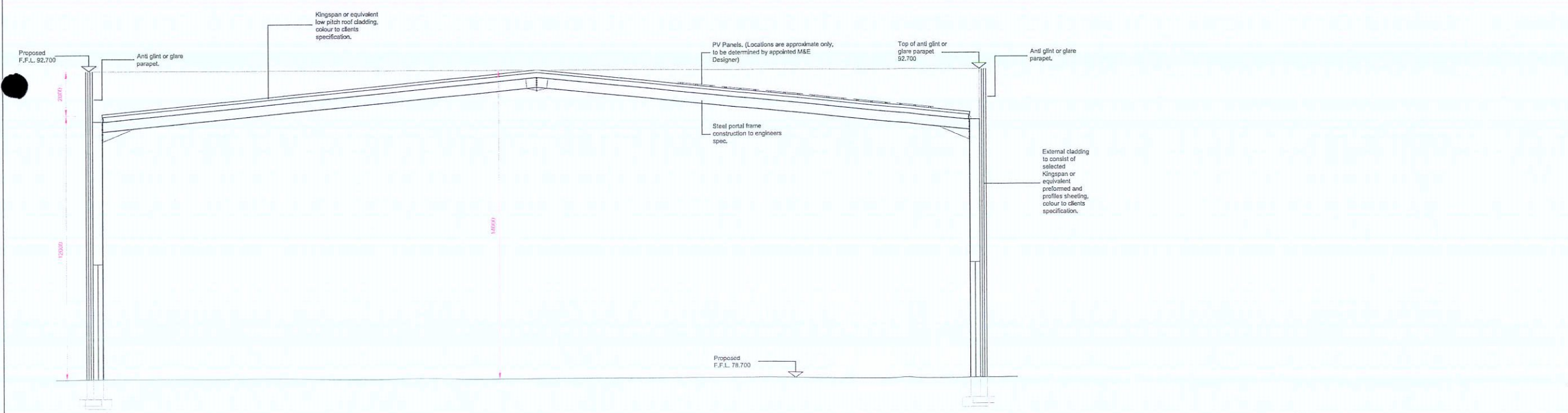
Front Elevation.  
Scale 1:200.



Rear Elevation.  
Scale 1:200.



Side Elevation.  
Scale 1:200.



Typical Section.  
Scale 1:100.

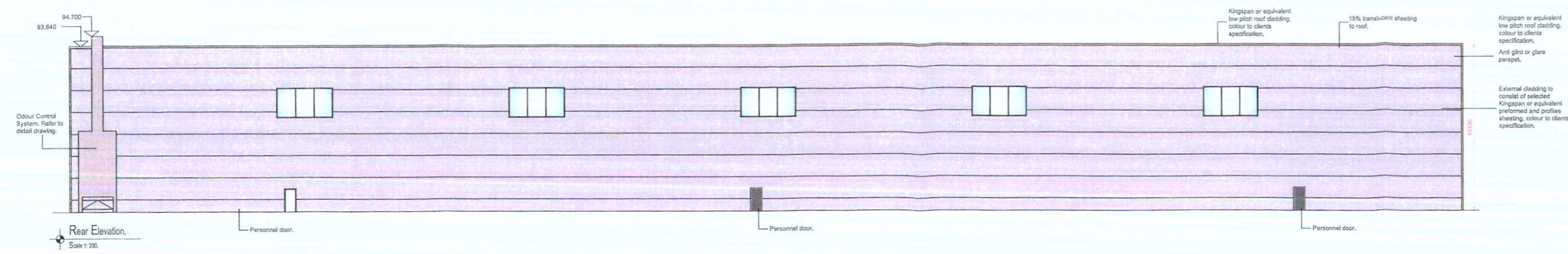
NOTES:  
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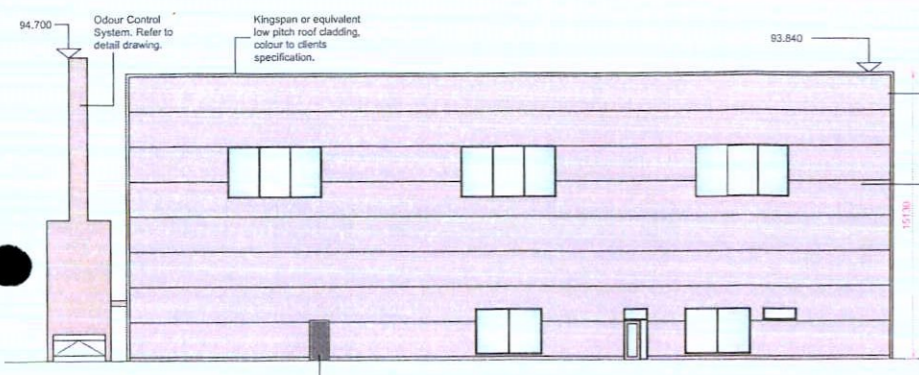
No. 3 High Street, Monaghan Town,  
Co. Monaghan. H18 X635  
Tel: 047-72175  
Website: www.coylecs.ie  
E-mail: info@coylecs.ie

Project: Phase 1 of the proposed 9.863 ha Huntstown Circular Economy Hub comprising Materials Recovery Facility, Food Container Cleaning Plant & Ancillaries at Huntstown Td / Coldwinters Td, Fingal, Co. Dublin.

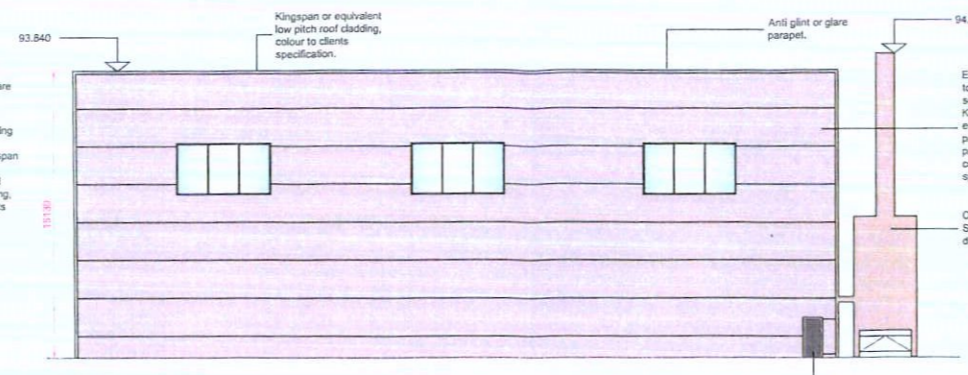
Client: Rathdrinagh Land Unlimited Company, t/a Irish Recycling Limited.			
Sheet Title: Food Container Cleaning Plant elevations & section.			
Project No.: 22-039.	Date: 18-03-23.		
Drawing No.: P004.	Scale: As shown.	Rev: F.	Checked:



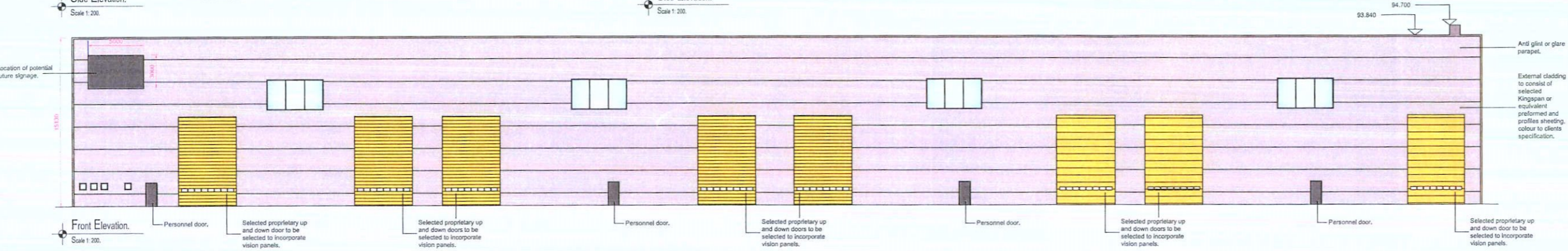
Rear Elevation  
Scale 1:200



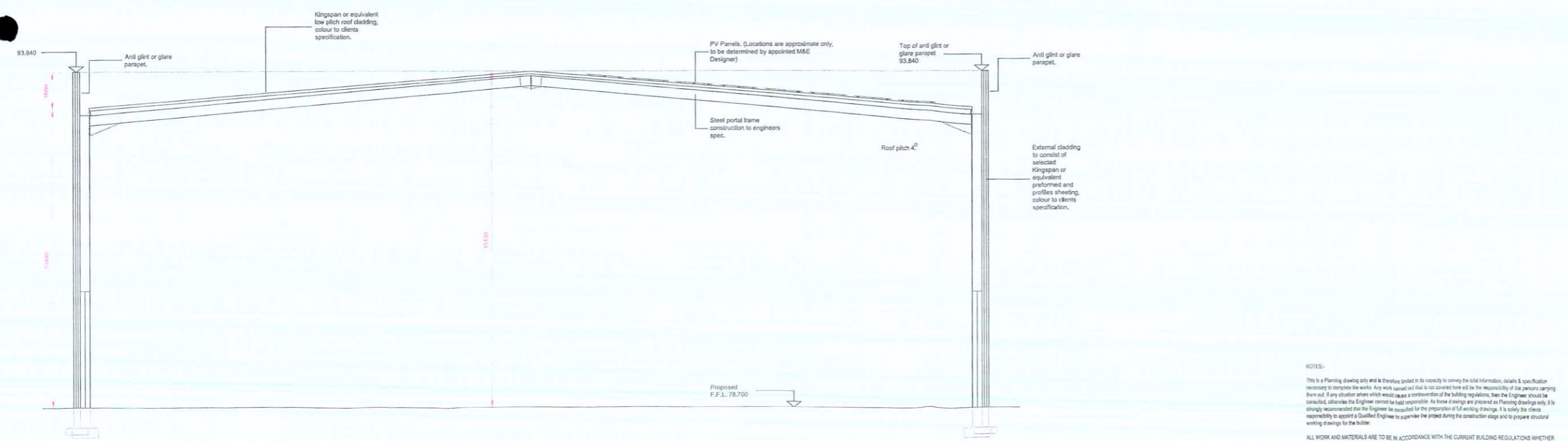
Side Elevation  
Scale 1:200



Side Elevation  
Scale 1:200



Front Elevation  
Scale 1:200



Typical Section  
Scale 1:100

NOTES:  
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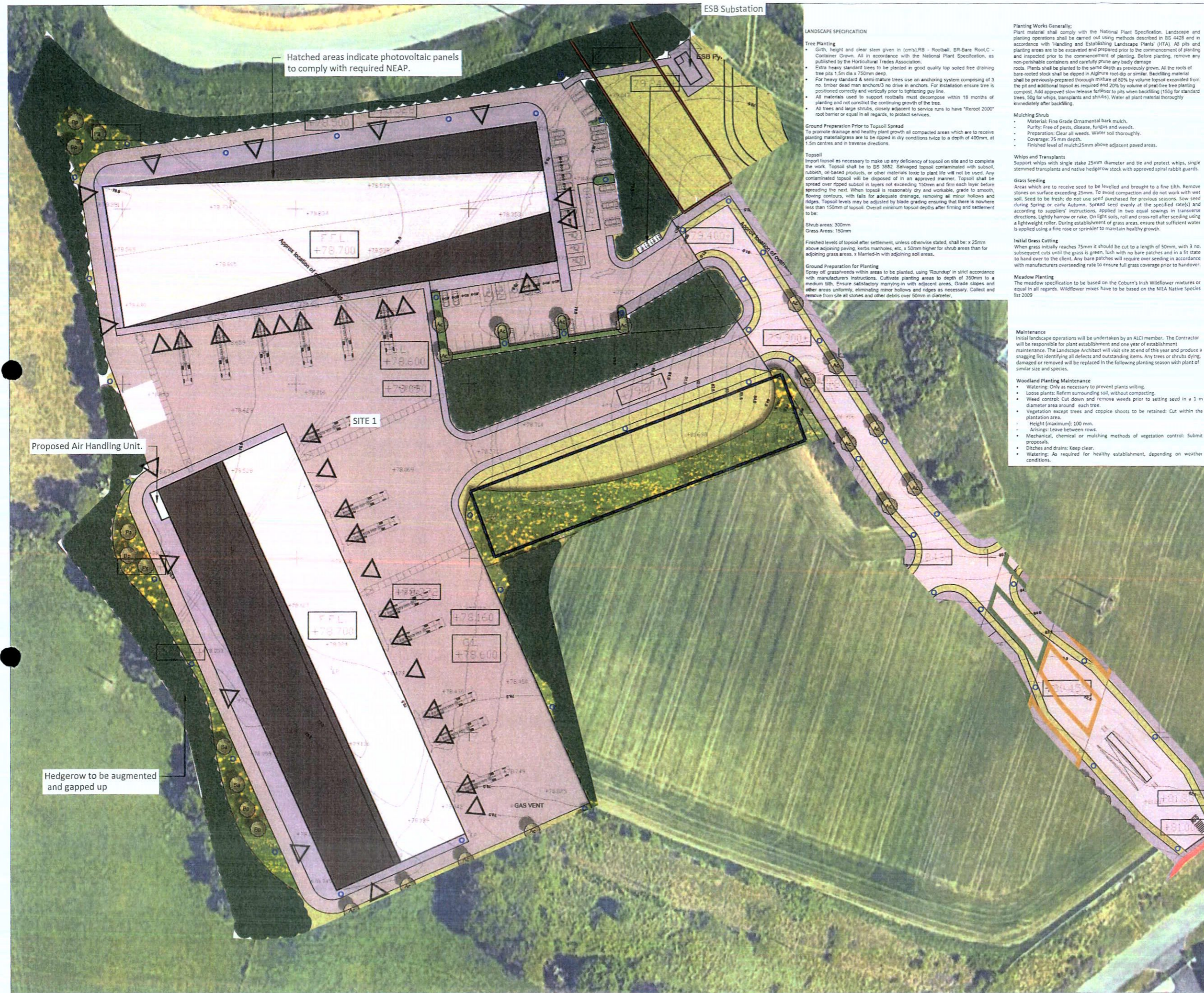
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Tel: 047-72175  
Website: www.coylecs.ie  
E-mail: info@coylecs.ie

Project: Phase 1 of the proposed 9.863 ha Huntstown Circular Economy Hub comprising Materials Recovery Facility, Food Container Cleaning Plant & Ancillaries at Huntstown Td / Coldwinters Td, Fingal, Co. Dublin.

Client: Rathdrinagh Land Unlimited Company, t/a Irish Recycling Limited.

Sheet Title: Materials Recovery Facility elevations, & section.

Project No.: 22-039.	Date: 18-04-23.
Drawing No.: P006.	Scale: As shown.
Rev: F.	Checked:



ESB Substation

Hatched areas indicate photovoltaic panels to comply with required NEAP.

Proposed Air Handling Unit.

Hedgerow to be augmented and gapped up

LANDSCAPE SPECIFICATION

**Tree Planting**

- Girth, height and clear stem given in (m)(s)RB - Rootball, BR-Bare Root, C - Container Grown. All in accordance with the National Plant Specification, as published by the Horticultural Trades Association.
- Extra heavy standard trees to be planted in good quality top soiled free draining tree pits 1.5m dia x 750mm deep.
- For heavy standard & semi-mature trees use an anchoring system comprising of 3 no. timber dead man anchors/3 no drive in anchors. For installation ensure tree is positioned correctly and vertically prior to tightening guy line.
- All materials used to support rootballs must decompose within 18 months of planting and not constitute the continuing growth of the tree.
- All trees and large shrubs, closely adjacent to service runs to have "reroot 2000" root barrier or equal in all regards, to protect services.

**Ground Preparation Prior to Topsoil Spread**

To provide drainage and healthy plant growth all compacted areas which are to receive planting material/grass are to be ripped in dry conditions twice to a depth of 400mm, at 1.5m centres and in traverse directions.

**Topsoil**

Import topsoil as necessary to make up any deficiency of topsoil on site and to complete the work. Topsoil shall be to BS 3682. Salvaged topsoil contaminated with subsoil, rubbish, oil-based products, or other materials toxic to plant life will not be used. Any contaminated topsoil will be disposed of in an approved manner. Topsoil shall be spread over ripped subsoil in layers not exceeding 150mm and firm each layer before spreading the next. When topsoil is reasonably dry and workable, grade to smooth, forming contours, with falls for adequate drainage, removing all minor hollows and ridges. Topsoil levels may be adjusted by blade grading ensuring that there is nowhere less than 150mm of topsoil. Overall minimum topsoil depths after firming and settlement to be:

Shrub areas: 300mm  
Grass areas: 150mm

Finished levels of topsoil after settlement, unless otherwise stated, shall be: x 25mm above adjoining paving, kerbs manholes, etc. x 50mm higher for shrub areas than for adjoining grass areas, x 100mm in with adjoining soil areas.

**Ground Preparation for Planting**

Spray off grass/weeds within areas to be planted, using 'Roundup' in strict accordance with manufacturer's instructions. Cultivate planting areas to depth of 350mm to a medium loth. Ensure satisfactory mounding-in with adjacent areas. Grade slopes and other areas uniformly, eliminating minor hollows and ridges as necessary. Collect and remove from site all stones and other debris over 50mm in diameter.

**Planting Works Generally:**

Plant material shall comply with the National Plant Specification. Landscape and planting operations shall be carried out using methods described in BS 4428 and in accordance with 'Handing and Establishing Landscape Plants' (HTA) All pits and planting areas are to be excavated and prepared prior to the commencement of planting and inspected prior to the commencement of planting. Before planting, remove any non-perishable containers and carefully prune any badly damaged roots. Plants shall be planted to the same depth as previously grown. All the roots of bare-rooted stock shall be dipped in Alginate root-dip or similar. Backfilling material shall be previously-prepared through mixture of 80% by volume topsoil excavated from the pit and additional topsoil as required and 20% by volume of peat-free tree planting compost. Add approved slow release fertilizer to pits when backfilling 150g for standard trees, 50g for whips, transplants and shrubs. Water all plant material thoroughly immediately after backfilling.

**Mulching Shrub**

- Material: Fine Grade Ornamental Bark mulch.
- Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 75 mm depth.
- Finished level of mulch 25mm above adjacent paved areas.

**Whips and Transplants**

Support whips with single stake 25mm diameter and tie and protect whips, single stemmed transplants and native hedgerow stock with approved spiral rabbit guards.

**Grass Seeding**

Areas which are to receive seed to be levelled and brought to a fine tith. Remove stones on surface exceeding 25mm. To avoid compaction and do not work with wet soil. Seed to be fresh, do not use seed purchased for previous seasons. Sow seed during Spring or early Autumn. Spread seed evenly at the specified rates) and according to suppliers' instructions. Applied in two equal sowings in transverse directions. Lightly harrow or rake. On light soils, roll and cross-roll after seeding using a lightweight roller. During establishment of grass areas, ensure that sufficient water is applied using a fine rose or sprinkler to maintain healthy growth.

**Initial Grass Cutting**

When grass initially reaches 75mm it should be cut to a length of 50mm, with 3 no. subsequent cuts until the grass is green, lush with no bare patches and in a fit state to hand over to the client. Any bare patches will require overseeding in accordance with manufacturers overseeding rate to ensure full grass coverage prior to handover.

**Meadow Planting**

The meadow specification to be based on the Coturn's Irish Wildflower mixtures or equal in all regards. Wildflower mixes have to be based on the NIEA Native Species list 2009

**Maintenance**

Initial landscape operations will be undertaken by an ALCI member. The Contractor will be responsible for plant establishment and one year of establishment maintenance. The Landscape Architect will visit site at end of this year and produce a snagging list identifying all defects and outstanding items. Any trees or shrubs dying, damaged or removed will be replaced in the following planting season with plant of similar size and species.

**Woodland Planting Maintenance**

- Watering: Only as necessary to prevent plants wilting.
- Loose plants: Reform surrounding soil, without compacting.
- Weed control: Cut down and remove weeds prior to setting seed in a 1 m diameter area around each tree.
- Vegetation except trees and coppice shoots to be retained: Cut within the plantation area.
- Height (maximum): 100 mm.
- Arisings: Leave between rows.
- Mechanical, chemical or mulching methods of vegetation control: Submit proposals.
- Ditches and drains: Keep clear.
- Watering: As required for healthy establishment, depending on weather conditions.

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Unless otherwise stated all dimensions are in millimeters, where dimensions are not given, drawings must not be scaled and the matter must be referred to the Landscape Architect. If the drawing includes quantities of materials, the matter must be referred to the Landscape Architect. All dimensions must be checked on site. The Landscape Architect need not be informed of the Contractor's, or any subcontractor's, use of the drawings.  
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT CONSULTANT'S DRAWINGS.

LEGEND:  
SOFTWARES

**Trees**

Tree Tags	Species	Girth	Height	Spec
Pa	Prunus avium 'Plena'	12-14cm	2.0-3.0m	3air (RUB)
Sa	Sorbus aucuparia 'Floran'	12-14cm	2.0-3.0m	3air (RUB)
Bp	Betula pendula 'Silver Birch'	10-12cm	1.5-2.0m	3air (RUB)
Ac	Acer campestre 'Field maple'	12-14cm	2.0-3.0m	3air (RUB)
Ps	Pinus sylvestris - Scots pine'	12-14cm	2.0-3.0m	3air (RUB)

**Native Boundary Planting**

Species	Height	Stock	Spec	Density
Corylus avellana	80-100cm	BR	1+2 Bushy	0.5/m2
Pinus sylvestris	80-100cm	C, SL	leader/lateralis	0.5/m2
Viburnum opulus	80-100cm	BR	1+2 Bushy	0.5/m2
Eunonymus europaea	80-100cm	BR	1+2 Bushy	0.5/m2
Betula pendula	80-100cm	BR	1+2 Bushy	0.5/m2
Crataegus monogyna	80-100cm	BR	1+2 Bushy	0.5/m2
Prunus avium	80-100cm	BR	1+2 Bushy	0.5/m2
Ilex aquifolium	125-150cm	RB	leader/lateralis	0.5/m2
Sambucus nigra	80-100cm	BR	1+2 Bushy	0.5/m2

**Grass Seeds**

Grass seed with general seed mix e.g. Mix: 30% (Perennial Ryegrass) + 30% (Perennial Ryegrass) + 40% (Strong creeping red fescue) + Sowing rate: 35g/m<sup>2</sup> (12.5kg/20 bags/ha @ 25g/m<sup>2</sup>) Cutting height: Between 20-50mm

**Shrub Planting**

Species	Stock	Height	Spec	Density %
Hebe albicans Red Edge	C2	20-30cm	Bushy	4/m2 30
Pyracantha 'Orange Glow'	C3	40-60cm	Bushy	4/m2 30
Cornus alba 'Sibirica'	C2	40-60cm	Bushy	3/m2 20
Viburnum tinus 'Lucidum'	C5	40-60cm	Bushy	3/m2 20

HARDWORKS

- Proposed Footway
- Road access & Car Parking
- Proposed Yard
- Irish Water Permanent works area wayleave
- Irish Water Temporary works area wayleave

NOTE: For all boundary treatment details please refer to architects drawing

LAYOUT UPDATED	By / CH	Date	Rev
Updated Layout	KH / AB	17/04/23	D04
FOR INFORMATION	DC / AB	03/04/23	D03
FOR INFORMATION	DC / AB	03/01/23	D02
FOR INFORMATION	DC / AB	03/01/23	D01

Status: FOR INFORMATION

**ph Park Hood**  
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Client: Rathdrinagh Land Unlimited Company, t/a Irish Recycling Limited

Project: Huntstown MRF  
Dublin

Title: Huntstown Circular Economy Hub - Phase One  
Sheet 1 of 1

Job No: 7670 | Scale@A1 1-500 | Date: April 2023

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Revision: D04

## 11.5 Receiving Environment

### 11.6 Landscape Character

The landscapes of North Dublin County are a dynamic mix of living elements that respond to history, culture, natural cycles, weather events, water, climatic and economic factors including those that relate to agriculture, industry, energy, transport, settlement and tourism.

The Fingal Development Plan's Landscape Character Assessment (LCA) classifies Fingal's landscapes based on the types and values, and sensitivities. The LCA defines 6 Landscape Character Types (LCT) representing areas of distinctive character that makes one landscape different from another, such as uplands or the coast.

The LCA evaluates each landscape character type ranging from **Exceptional** to **Modest** to **Low** and also assesses the sensitivity of each character type i.e. its ability to sustain its character in the face of change. Sensitivity criteria range from **High** to **Low**, with a highly sensitive landscape being likely to be vulnerable to change, while a low sensitivity is likely to be less at risk from change. The six LCTs are:

- Rolling Hills;
- High Lying Agriculture;
- Low Lying Agriculture;
- Estuary;
- Coastal, and
- River Valleys and Canal

The development site is in the Low Lying Agricultural Area, which is characterised by a mix of pasture and arable farming on low lying land, with few protected views or prospects. This LCT is categorised as having a **Modest** value and a **Low** sensitivity. It contains pockets of important value areas requiring particular attention, such as important archaeological monuments and demesnes and also the Feltrim Hill and Santry Demesne proposed Natural Heritage Areas.

This LCT can absorb a certain amount of development once the scale and forms are kept simple and surrounded by adequate screen boundaries and appropriate landscaping to reduce impact on the rural character of the surrounding roads.

#### 11.6.1.1 Local Landscape

At a site specific level, the facility is an area zoned for heavy industry, with industrial type developments to the west and south and extensive quarrying to the north and west. It is not in an area designated as Highly Sensitive, Special Amenity Area or of High Amenity Value and is not overlooked by any designated views or prospect areas.

There are two 38 kv and one 110 kv overhead powerlines running from south-east to north-west across the north-eastern part of the site, and a 10kv line running from south-west to north-east through the centre of the site, off of which is a south-east to north-west spur. The power lines dominate the local landscape; however works are currently on-going to remove the overhead lines and lay them underground inside the eastern and northern development site boundaries.



### 11.6.2 *Visibility*

Given the local land use, topography and existing vegetation the views of the site are limited to the North Road, the access roads to Huntstown Quarry to the west and the Substation service road to the south.

## 11.7 **Impacts**

The proposed development will impact on the landscape character to varying degrees based on its perceived nature and scale. These effects are tempered and conditioned by sensitivities associated with the receptor. The duration of such impacts is however determined by the design life of the proposed development. In this case the development has a design life of up to 60 years and in this instance the impacts on landscape character are therefore deemed to be of long-term duration.

In assessing the landscape character impacts, there are three main inter-related aspects to be addressed in considering the development proposals, namely:

- The perceived character of the area – how it is affected by the proposal;
- Effects of the proposed development on social and cultural amenity, and
- The proposed views of the development, relative to the existing site and the associated impact on visual amenity.

### 11.7.1 *Trees, Woodland and Hedgerows*

To facilitate the construction and operation of the development a ca 170m section of hedgerow along the existing internal field boundary will have to be removed. The hedgerows/treelines along the southern and western boundaries will be retained.

### 11.7.2 *Landscape Character*

The development will result in a change to the landscape character and the conversion of former agricultural land to industrial use. However the subject site is zoned for heavy industrial use and the proposed development is consistent with this zoning

### 11.7.3 *Views*

#### 11.7.3.1 Construction Stage:

In the construction stage the following have the potential to cause temporary impacts:

- Construction of the new entrance;
- Temporary site works – hoarding, lighting, cranes, car parking, storage areas;
- Hedgerow clearance;
- Groundworks – cut and fill excavations;
- Installation of foundations and site services;

- Construction of buildings, and
- Construction traffic;

#### 11.7.3.2 Operational Stage

The principal elements likely to give rise to landscape and visual impact in the long term are:

- Permanent entrance off the service road;
- Alterations to ground levels;
- Building massing and heights;
- New structures, road, lighting, boundaries and pathways, and
- Landscape works.

#### 11.7.4 *Visibility into the Site*

For the visual impact assessment, viewpoints were selected to represent the likely visual impact from a variety of direction around the site. The viewpoints are shown on Figure 11.1. The photographs were taken in early Spring before the foliage on the deciduous trees had established.


#### **Visual 1: View Point 1 Huntstown Quarry Access Road North of Phase 1 Looking South West**



#### *Existing View:*

From this location Phase 1 is screened by the embankment along the access road. The 110 kv overhead power lines are visible, as are the storage tanks in the Huntstown Bioenergy plant



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*Proposed Changes and Visual Impact:*

The embankment is outside the proposed development area and will not be interfered with. Boundary treatment comprising native tree species will be planted along the northern boundary of Phase 1. Pending the achievement of the final height of the trees, the upper part of the northern elevation of the MRF will be visible all year round. When the trees are fully grown the building may be partially visible in the winter/spring.

**Visual 2: View Point 2 East of View Point 1 on Huntstown Quarry Access Road Looking South-West**



*Existing View:*

An existing farm access gate allows view into the site, with existing field boundary hedgerow and overhead power line visible.

*Proposed Changes and Visual Impact:*

The access gate will be removed and the gap planted with native tree species as part of the proposed boundary treatment. The existing roadside hedgerow will be retained. Pending the achievement of the final height of the trees, the upper parts of the northern and eastern elevations of the MRF will be visible all year round. When the trees are fully grown the building may be partially visible in the winter/spring.

**Visual 3: View Point 3 Close to Residence on North Road Looking South West**



*Existing View:*

Roadside hedgerow/treeline screen the development site

*Proposed Changes and Visual Impact:*

The road side hedges are outside the development area and will be retained. The upper parts of the eastern elevations of the MRF and FCCP may be partially visible in the winter/early spring.

**Visual 4: View Point 4 South of Viewpoint 3 on North Road Looking South West**



*Existing View:*

A combination of the topography and existing treeline/woodland screen Phase 1 from view. The overhead power lines are partially visible

*Proposed Changes and Visual Impact:*

The treelines and woodland will be retained and Phase 1 is unlikely to be visible from this view point.

**Visual 5: View Point 5 Entrance to Access Road to Eirgrid Station Looking west**



*Existing View:*

The roadside embankment and existing hedgerow screen Phase 1 from view.

*Proposed Changes and Visual Impact:*

The embankment and hedgerow are outside the development boundary and will be retained. Phase 1 will not be visible from this view point.

**Visual 6: View Point 6 South of View Point 5 on Access Road to Eirgrid Station Looking west**



*Existing View:*

A combination of the topography, fence line and hedgerow screen Phase 1 from view.

*Proposed Changes and Visual Impact:*

The fence line hedgerow will be retained. Phase 1 will not be visible from this view point.

**Visual 7: View Point 7 South of View Point 6 on Access Road to Eirgrid Station Looking North-west**



*Existing View:*

A combination of the topography, fence line and hedgerow screen Phase 1 from view.

*Proposed Changes and Visual Impact:*

The fence line hedgerow will be retained. Phase 1 will not be visible from this view point.

## 11.8 Baseline Scenario

If development does not proceed the land use at the site will not change, with no alteration to the landscape character and no additional visual intrusion.

## 11.9 Prevention & Mitigation Measures

### 11.9.1 Design Stage

The Fingal Development Plan 2017 to 2023 sets out the principles for development in the 'Low Lying Agricultural' LCT

- The wider LCT, being intensively farmed, will depend on the retention and proper maintenance of deciduous hedgerow systems in order to preserve some of its original character.
- Sensitive siting and design of individual buildings and groups of buildings as well as site treatment appropriate to the area will be of importance in this landscape.

These principles were taken into consideration in the design stage; however, as with any development, some degree of impact is inevitable and wherever possible measures have been proposed to mitigate the adverse nature of these impacts. In the case of the proposed development the visual impact will be intrusion and not obstruction.

The building heights were the lowest that allow the safe internal operations while complying with aviation safety requirements. The height of the stack on the odour control unit was determined by the air dispersion modelling. The colours of the external building materials were selected to minimise visual intrusion.

It was a design objective to retain the existing hedgerows around the development boundary. A detailed landscape management plan has been prepared and a copy is in Appendix 11.1. It is proposed to plant native trees species along the northern and western boundaries to supplement the existing hedgerows. Additional planting will be carried out to the east of the MRF and south and east of the FCCP enhance the visual appearance of the site and compensate for the loss of the existing hedgerow along the internal field boundary.

### 11.9.2 Construction Stage

Careful attention will be paid to avoiding any potentially adverse construction-related effects on the adjacent residences. Operating a well-managed, organised and planned construction site, with adequate control of construction traffic and working activity, is key to avoiding/minimising such impacts. In addition, any lighting required during the construction phase should be located sensitively to avoid unnecessary light spill into the surrounding residential areas.



### *11.9.3 Operational Stage*

Prevention and mitigation measures are not required.

## **11.10 Monitoring**

### *11.10.1 Construction Stage*

In the construction stage the following will be implemented:

- Set Up– clearly identify trees and hedgerows that are to be retained and protected – ensuring tree protection measures are then place. Clearly identify trees and vegetation that are to be removed.
- Excavation stage – ensure existing vegetation is adequately protected and that topsoil is correctly stripped and stored for landscape reinstatement
- Landscape Works - ensure that landscape proposals are being implemented correctly

### *11.10.2 Operational Stage*

In the operational stage long term maintenance plan will be put in place as specified in Sections 4 and 5 of the Landscape Management Plan in Appendix 11.1.

## **11.11 Cumulative Effects**

The proposed development will have a not significant, negative, local and long term cumulative impact on the landscape.

## **11.12 Residual Impacts**

### *11.12.1 Landscape*

The development will alter the existing landscape character as a result of changing from agricultural to industrial use, but will have no impact on the existing boundary hedgerows, amenities or cultural heritage. The impact will be negative, not significant, local, likely and long term.

### *11.12.2 Visibility*

The combination of the topography and existing vegetation effectively screens the proposed development from the majority of public view points. The will be partially visible all year round from a view point on the access road to Huntstown Quarry to the north west and from the new entrance off the service road to the Substation, however at the other viewpoints the site will either be fully screened or only partially visible over the winter period.

In the context of the surrounding landscape, which is dominated by quarrying and industrial type units, the visual impact will be negative, not significant, local, likely and long term.

11.12.3 Summary of Residual Impacts

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Landscape Character	Negative	Not Significant	Local	Likely	Long Term
Visual Intrusion	Negative	Not Significant	Local	Likely	Long Term

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## 12. CULTURAL HERITAGE

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### 12.1 Introduction

This Chapter describes the archaeological, architectural and cultural heritage significance of the development site and its environs and assesses the impact of the proposed development including a 'baseline' scenario. It identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses the residual impacts.

This Chapter was prepared by Mr Jim O'Callaghan of OCM and is based on the Archaeological Impact Assessment completed by Mr C oil n O Drisceoil MA MIA 1 of Kilkenny Archaeology in 2021, a copy of which is in Appendix 12.1.

### 12.2 Relevant Legislation & Guidance

The general EIA legislation and guidance documents are referenced in Sections 1.5 of this EIAR. In addition the Heritage Act (1995) identifies the various aspects of heritage, including archaeological monuments and objects, architectural heritage, fauna, flora, geology, heritage gardens and parks, heritage objects, inland waterways, landscapes, monuments, seascapes, wildlife habitats, and wrecks.

### 12.3 Methodology

The Kilkenny Archaeology Assessment conformed to the methodologies recommended in 'Framework and Principles for the Protection of the Archaeological Heritage' issued by the Department of Arts, Heritage, Gaeltacht and the Islands (1999) and was in accordance with the legislative frameworks of the National Monuments Acts 1930-2004, the Heritage Act 2000 and the European Convention on the Protection of the Archaeological Heritage (ratified by Ireland 1997). It was also in conformance with the requirements of the Fingal Development Plan 2023 2029 which has the following objectives:

- Objective (HCA07) Archaeology And Development Design to 'Ensure archaeological remains are identified and fully considered at the very earliest stages of the development process, that schemes are designed to avoid impacting on the archaeological heritage
- Objective HCA09 Archaeological Impact Assessment 'Require that proposals for linear development over one kilometre in length; proposals for development involving ground clearance of more than half a hectare; or developments in proximity to areas with a density of known archaeological monuments and history of discovery; to include an Archaeological Impact Assessment and refer such applications to the relevant Prescribed Bodies'.

#### 12.3.1 Scope

This assessment comprised a desk-based study, a field survey of the development site and archaeological test excavations.

#### 12.3.1.1 Desk-Study

The study area comprised a ca 2 km radius of the proposed development site. The desk study involved a review of primary and secondary documentary sources to determine the archaeological and historical background to the proposed development area and a review of reports on previous archaeological investigations undertaken within the vicinity of the site.

#### 12.3.1.2 Field Survey

The field inspection was undertaken to identify any potential impacts the proposed development might have upon recorded archaeological monuments on and in the environs of the development site and to identify any previously unrecorded archaeological monuments or areas of archaeological potential.

#### 12.3.1.3 Archaeological Test Excavations

Archaeological test excavations were completed under Archaeological Excavation Licence 20E0601 in December 2020, in accordance with a Method Statement submitted to the National Monuments Service and the National Museum of Ireland.

### 12.4 **Proposed Development**

Chapter 3 provides a full description of the proposed development. Those aspects of the development of relevance to Cultural Heritage are:

Site clearance including stripping and stockpiling of soils;

- Excavation and fill to achieve formation levels;
- Excavation works for building foundations, roads sub-base and underground services, and
- Construction of the buildings, paved yards and installation of drainage systems.

### 12.5 **Receiving Environment**

#### 12.5.1 *Study Area*

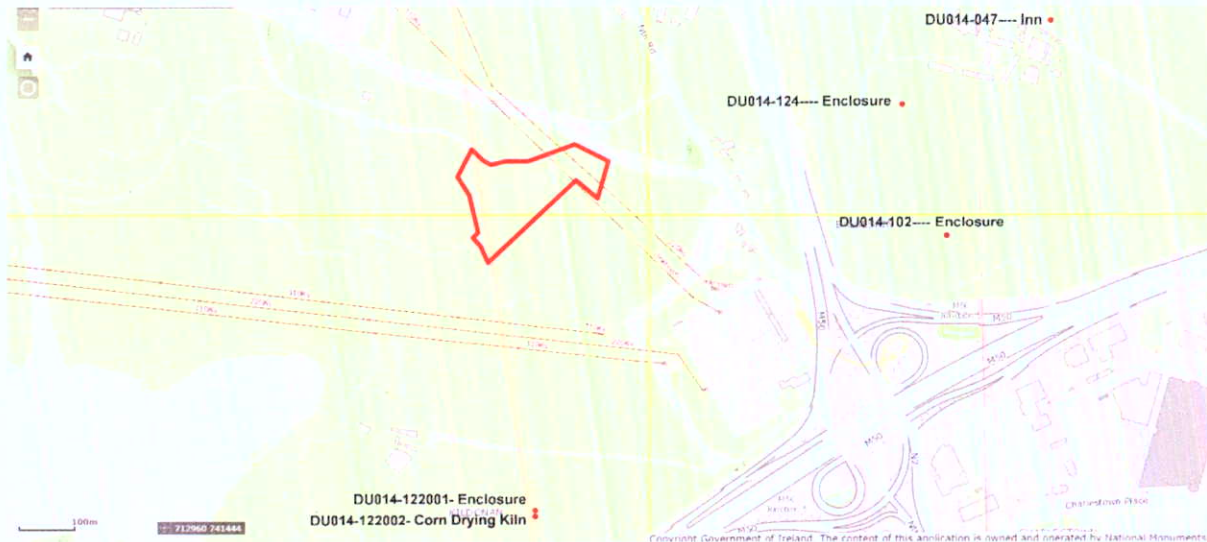
The proposed development site-covers 9.863 ha and encompasses former agricultural land and a section of the service road to the Eirgrid Substation. The western part of the site is a scrub field and is defined on the west by a field boundary. A second field boundary traverses the site and marks the division with a tillage field to the east. This field contains a steep hill that has been partially quarried for gravel. The gravel pit is marked on the first edition Ordnance Survey Ireland map and subsequent editions.

#### 12.5.1.1 Prehistoric Period

There are five known prehistoric sites (pre c. 500 AD) within the study area, as shown on Figure 12.1. The low number may be attributed to the flat terrain and heavy soils of north county Dublin. The most significant site is a Neolithic causewayed enclosure in Kilshane Townland [DU014-093], which is 1.5 km

north of the development site on a gently undulating gravel ridge associated with tributaries of the Ward River.

The other features include a Ring-ditch [DU014-015], 500m to the north of the development site in the townland of Coldwinters; a second ring-ditch [DU014-100] approximately 1.2km to the north-east in the townland of Newtown and two burnt mound sites, one (DU014-050) in the townland of Grange 1.3km to the west and the other (Site 1 of 031450) in the townland of Newtown, 1km north of the development site.



**Figure 12.1 Prehistoric Monuments**

#### 12.5.1.2 Early Medieval Period

The study area is within the plain of Brega and the earliest historical records note that the Síol nÁedo Sláine, a dynasty of the southern Uí Néill, were the dominant rulers in the area during the early medieval period. The dominant monument from this era (500 – 1169 AD) is the ringfort. These monuments were primarily settlements and may also have been for people to retreat into at times of conflict, or enclosures to protect cattle. Sometimes souterrains, which are stone or wooden lined tunnels leading to chambers or hidden exits, are present.

There are four possible ringforts, five enclosures and one souterrain within the study area. Only one of the ringforts is extant. The nearest ringfort (DU0140-006002) is c. 1.3km to the north in the townland of Newtown. This now levelled monument was recorded prior to its destruction in 1953.

Elsewhere in Newtown, a probable levelled ringfort (DU014-097) was identified from cropmarks on aerial photography c. 250m east of (DU014-006.001). Also in Newtown is an oval enclosure [DU014-007]. An enclosure [DU014-016] recorded from aerial photography in neighbouring Coldwinters townland, approximately 800m east of the development area may also have been a ringfort. Another possible enclosure (DU014-017) is recorded to the east

Two enclosures in Baleskin (DU014-124 & and DU014-102), identified by cropmarks, are located 650m and 750m to the east of the development site. Three enclosures (possible ringforts) and a possible souterrain are located in Cloghran, between 1.7 – 1.8km west of the development site. The one considered most likely to have been a ringfort (DU014:014.001) was on a north facing slope under tillage. A possible souterrain (DU014:001.003) was identified within the one of other possible ringforts

(DU014:014.002). The extant ringfort (DU014-029) is in the townland of Cappoge, 1.5km south of the development site. It is still visible, albeit damaged from farm machinery.

It is possible that some of the churches and graveyards discussed in the next section may have early medieval origins, although this is not certain. A possible candidate is a series of 123 Christian burials excavated in 1988, (Site 99E0220), which is 1.8 km northwest of the development site.

### 12.5.1.3 Medieval Period

The arrival of the Anglo-Normans gave rise to profound changes in the cultural and political landscape. In 1172 King Henry II made Hugh de Lacy palatinate of the lands of Meath, which probably included the Barony of Castleknock. De Lacy then granted Hugh Tyrell the lands of Castleknock on behalf of the king.

There are references to Huntstown townland during the medieval period and medieval monuments occupy it and its environs. The name itself is thought to translate as the land of the Hunt family, an Anglo-Norman family who briefly feature in documentary sources until the 14th century, when the last member of the lineage was executed for treason.

Anglo-Norman settlement in the part of Ireland where the development site is located was characterised initially by motte and bailey castles, which were often set up along strategic locations overlooking rivers or important route ways. They comprised a large earthen mound on top of which was a timber castle within a palisade. A fosse or moat encircled the mound to provide added defensive security, and sometimes an outer area known as a bailey was constructed. This too was delineated by a defensive ditch or palisade.

There are two motte and bailey castles within the study area – Newtown (DU014-013) and Dunsoghly (DU014-005.003). Both are north-west of the development site, with Newtown being the closest at 900m. The Newtown motte was destroyed in 1952 but the site is visible as a soil mark on aerial photographs and is also shown on the six inch map. Unlike Newtown, the Dunsoghly motte still partially survives on a natural rise in the landscape, not least because a modern farm is built on the top of it.

As the Middle Ages progressed castle forms changed from mottes to tower houses. Tower houses are substantial stone structures that are often square or rectangular shaped with few windows. There are two tower houses in the study area. One is at Dunsoghly (DU014-005001), approximately 250m NW of Dunsoghly motte and c. 2km from the development site, and the second at Cappoge (DU014-027), 1.6km south of the development site.

Dunsoghly castle [DU014-005001] is a well preserved tower house dating to the late 15th-century. It is associated with the Plunkett family (Tutty, 1979, 155-7). It is four storeys high and has four corner towers and is built of limestone. Adjoining the castle is a medieval church (DU014-005002). Cappoge castle was a three storey structure that was knocked down before 1860.

A possible church, burying ground and a domestic well (DU014-01200103) are shown on a first edition map as being in the townland of Killshane, 1km north of the development site. However, no burials or an associated church have been found and this area has been subjected to extensive quarrying.

#### 12.5.1.4 Post Medieval Period

There are twenty cultural heritage sites within the study area associated with the post-medieval period (c. 17th to c. 19th century). None are recorded in the National Inventory of Architectural Heritage for Fingal, but five are in the Sites and Monuments Record. These include a 16th / 17th century probable fortified house at Dubber (DU014-018), which is 1.8km from the development site; a house in the same area built out of the ruins of Dubber castle (DU084-017); an Inn in Dubber (DU014-017), and two houses / a chapel and a crucifixion plaque at Dunsoghly (DU005-002, -004, -005, -006), 1.9km north east of the development site.

There are fourteen quarries and six gravel pits, including the one in the east of the development site, which probably date from the post-medieval period. The quarries pre-date Huntstown Quarry, which was opened in the 1970s and not developed from an earlier quarry. There are also two limekilns in the study area

There are references to Huntstown in historical sources, although there are three townlands with the name of Huntstown in Dublin, two of which are in the Barony of Castleknock and one in the Barony of Coolock.

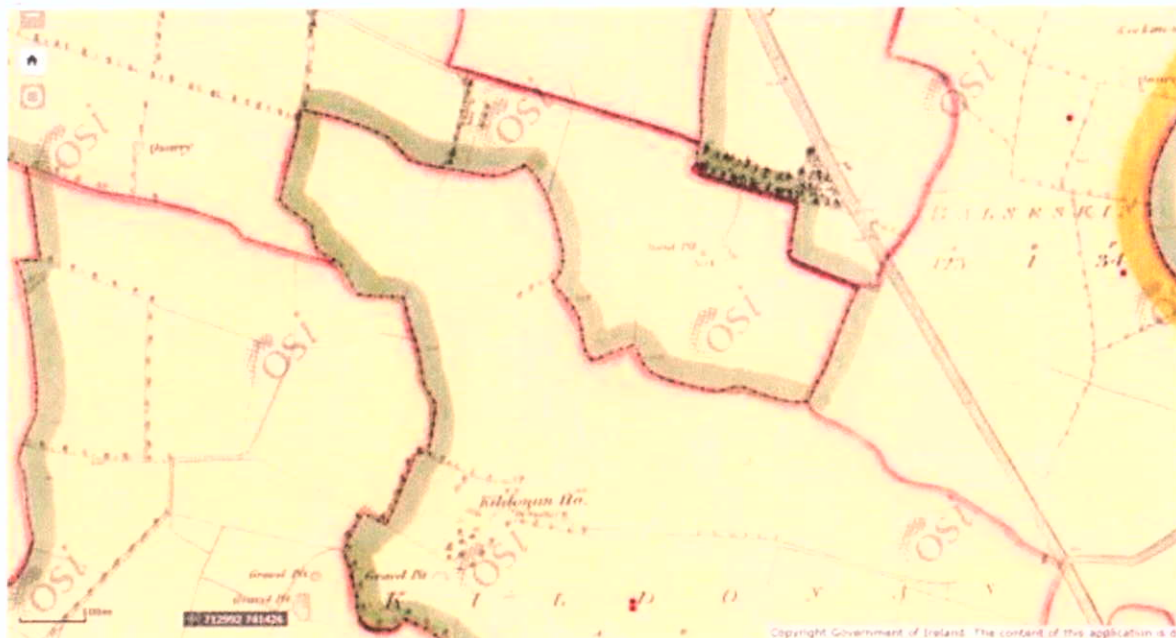
The earliest mentioned person linked to Huntstown of Castleknock Parish is a merchant Hoxes Cotes 'of Huntstown and Johnston in Castleknock Parish, Co. Dublin, 1766' who is mentioned in association with an estate map in the National Archives. The estate almost certainly includes Huntstown House, which is labelled 'Newtown' on the Rocque map of 1760 (Figure 12.2). The map shows no buildings or features of archaeological significance in the approximate area of the development site; however it is difficult to precisely place the location of the development site on this map (Arrow).



Figure 12.2 Rocque Map 1760 (Extract from Kilkenny Archaeology AIA)

Huntstown House was 1.4 km north-west of the development site. The house was entirely removed during the development of Huntstown quarry, which now covers an extensive area of Huntstown and neighbouring townlands. The Griffiths Valuation, which was the primary valuation of property in

Ireland between 1847 and 1864, indicates in 1853 Huntstown House was leased by a Mr. Christopher Kelly. Mr Kelly also leased the three fields east of his house which formed the eastern end of Huntstown townland. These totalled 91 acres. The 1843 Map (Figure 13.3) shows the sandpit within the development area.



**Figure 12.3 1843 Map (Extract from Kilkenny Archaeology AIA)**

Aerial photographs show the larger (west) field in the application area has been disturbed by construction works, probably associated with the adjoining road network and Huntstown Power Station.

#### 12.5.1.5 Field Testing

Archaeological testing was completed in December 2020. For safety reasons the overhead power lines prevented test trenching across much of the site. Seven archaeological test-trenches (Tr 1 to Tr 7) were excavated across Phase 1 using a mechanical excavator with a toothless grading bucket. The locations are shown on Figure 12.4 and photographs are below.

The trenches were excavated to the level of the underlying glacial subsoil, which averaged 0.4 m below ground level. At all seven locations there was evidence of previous disturbance of the topsoil and in Tr 4 modern field drains were observed in the natural subsoils. Nothing of archaeological interest was noted in any of the trenches.