**An Bord Pleanála,**
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Date: 21st May 2025

**RE:** **Further Information Request.**

**Subject:** **Response to Further Information Request.**

**ABP. Ref:** **(Your Case Number:) ABP-321466-24**

Dear James,

Further to your letter of 01 May 2025 regarding the Application for "*development under Section 37L of the Planning and Development Act 2001, as amended, for the ongoing use of the Waste Recycling & Transfer Facility at Sandyhill, St Margaret's, Co. Dublin*", please find below our response to same, alongside the requested additional information and/or clarifications in respect of reports previously submitted.

The Reports enclosed in the Appendices, and response to the request for further information has been prepared by the applicable authors of the EIAR submitted with the application, and their experience and competence has been previously outlined.

This response solely addresses the concerns raised by Fingal County Council, and noting the very limited timeframe provided, i.e. 21 days for an application that comprised an EIAR and NIS, our ability and that of our team is somewhat restricted due to this tight timeframe for such a complex application. We note that typically, for further information in respect of an EIAR/NIS application, a minimum of 28 days would be applicable, and for a s.34 application Planning Authorities allow up to 6 months to respond to Further Information. Therefore, we would ask, that in circumstances where the Board considers there to be a shortfall in details provided, that in the interest of natural justice that a reasonable timeframe for the gathering of such further information would be afforded our client.

We note that the Planning Authority have expressed some concern in respect of the principle of the proposed development on DA zoned lands. We would again refer to our detailed application submission and that pertaining to the retention application, and note that the lands have been zoned DA during the entire operational period for the Recycling Centre, and that the planning authority have on numerous occasions during that time granted permission for the scale of development now proposed. We would argue that the Planning Authority is being somewhat disingenuous using the

argument regarding the Zoning of the site almost 30 years after permission was first granted for this development, and in respect of a scale of development previously permitted by them on the site.

It may also be noted that the Planning Authority did not take any enforcement action during the appropriate period, notwithstanding that the subject development has always been non-conforming in respect of the intensity of use/activity on an enlarged site (and that this unauthorised/non-conforming scale of development was noted in previous planning reports, in 2010 et al). The site has always operated at a level exceeding 21,900 tonnes per annum, and was doing so at the time the map-based objective was adopted by the elected members in respect of the site (Fingal Development Plan 2023-2029). This map-based objective allows for reasonable intensification of the non-conforming waste recycling activity on site. At the time of the adoption of this objective, as is the case today and during the life of the recycling centre, the **non-conforming use comprised waste intake exceeding 21,900 tonnes per annum**. Referral to a permitted 10,000 tonnes per annum is not applicable or relevant in so far as the development never operated at this tonnage, and nor was the development carried out as permitted. As such it would appear the permission was not commenced/invoked. Therefore, the non-conforming use on site is and has always been the unauthorised waste intake and site development works that have been in situ to varying degrees since 1997.

The applicant is proposing to regularise matters on site, but we remain of the opinion that having regard to the duration of time that the development has operated without the benefit of planning permission, that in respect of the scale of use (i.e. waste intake) and enlarged site size, no enforcement action can be taken at this time for this intensity of use, and that as per the definition provided in the Fingal Development Plan, this 'use' represents the non-conforming use on site, rather than a permitted use that was never commenced or enforced.

The remainder of the PA report relates to technical issues to be addressed. The Technical Response to FCC further information request as per their submission to An Bord Pleanála, is noted in summary below –

**Water Services**

It is our opinion that the report of Fingal County Council Water Services Division appears to relate to the 'rEIAR' and substitute consent 'retention' application, which we acknowledge does not include any upgrade of the wastewater treatment or drainage system.

The applicant has upgraded the wastewater treatment system since it was first installed/was in existence prior to 1997. This was done so without the benefit of planning permission to ensure a standard of waste water treatment was retained, in the interest of the environmental sustainability and protection of the groundwater quality. If further upgrades are required in respect of the infiltration area which has not been amended, we would invite a condition from An Bord Pleanála. This matter is further addressed in the Waterman Moylan report appended to this document.

**Air & Noise**

(i) See ESC Report appended to this document re Dust Monitoring comprising results from September 2023 to January 2025.

This report provides the relevant explanation and justification as to why additional dust fall locations were implemented, as the existing dust locations are measuring dust before mitigation measures.

(ii) See appended Irwin Carr & Associates Report re Noise Monitoring.

This report provides the relevant explanation and clarification in response of items (ii) and (iii) (page 17 of the FCC report)

**Waste Enforcement Regulation**

(i) The EPA Waste Licence for 60,000 tonnes per annum was issued on 18/12/2001, the Licence was surrendered on 30/01/2007. The footprint in which the activity took place was largely indoor. The current activity takes place indoors and outdoors.

(ii) Non compliances were addressed, many were for administrative or reporting issues rather than environmental impact issues and the site is very well organised, and housekeeping is of a good standard. The legal proceedings had regard to tonnage exceedance which did not result in environmentally unsafe practices. The legal proceeding did not lead to convictions and there were no legal proceedings for any potential environmental impact.

(iii) In accordance with Condition 6.26 of the Waste Facility Permit, St Margaret's operates a silt trap, interceptor and sand filter system at the site which ensures appropriate treatment of surface water run off prior to discharge. This system is periodically maintained by an authorised third-party contractor to ensure that sludge and silt levels are maintained to ensure the efficiency of the interceptor system operation. The concern only recently arose due to the fact that the default reporting for metal compounds at the new laboratory, was for "Total metals" as opposed to the more widely used default of "Dissolved metals" this has since be rectified.

(iv) In accordance with Condition 6.26 of the Waste Facility Permit, St Margaret's operates a silt trap, interceptor and sand filter system at the site which ensures appropriate treatment of surface water run off prior to discharge. This system is periodically maintained by an authorised third-party contractor to ensure that sludge and silt levels are maintained to ensure the efficiency of the interceptor system operation. Furthermore, the yard is mechanically swept up to 3 times a day to minimise debris entering the drainage system. Precious metals and batteries are stored under a roofed area or indoors. Depollution is conducted indoors and with a state-of-the-art liquid and fluids suction system which pumps the fluids and liquids directly into holding tanks. Surface water monitoring is carried out under the conditions of the Waste Facility Permit.

(v) It is correct that the higher the tonnage the more beneficial the environmental impact of the facility is. However, the current application is limited to 21,900 tonnes.

(vi) This is an error, it was the 2022 fire that should have been referred to in this section. Since 2018 huge investments have been made in fire suppression and alarms. Recently further misting infrastructure has been implemented which reduce fire risk even further and mitigate dust forming in dry periods.

**Fire Prevention Plan**

Tom English, Fire Safety Engineer, has been requested to review the three queries from Fingal Co. Co., noting that he has been responsible for the submission of the fire prevention plan to Fingal's environment section in respect of the waste permit in place on site. To this end, his comments are noted in summary as follows, and may be read in conjunction with the Fire Prevention Plan appended to this document, which includes the minor adjustments to the report which reflects the items of further information and clarification below.

***(1) Discrepancies between Nos. in Section 6 (iv) , Section 6.18 (viii) and Section 2.9 (o) in relation to stack pile sizes.***

Section 2.8 of the Report provides the details of the maximum capacities of the stacks / piles for the various types of materials, with a strict maximum capacity limit designated for combustible waste {non-de-polluted E.L.V.'s , Fragmentizer Waste and Paper / Tyres / Plastic} of 132m$^3$. This designated maximum limit has reportedly been evaluated based on the type of waste that makes up most of the mixed piles.

The maximum capacities can be compared to any limits specified in the Waste Facility Permit {Fingal County Council Waste Facility Permit (WFP-FG-13-0002-03) for End-of-Life Vehicles (E.L.V.'s)}.

The maximum designated stack piles for combustible wastes are defined to not more than 132m$^3$ and the water supply requirement is gauged accordingly.

The stack pile sizes provided in the report are maximum stack pile sizes and will not necessary be utilised to these limits at St. Margaret's Recycling & Transfer Centre Ltd.

***(2) Maximum Heights of the Stack Piles:***

Waste Industry Safety & Health (WISH) Forum, in their 2014 guidance document, advised a 5-metre maximum stack height for waste stored in a loose stack, as well as a 4-metre maximum for baled material.

Since then, this guidance has been updated and the recommendation for waste materials, including wood and paper, which will burn at a temperature of up to 950°C, has been reduced down to 4 metres for the material if it is stored in a loose stack. Also baled stacks must be no more than 4 metres tall, but with an added stipulation that stacks should contain a maximum of four bales. This is in accordance with the guidance from the Environment Agency (U.K.).

The relevant sections of the report have been adjusted accordingly.

***(3) Maximum Lengths / Widths of Stack Piles:***

It was intended at the beginning of this Fire Safety Risk Assessment / Strategy process to provide all the drawings in a larger format to Fingal Co. Co. as supplementary to the reports. The actual dimensions of the stack piles detailed in Appendix IV of our report can be expanded on by adding the actual layout dimensions of the stack piles on site to the current drawing details.

This will enable the identification and review of the actual stack piles and assist in the management thereof.

Any stack piles that then exceed the specified length and width dimensions can then be identified and rectified appropriately.

**New Drainage Proposal**

Please refer to the Waterman Moylan Engineering Report RE the Water Services, Drainage and Transport and associated drawings appended to this document.

**Parks & Green Infrastructure**

Ecologist, Peter McCormick of ESC has undertaken a comprehensive hedgerow survey, and has submitted additional information regarding the retention, and management of the hedgerows, please refer to accompanying report appended to this document.

Additionally, please find details (in the accompanying 'St Margaret's Dubin Wildflower Conversion Document appended) prepared by the Study Team's ecologist in respect of the proposed planting plan to facilitate the conversion of 1.1ha of hardstanding to managed grassland/wildflower meadow.

**Transportation**

(i) Waterman Moylan Engineers have provided additional details and drawings regarding sight lines. Please refer to the appended Waterman Moylan Report

It may be noted that hedge cutting occurs approximately 4 times per annum to ensure sightlines are maintained, and most recently took place on the 18th May 2025. Noting the site has operated at this level for the last circa 30 years and without resulting in a serious or significant traffic hazard (as may be demonstrated by the absence of recorded or reported RTAs), we would be of the opinion that the site de facto does not result in a traffic hazard such as would warrant a refusal of permission. The applicant has long demonstrated his ability and practice regarding the maintenance of sight lines at this site, and there is no material change in circumstances that would support a belief or concern that this would suddenly stop after c.30 years in practice.

(iv) It is unclear as on what basis the Transportation department consider there to be a proposed demand increase which would support the need for 36 bike spaces. The current levels of development/waste intake are proposed to be maintained and staff on site will remain at their current levels. Staff on site comprise less than 20 persons. As such, even if 100% of the maximum number of staff and visitors on site required bike parking, this bike parking demand would not exceed 25 spaces. These spaces if required can be provided to the rear of the existing portacabins or replace the car parking that is proposed/existing, and a condition providing for same could be attached to any grant of permission.

Items (ii) and (iii) appear to relate to staff welfare facilities. The applicant is amenable to providing lockers and shower facilities on site in lieu of the current wc/storage cabin, and we are satisfied that if applicable this could be a condition of planning. We note that there is no provision in the development plan or development management standards which outline where these requirements

stem and no details regarding the rationale for this request is included in the request from Fingal County Council re. same. Therefore, they were not submitted in the original application.

**Archaeology**

No objection / No Further Information Request

**Appropriate Assessment and EIAR**

Planning Authority appears to have no comment re same.

**Conclusion**

Fingal's issue with the level of intensification is noted and has been addressed in the application documentation and in the introduction to this Further Information response.

It is our opinion that it is entirely unreasonable and inconsistent with the precedence that has been established throughout the county, to both limit the proposed development in tonnage and duration of the permission. The applicant is seeking to regularise matters on site, and noting the extent of development which is long established, and which is not subject to 'enforcement action' we do not believe that it would serve the area, or the environment to refuse permission. The applicant wishes to improve the amenity and standards on site, and having regard to the extent of works required to do so, it would be unreasonable that the permission period would be restricted to 3 years.

Further, noting the quantum of land zoned DA, and that there has been no development on the DA lands in this area notwithstanding that they have been so zoned for decades, it is clear that the subject development is not preventing or prejudicing 'DA'/aviation or airport related development in this area.

Considering the foregoing, we look forward to a positive outcome in the Decision of An Bord Pleanála regarding this matter.

I trust you will find the foregoing of some assistance. If you require any further information, please do not hesitate in contacting me.

Yours sincerely,

Joseph Corr

Mr. Joseph Corr MSc MPRII, MIPI
Managing Director of Planning

Enclosuers.

**Appendices:**

- Appendix 1 Engineering Services Report
- Appendix 2 Drainage Drawing 1
- Appendix 3 Drainage Drawing 2
- Appendix 4 Sightlines Drawing 1
- Appendix 5 Sightlines Drawing 2
- Appendix 6 ESC Dust Monitoring Report
- Appendix 7 Irwin Carr Noise Report
- Appendix 8 Fire Safety Report
- Appendix 9 Hedgerow Survey
- Appendix 10 Wildflower Meadow Plan

# Further Information Request Response Document Ref. ABP-321466-24

St. Margaret's Metal Recycling Facility, Saint Margarets, Co. Dublin.

May 2025

**Waterman Moylan Consulting Engineers Limited**
Block S, Eastpoint Business Park, Alfie Byrne Road, Dublin D03 H3F4
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| | |
|---|---|
| **Client Name:** | St. Margaret's Recycling Ltd |
| **Document Reference:** | 23-072r.006 |
| **Project Number:** | 23-072 |

## Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015)

| Issue | Date | Prepared by | Checked by | Approved by |
|---|---|---|---|---|
| Draft | 20 May 2025 | P. Ingle | I. Worrell | |

**Comments**

## Disclaimer

This report has been prepared by Waterman Moylan, with all reasonable skill, care, and diligence within the terms of the Contract with the Client, incorporation of our General Terms and Conditions of Business and taking account of the resources devoted to us by agreement with the Client.

We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report is confidential to the Client, and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

# Content



## Appendix

Appendix A: Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P020-Drainage Layout

Appendix B: Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P021-Silt Trap Details

Appendix C: Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P016-Entrance Sightlines (2.4m setback)

Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P017-Entrance Sightlines (3.0m setback)

# 1. Introduction

This report has been prepared by Waterman Moylan on behalf of the Client, St. Margaret's Recycling & Transfer Centre Ltd, as part of the documentation in support of a request for further information received from An Bord Pleanála (ABP) with Reference Number ABP-321466-24. The received ABP document cited commentary from Fingal County Council which is addressed within this report.

This report sets out the engineering responses to the following items:

**Water Services**

"*The Water Services Division has assessed the development and have indicated that Additional Information is required with regard whether works to the existing wastewater treatment system is proposed. The engineering report states that no works are proposed or indeed required, whereas the site drainage layout drawing states otherwise. The applicant would need to clarify and submit appropriate substantiating design documentation if applicable."*

**New Drainage Proposal**

*"The application proposes the installation of a new drainage attenuation system, with 2 separate underground tanks, and a dry detention pond. The main area (area B in the report) would have a new 675m$^3$ underground attenuation tank, connected to a dry detention pond where excess water would be stored in the larger rain events.*

*The construction design of the dry detention pond is unclear, but it does not appear to be lined. Since the attenuation tanks and detention pond are upstream of any of the treatment systems (i.e. oil interceptor), this would represent a risk of contaminated water seeping into the ground at the detention pond.*

*Drawing MAR-WMC-ZZ-GF-DR-C-P025 shows the detailed section A-A for the 675m$^3$ underground tank and attenuation detention basin. Based on the drawing, the underground tank appears to drain into the attenuation tank manhole form the bottom of the tank. The A-A section goes on to show that the attenuation area surcharge manhole includes a land drainpipe, at a low elevation. This could result in the attenuation tank draining itself int the land drain (untreated) instead of being confined to the attenuation tank.*

*The inlet pipe to the attenuation chamber is not shown, thought the report mentions silt trap manholes will be placed before inlets, to prevent build-up of debris within the attenuation tank. Detailed drawings of the silt trap manholes are not provided, volume of silt retention capacity is not provided.*

*The Engineering Assessment Report from Waterman Moylan is Section 5.1 present the water quality treatment train. While it addresses suspended solids and oil contamination, it does not deal with soluble metals which can leach into the surface water as the water seeps through the metal piles on site, and as the water stands in the attenuation tanks and silt traps which could include any sludge containing metal dust and particles."*

**Transportation**

"*The Transportation Section has assessed the submitted documents and make the following comments:*

*(i) The applicant should provide sightline drawings from a setback point at the middle of the entrance of both 3.0m and 2.4m for a distance of 145 metres to the near side edge of kerb to the north and to the south of the existing access in accordance with TII DN GEO-03060. The area of the visibility envelope should be highlighted, and the area identified for ongoing hedgerow maintenance to be carried out by the owner/occupier indefinitely ensuring necessary sightlines are maintained. The details of*

*maintenance shall be agreed with the Planning Authority and carried out at the expense of the developer.*

*(ii) Showers should be provided in the changing rooms/welfare facilities layout.*

*(iii) A minimum of 26 lockers shall be provided in the welfare facilities and detailed on a revised layout.*

*(iv) The applicant shall identify a location where additional cycle parking for up to 36 spaces can be accommodated and this area shall be reserved and additional cycle parking provided as demand increases."*

# 2. Engineering Responses

## 2.1 Water Services

For the purpose of clarity, the works include for the upgrade of the existing wastewater treatment system on site. This is set out in the report and drawings issued.

Section 3.1 of the Waterman Moylan Engineering Assessment Report, with report ref. no. 23-072r.001, states the following:

"Domestic wastewater from these facilities is discharged into an existing on-site wastewater treatment plant. Treated effluent from the existing on-site wastewater treatment system is discharged to the ground via an existing percolation filter bed, **both of which will be upgraded** in accordance with ESC specifications to ensure these meet the current standards."

Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P020-Drainage Layout indicates the upgrade works proposed, and further detail in this regard has been provided by ESC as part of the overall submission. Refer to Appendix A for a copy of the drawing.

The report and drawings reflect the proposal to upgrade the wastewater treatment system.

## 2.2 New Drainage Proposal

A lining to the detention basin can be provided if required by the Local Authority, however we would note that the proposed detention basin area only functions in rainfall events in excess of the 1 in 30 year event.

In this regard, current best practices in sustainable urban drainage systems (SuDS) includes the use of features such as detention basins, roadside swales, filter drains, and permeable paving routinely used to manage potential surface water contamination. The below-ground attenuation tanks are designed to accommodate runoff from storm events up to the 1-in-30-year return period. The dry detention pond is intended to manage exceedance flows from more extreme, infrequent storm events, up to the 1-in-100-year storm. These events are of short duration and produce highly diluted runoff, thereby significantly reducing the potential for contamination. As such, lining of the detention pond is not considered necessary, but can be provided if required by the Local Authority as set out above.

On the matter of potential discharge from the attenuation tank into the adjacent land drain, this can be mitigated through the installation of a non-return valve on the relevant outfall. Alternatively, the land drain connection can be removed from the system altogether to ensure containment. The attenuation tank will only function in extreme events and there is a low probability / return period of surcharge back up the land drain network.

On the issue of the silt trap manholes, detailed drawings of the silt trap manholes, including their sediment retention capacity, are provided in Appendix B of this report, Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P023-Proposed Silt Trap Manhole Detail. These silt traps are designed to intercept debris and suspended solids before water enters the attenuation tanks.

To further mitigate the risk of soluble metal contamination, the installation of a downstream defender unit or equivalent treatment device can be facilitated if required. These systems are specifically engineered to capture both particulate-bound and dissolved pollutants, including metals. Collected materials are removed and disposed of offsite in accordance with appropriate waste management regulations.

## 2.3 Transportation

Please see the relevant sightline drawings, MAR-WMC-ZZ-GF-DR-C-P016-Entrance Sightlines (2.4m Setback) and MAR-WMC-ZZ-GF-DR-C-P017-Entrance Sightlines (3.0m Setback), under Appendix C, taken from a setback point at the middle of the entrance for both the required 3.0m and 2.4m for a distance of 145 metres to the nearside edge of the kerb to the north and south of the existing entrance in accordance with TII DN GEO-03660, and with the area of the visibility envelope highlighted. This drawing identifies the areas of hedgerow maintenance required, which includes sections of hedgerow to the north and south. The section of hedgerow to be trimmed back to the north is within the applicant's ownership thus ensuring the sightlines can be maintained.

The sightlines to the south are based on the previously approved access for the subject development and the applicant has to date and can continue to undertake the ongoing maintenance of the hedgerows along this boundary to ensure the existing sightlines are retained. Indeed, this hedgerow was most recently rimmed back on 18 May 2025. St. Margaret's Metal Recycling commit to the continued funding of the annual maintenance of the hedgerow both north and south of their existing entrance of behalf of Fingal County Council for the benefit of all road users as an acceptable assurance to mitigate any potential issues in this regard. However, we wish to emphasize that only in the event of a failure to maintain the hedgerow would issues with the current permitted arrangement occur, and that this scenario exists county and countrywide, and the Local Authority has the powers to compel that the required maintenance be undertaken.

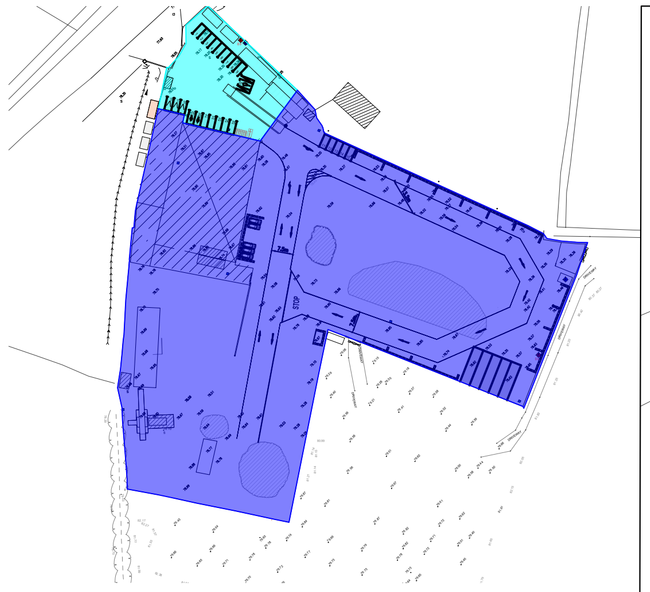
The Road Safety Authority of Ireland advise Section 70 of the Roads Act 1993 places responsibility for the maintenance of roadside hedges on the owners/occupiers of the adjoining lands. The responsibility for the maintenance of roadside verges rests with the Local Authority. The season for hedge cutting under the Wildlife Acts starts from the 1 September to the 28 February the following year. It is not permitted to cut hedgerows outside of these dates. The only exception to this is if there are grounds to act for road safety reasons. County Councils can and do, either take direct action themselves or serve a notice on the landowner to do something in such instances.

We would also note that the existing road operates with a speed limit of 80 kph and there is potential for further mitigation to improved road safety in this area by reducing the operating speed to 60 kph (and the sightline requirement) accordingly, in line with Government objectives. Traffic calming, additional / amended road signage and road marking arrangements could also aid improvements to the road network in the area and the applicant can assist in the delivery of such measures by way of condition. The above measures would allow reduced sightline requirements, facilitate the measuring of sightlines to the centre of the road when measured to the south and therefore significantly reduce the extent of hedging to be maintained as part of the development. These measures resulting in sightlines measured to the road centreline and also sightline measures to 90m are also indicated on MAR-WMC-ZZ-GF-DR-C-P016-Entrance Sightlines (2.4m Setback) included in Appendix C.

CWPA, under separate cover have provided details of the showering, locker and cycle parking facilities.

# APPENDICES

## A. Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P020-Drainage Layout

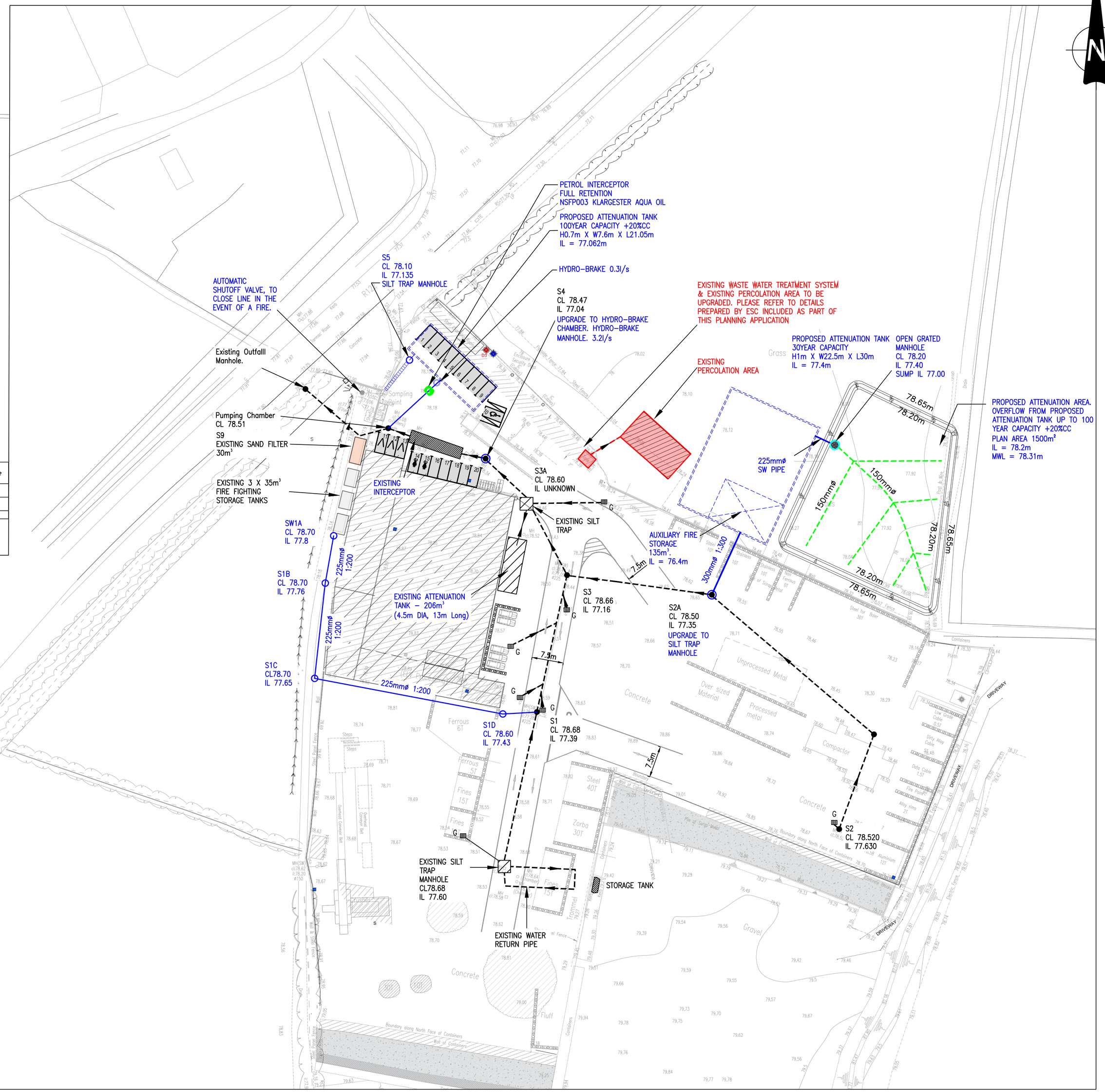


CATCHMENT LAYOUT
SCALE 1:1500 @ A1

CATCHMENT A
AREA = 0.14 Ha

CATCHMENT B
AREA = 1.47 Ha

| Catchment | Catchment Area (Ha) | Runoff Coefficient (Impermeability) | Soil type | Qbar (l/s/Ha) | Allowable Discharge Rate (l/s) |
|---|---|---|---|---|---|
| Catchment A | 0.14 | 0.9 | 2 | 2.17 | 3.2 |
| Catchment B | 1.47 | 0.9 | 2 | 2.17 | 0.3 |
| Total | 1.61 | 0.9 | 2 | 2.17 | 3.5 |




## LEGEND:

- EXISTING SURFACE WATER SEWER & MANHOLE
- PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- PROPOSED ROAD GULLY
- HEAVY DUTY ACO DRAIN
- PROPOSED PETROL INTERCEPTOR
- PROPOSED ATTENUATION TANK HXm x WXm x LXm IL = XX.XXXm
- WASTE WATER TREATMENT SYSTEM
- FILTER DRAIN
- PROPOSED OPEN GRANT MANHOLE

PLAN VIEW – PROPOSED DRAINAGE LAYOUT
SCALE 1:500 @A1

1:500 0 10.0 20.0 30.0 40.0 50.0m
1:1 0 10 20 30 40 50 60 70 80 90 100



NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|

Amendments

Project
ST. MARGARETS RECYCLING
& TRANSFER CENTRE, SANDYHILL,
ST. MARGARETS, CO.DUBLIN

Title
DRAINAGE LAYOUT

Client

waterman moylan
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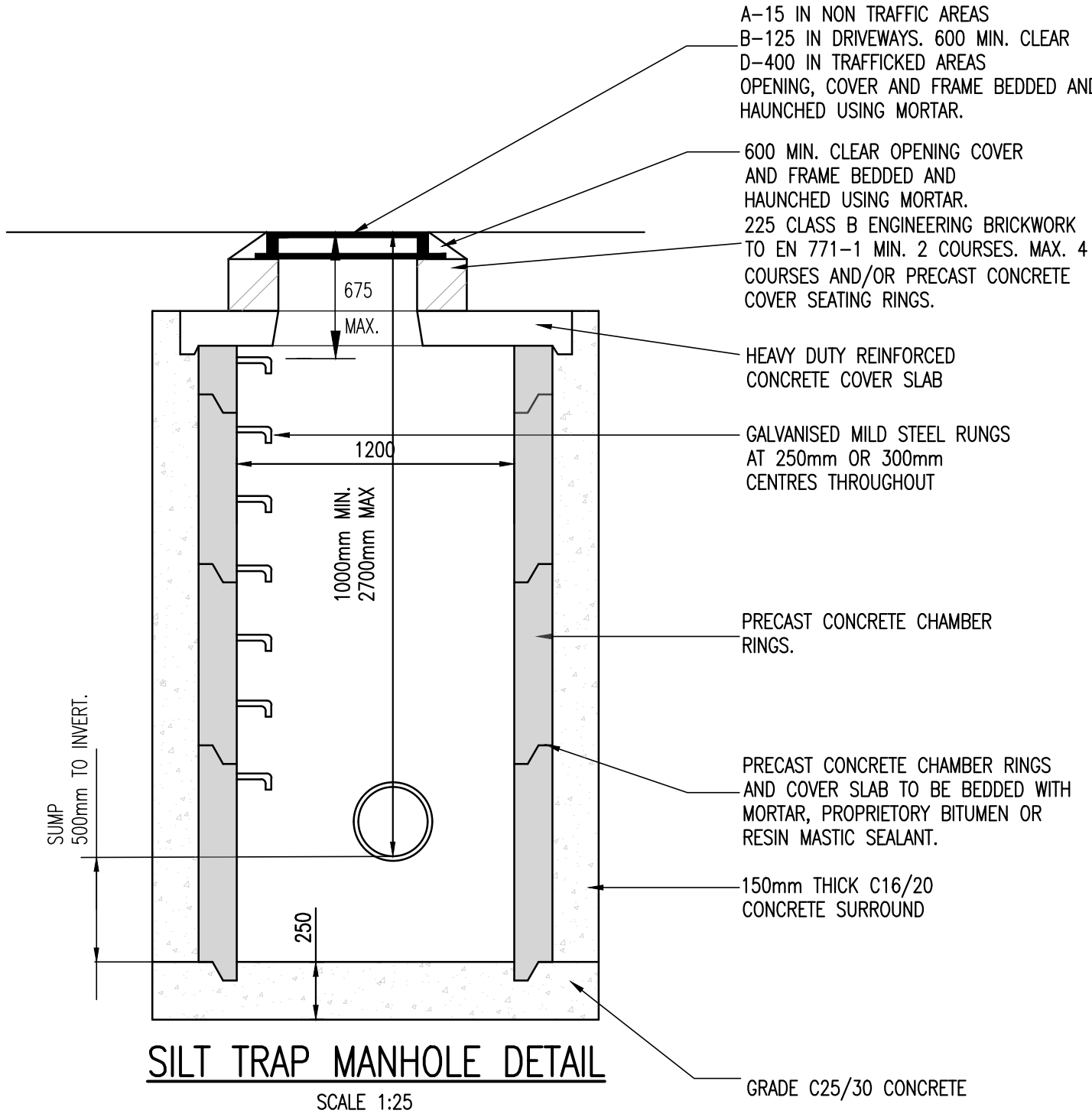
Status
PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| Drawn By | Date | Scales @ A1 |
| G.Byrne | DEC. 2024 | AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number
MAR - WMC - ZZ - GF - DR - C - P020
Revision

Drawing Location: M:\Projects\2023-072 St.Margarets\Drawings\Waterman Moylan\Civil\Planning\Autocad Drawings\MAR-WMC-ZZ-GF-DR-C-P020-Drainage Layout.dwg
Date: May 20, 2025 - 11:48am

## B. Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P023 - Proposed Silt Trap Manhole Detail




SILT TRAP MANHOLE DETAIL

SCALE 1:25



NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| | | Amendments | | |

Project

ST. MARGARETS RECYCLING

Title

PROPOSED SILT TRAP MANHOLE DETAIL

Client

BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD,
DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

Status

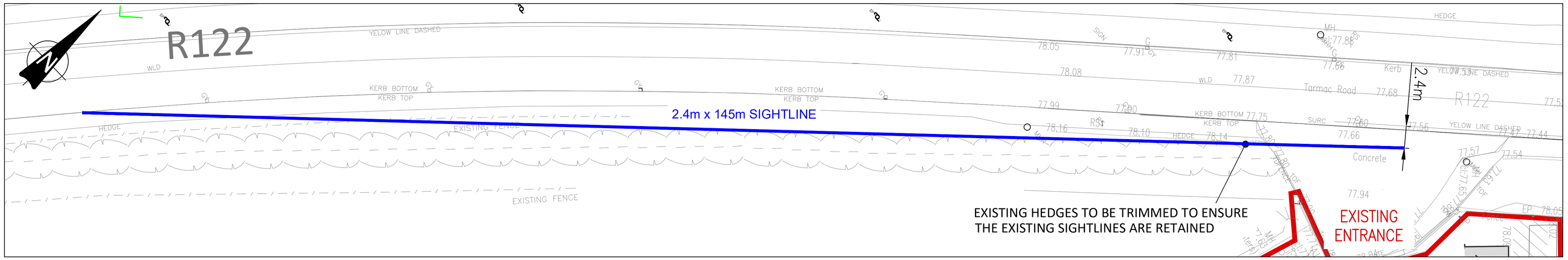
PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| **Drawn By** | **Date** | **Scales @ A1** |
| G.Byrne | JUNE 2023 | AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number: MAR-WMC-ZZ -GF-DR-C-P023

Revision

## C. Waterman Moylan Drawing No. MAR-WMC-ZZ-GF-DR-C-P016 & 017- Entrance Sightlines (2.4m Setback) & Entrance Sightlines (3.0m Setback)




PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING LEFT TO NEARSIDE KERB

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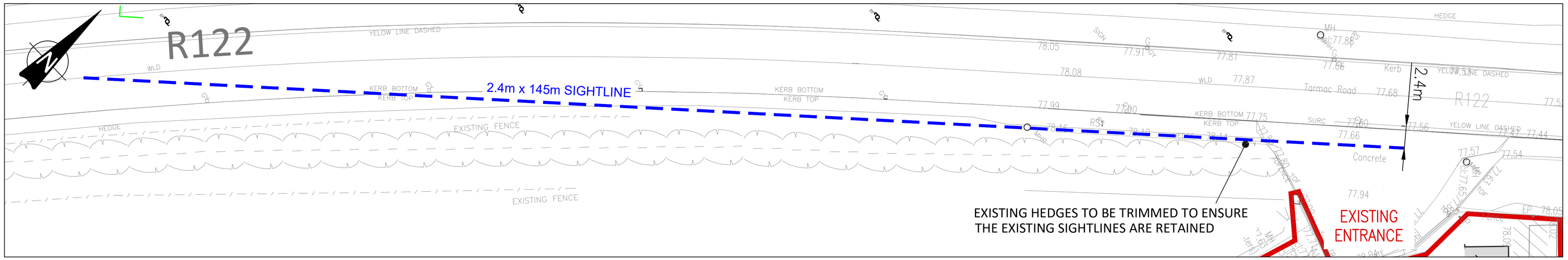
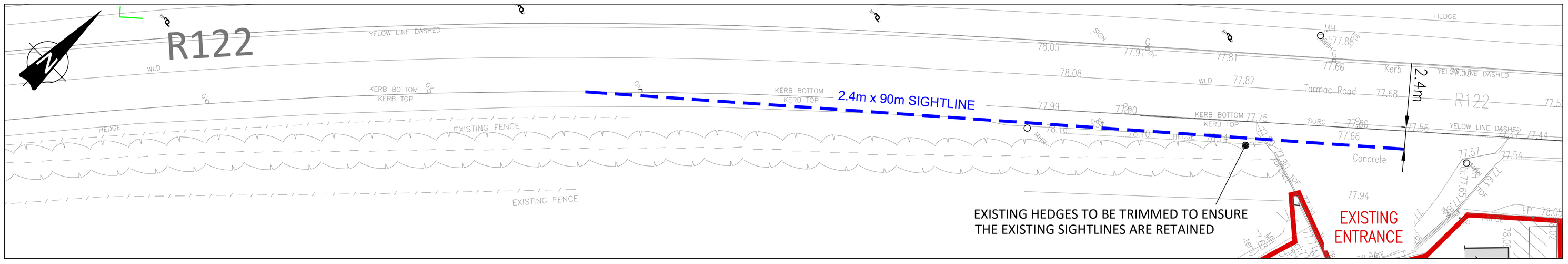



PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING LEFT TO ROAD CENTRE LINE

SCALE 1:250 @A1




PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 90m – LOOKING LEFT TO NEARSIDE KERB

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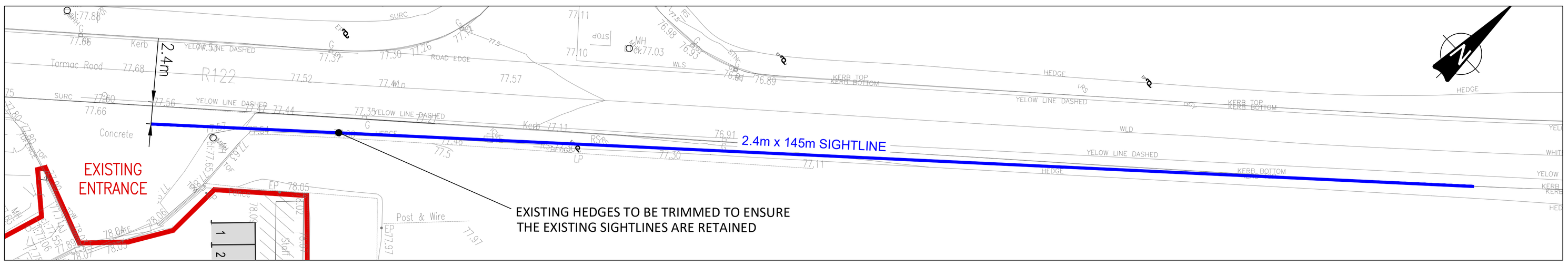


PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING RIGHT TO NEARSIDE KERB

SCALE 1:250 @A1



NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
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| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| | | Amendments | | |

Project

ST. MARGARETS RECYCLING
& TRANSFER CENTRE, SANDYHILL,
ST. MARGARETS, CO.DUBLIN

Title

ENTRANCE SIGHTLINES
2.4m SETBACK

Client

waterman moylan

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Status: PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| **Drawn By** | **Date** | **Scales @ A1** |
| G.Byrne | JUNE 2023 | AS SHOWN |

| Project - Originator - Volume - Level - Type - Role - Number | Revision |
|---|---|
| MAR - WMC - ZZ - GF - DR - C - P016 | |

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Date: May 30, 2023 - 11:58am

NOTES:

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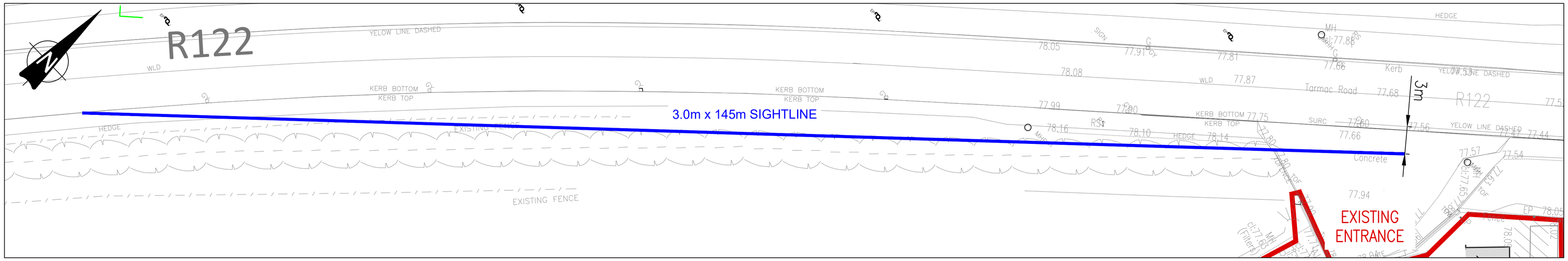
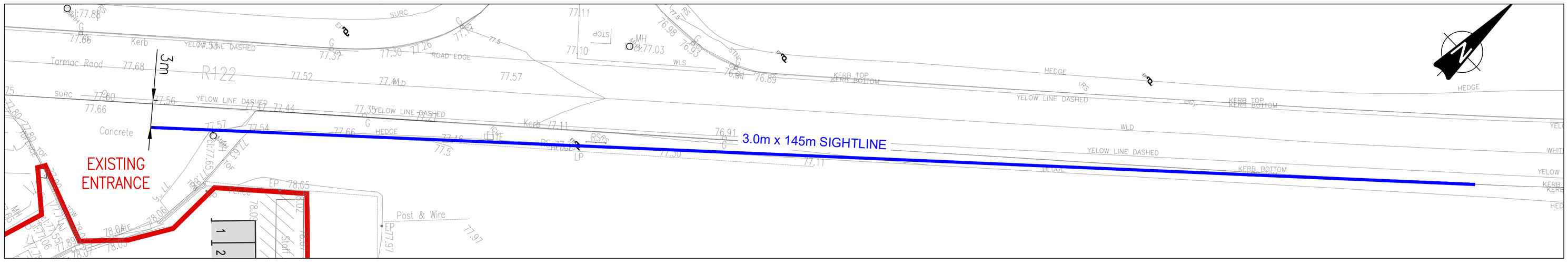
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.




PLAN VIEW – ENTRANCE SIGHTLINES 3.0m x 145m – LOOKING LEFT TO NEARSIDE KERB

SCALE 1:250 @A1




PLAN VIEW – ENTRANCE SIGHTLINES 3.0m x 145m – LOOKING RIGHT TO NEARSIDE KERB

SCALE 1:250 @A1

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| | | Amendments | | |

Project

ST. MARGARETS RECYCLING
& TRANSFER CENTRE, SANDYHILL,
ST. MARGARETS, CO.DUBLIN

Title

ENTRANCE SIGHTLINES
3.0m SIGHTLINE

Client

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Status: PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| **Drawn By** | **Date** | **Scales @ A1** |
| G.Byrne | JUNE 2023 | AS SHOWN |

| Project - Originator - Volume - Level - Type - Role - Number | Revision |
|---|---|
| MAR - WMC - ZZ - GF - DR - C - P017 | |

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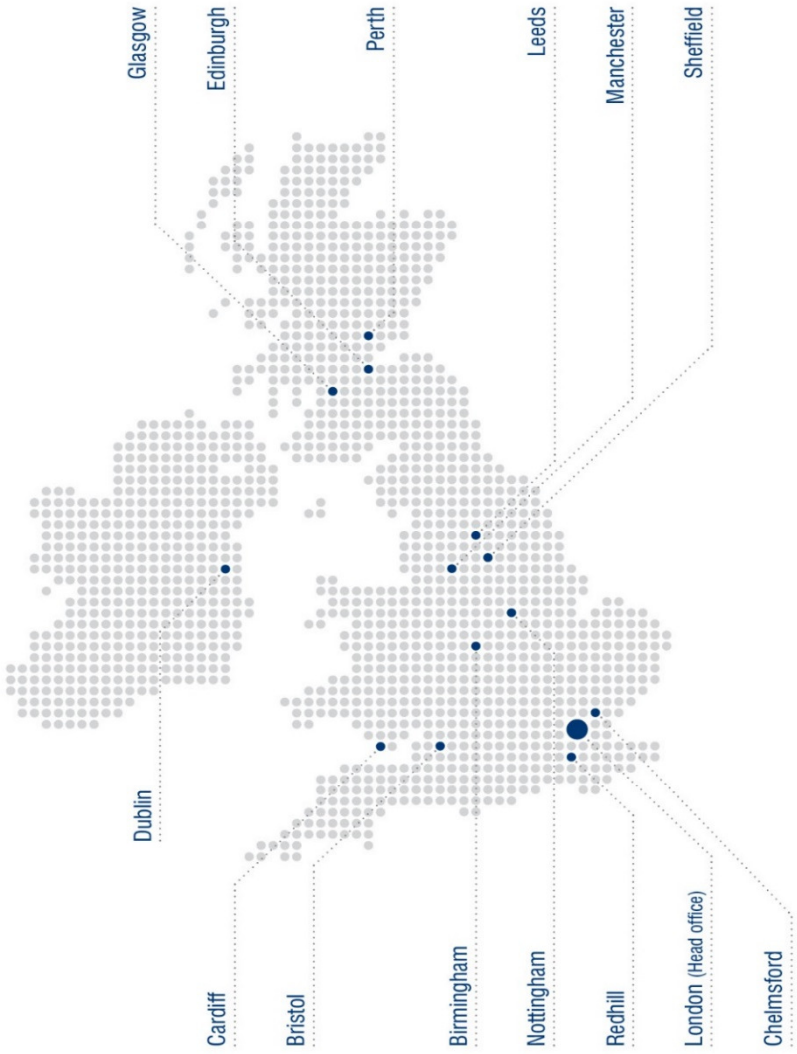
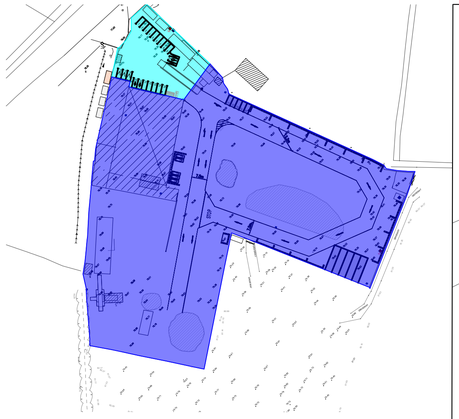
Date: May 20, 2023 - 11:50am

# UK and Ireland Office Locations



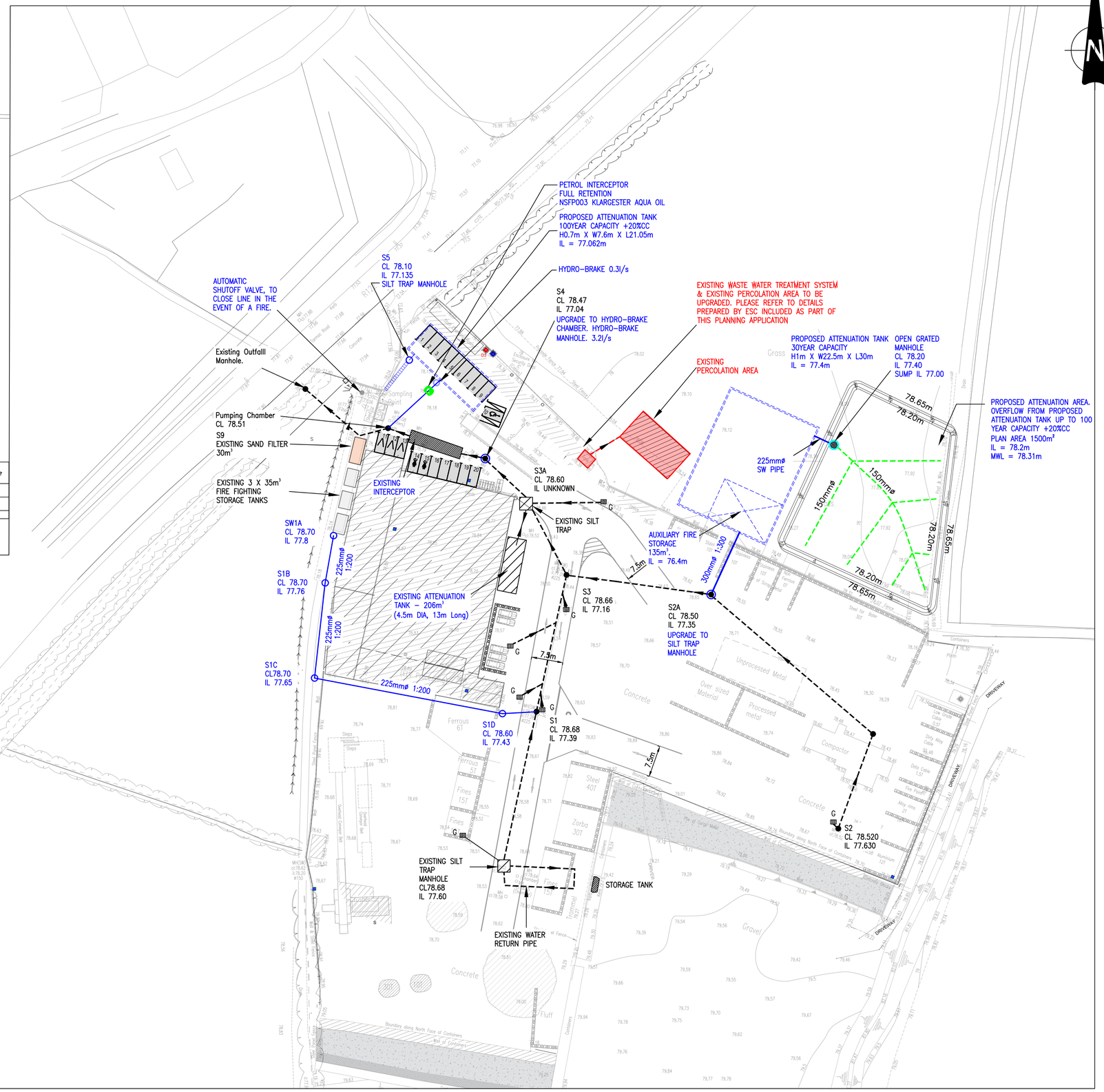


CATCHMENT LAYOUT
SCALE 1:1500 @ A1

CATCHMENT A
AREA = 0.14 Ha

CATCHMENT B
AREA = 1.47 Ha

| Catchment | Catchment Area (Ha) | Runoff Coefficient (Impermeability) | Soil type | Qbar (l/s/Ha) | Allowable Discharge Rate (l/s) |
|---|---|---|---|---|---|
| Catchment A | 0.14 | 0.9 | 2 | 2.17 | 3.2 |
| Catchment B | 1.47 | 0.9 | 2 | 2.17 | 0.3 |
| Total | 1.61 | 0.9 | 2 | 2.17 | 3.5 |




## LEGEND:

- EXISTING SURFACE WATER SEWER & MANHOLE
- PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- PROPOSED ROAD GULLY
- HEAVY DUTY ACO DRAIN
- PROPOSED PETROL INTERCEPTOR
- PROPOSED ATTENUATION TANK
  HXm x WXm x LXm
  IL = XX.XXXm
- WASTE WATER TREATMENT SYSTEM
- FILTER DRAIN
- PROPOSED OPEN GRANT MANHOLE

PLAN VIEW – PROPOSED DRAINAGE LAYOUT
SCALE 1:500 @A1

1:500 0 10.0 20.0 30.0 40.0 50.0m
1:1 0 10 20 30 40 50 60 70 80 90 100



NOTES:

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| Rev | Date | Description | By | Chk |
|---|---|---|---|---|

Amendments

Project
ST. MARGARETS RECYCLING
& TRANSFER CENTRE, SANDYHILL,
ST. MARGARETS, CO.DUBLIN

Title
DRAINAGE LAYOUT

Client

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Status
PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| Drawn By | Date | Scales @ A1 |
| G.Byrne | DEC. 2024 | AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number
MAR - WMC - ZZ - GF - DR - C - P020

Revision

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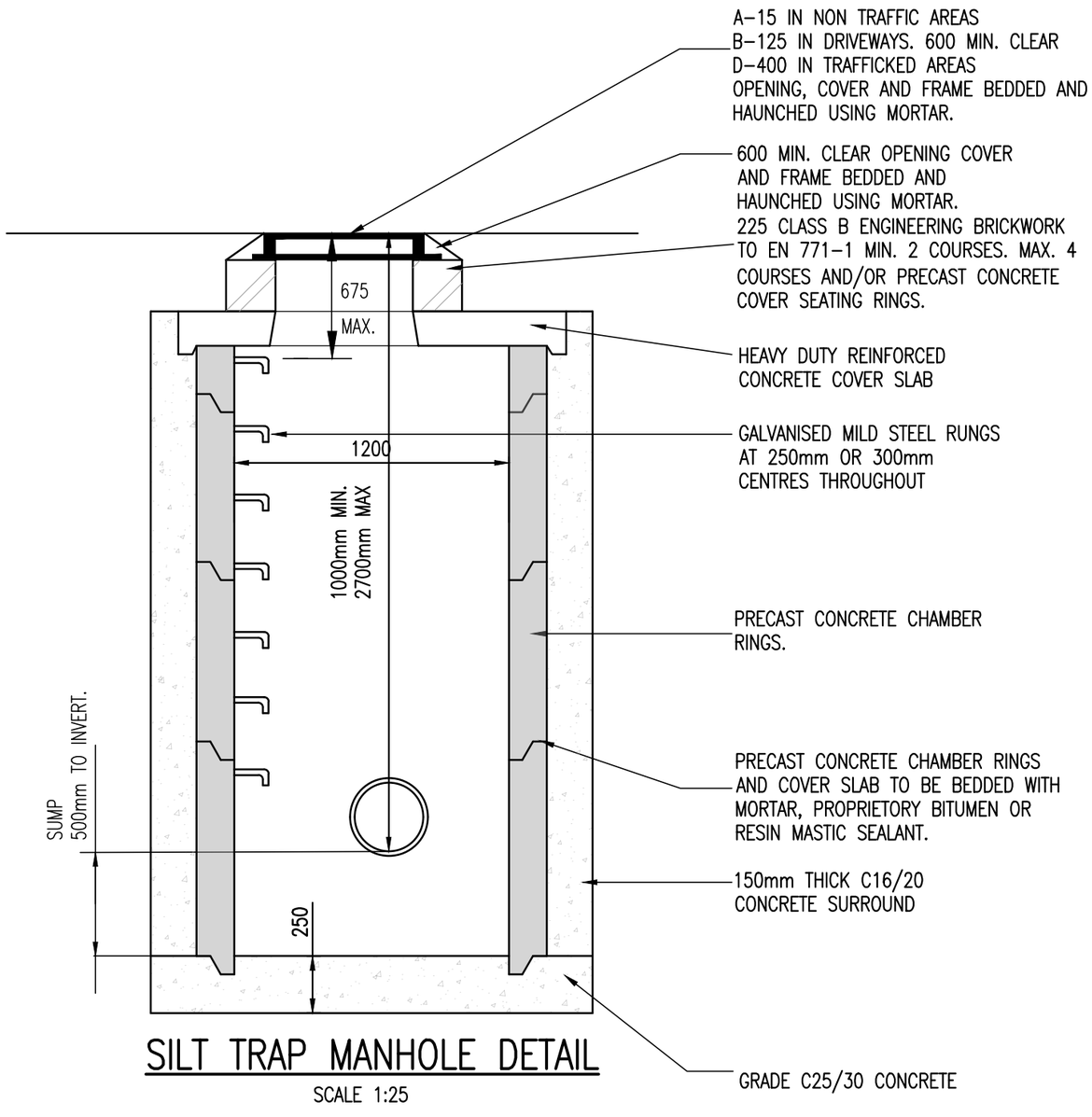
Date: May 20, 2025 - 11:48am




## SILT TRAP MANHOLE DETAIL

SCALE 1:25



NOTES:

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| Rev | Date | Description | By | Chk |
|---|---|---|---|---|

Amendments

Project

ST. MARGARETS RECYCLING

Title

PROPOSED SILT TRAP
MANHOLE DETAIL

Client

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Status

PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| **Drawn By** | **Date** | **Scales @ A1** |
| G.Byrne | JUNE 2023 | AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number

MAR-WMC-ZZ -GF-DR-C-P023

Revision

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
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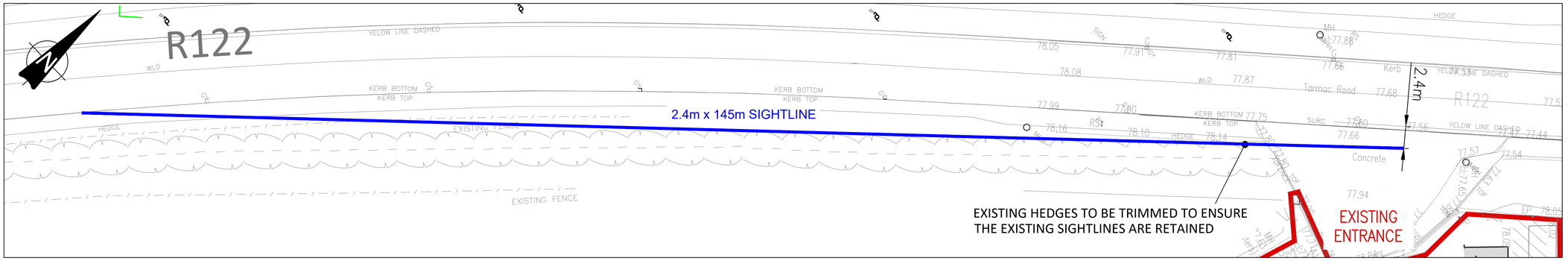
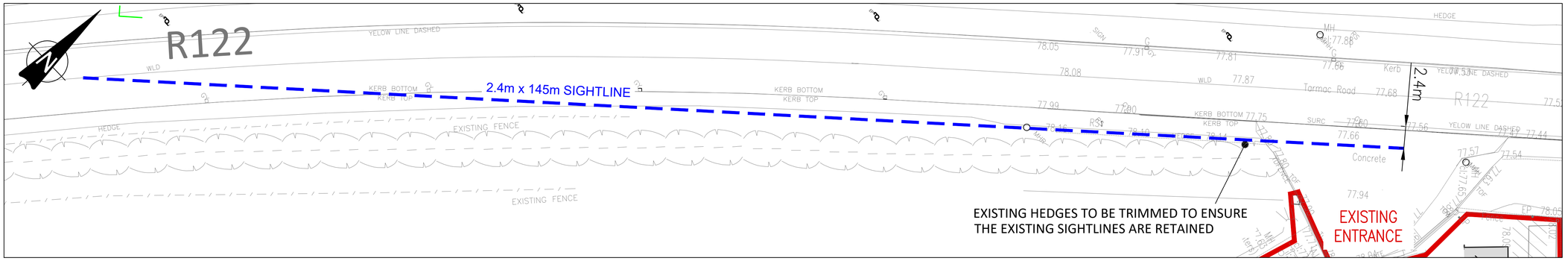


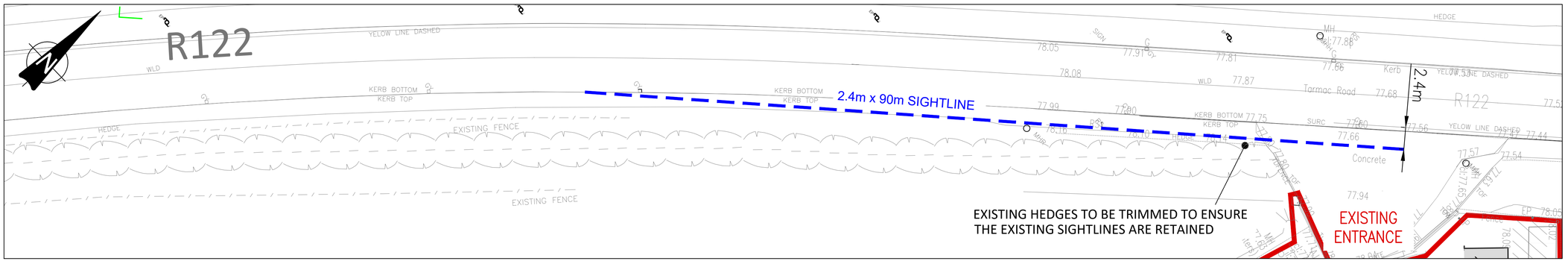

PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING LEFT TO NEARSIDE KERB

SCALE 1:250 @A1



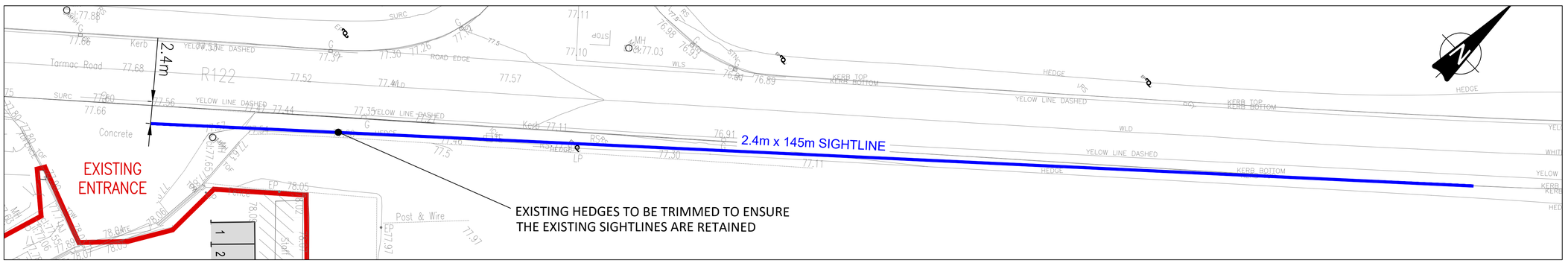

PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING LEFT TO ROAD CENTRE LINE

SCALE 1:250 @A1




PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 90m – LOOKING LEFT TO NEARSIDE KERB

SCALE 1:250 @A1




PLAN VIEW – ENTRANCE SIGHTLINES 2.4m x 145m – LOOKING RIGHT TO NEARSIDE KERB

SCALE 1:250 @A1

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| | | Amendments | | |

Project

ST. MARGARETS RECYCLING
& TRANSFER CENTRE, SANDYHILL,
ST. MARGARETS, CO.DUBLIN

Title

ENTRANCE SIGHTLINES
2.4m SETBACK

Client

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Status: PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| Drawn By: G.Byrne | Date: JUNE 2023 | Scales @ A1: AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number: MAR - WMC - ZZ - GF - DR - C - P016

Revision:

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Date: May 20, 2025 - 11:48am

NOTES:

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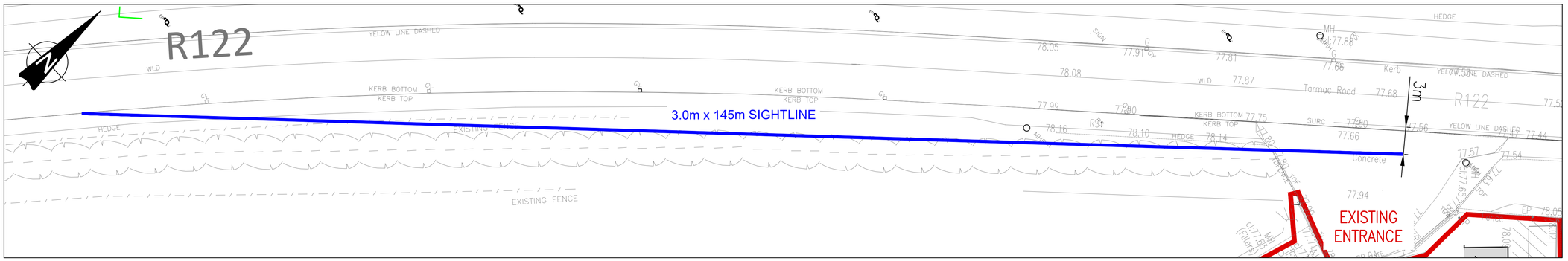
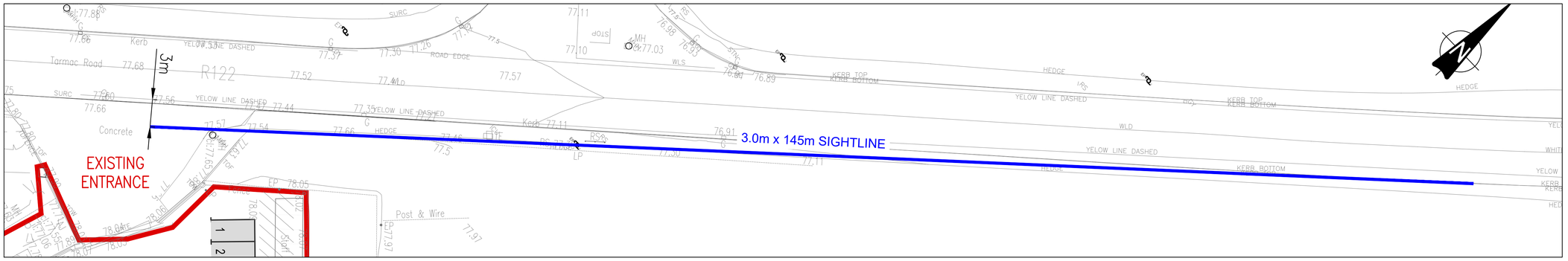



PLAN VIEW – ENTRANCE SIGHTLINES 3.0m x 145m – LOOKING LEFT TO NEARSIDE KERB

SCALE 1:250 @A1




PLAN VIEW – ENTRANCE SIGHTLINES 3.0m x 145m – LOOKING RIGHT TO NEARSIDE KERB

SCALE 1:250 @A1

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| Amendments | | | | |

Project

ST. MARGARETS RECYCLING & TRANSFER CENTRE, SANDYHILL, ST. MARGARETS, CO.DUBLIN

Title

ENTRANCE SIGHTLINES 3.0m SIGHTLINE

Client

BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

Status: PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| JB | IW | 23-072 |
| **Drawn By** | **Date** | **Scales @ A1** |
| G.Byrne | JUNE 2023 | AS SHOWN |

Project - Originator - Volume - Level - Type - Role - Number: MAR - WMC - ZZ - GF - DR - C - P017

Revision:

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Date: May 20, 2025 - 11:58am

ESC Environmental Ltd

# Dust Fall Review Report 2025

# St Margarets Recycling

**Sandyhills**
**St Margaret's**
**Co. Dublin**

**Waste Permit Number WFP-FG-13-0002-03**

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Tobernania Ballintogher
County Sligo
P: 071 913 4001
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# Document Control Sheet

| | | | | |
|---|---|---|---|---|
| **Client** | | St Margaret's Recycling and Transfer station | | |
| **Project** | | Dust Fall Review Report | | |
| **Project No:** | | | | |
| **Report** | | Environmental Summary Report | | |
| **Document Reference:** | | | | |
| **Version** | **Author** | **Checked** | **Reviewed** | **Date** |
| 1 | Martijn Leenheer | | Leo Cosgrove | 17/10/2023 |
| 2 | | | | |
| | | | | |
| | | | | |

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# Table of Contents

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# 1 Background & Context

ESC Environmental Ltd. is an independent consultancy serving the water, wastewater and waste industries, and have been engaged by St Margaret's Recycling and Transfer Station to issue a summary report for the environmental emissions at the site in Sandyhill, St Margret's, Couty Dublin. This report is supplementary to pre-application meeting for an application for retention of the intensification for a throughput of up to 42,500 tonnes per annum.

St Margaret's Recycling & Transfer Centre Limited currently operates under a waste facility permit site (Permit number WFP-FG-13-000203) at Sandyhills, St Margaret's, Co Dublin, K67 EW73. The Waste Facility Permitted has been granted by Fingal County Council.

The facility mainly concentrates on the reclamation and recycling of metals from sources such as End-of-Live-Vehicles, construction and demolition and from other waste facilities and companies. The full allowed activities can be viewed within the Waste Facility Permit (Permit number WFP-FG-13-000203).

# 2 Scope

This summary report will investigate the environmental impact of activity within the Permitted Area on receptors outside the abatement. Historical dust fall, associated with activities, was reviewed in order to determine the possible sources of the dust exceedance within the site boundary and impact of dust on receptors in order to propose further mitigation measures as requested by Fingal County Council.

To this end, we will endeavour to examine and compare data gathered and submitted to Fingal County Council for the years 2019, 2020 2021 and 2022 and compare this with the data collected in 2023, 2024 and 2025. This should allow for an assessment of any environmental impact associated with dust, from the activities compared to the tonnage in regard to dust generation. The applicant has employed a significant number of mitigation measures already.

In order to carry out this assessment, ESC Environmental has followed the data independently and without foredrawn conclusions. Much of the data originally collected and recorded on site was done so by Boylan Consulting as part of the monitoring regime required by Fingal County Council Environmental Section and associated with the Waste Facility Permit (Number WFP-FG-13-0002-03) for the current operations.

# 3 Dust Fall Influences

In assessing dust impacts, the distance from the source to the sensitive location is crucial, as airborne and deposited dust tend to settle out close to the emission source. Smaller dust particles remain airborne for longer, dispersing widely and depositing more slowly over a wider area.

The most important climatological parameters governing the atmospheric dispersion of particles are as follows: wind direction determines the broad transport of the emission and the sector of the compass into which the emission is dispersed; and wind speed will affect ground level emissions by increasing the initial dilution of particles in the emission. It will also affect the potential for dust entrainment. Rainfall is also an important climatological parameter in the generation of dust; sufficient amounts of rainfall can suppress dust at the source and eliminate the pathway to the receptor.

## 3.1 Pathways of Dust

When dust is generated at a source the dust particles are transported by wind. How far and how much dust particles are transported depends predominantly on particle size and wind speed and other metrological conditions. Only airborne dust should be collected in the dust jars. The amount of storm events, prevailing wind and rainfall is therefore extremely important to consider. Dust fall can raise suspended solids in the discharge from the rainfall yard run-off. The Total Suspended Solids are currently removed from the run-off discharge by silt traps and a sand filter, this pathway is therefore excluded from this report. Certain dust pathways are supressed with existing mitigation measures. During dry weather the site is misted regularly to contain the dust on site.

## 3.2 Ecological Receptors of Dust Fall

The area is predominantly agricultural land directly at the boundaries of the site. Only the entrance has a direct boundary with the road. The nearest hydrological receptor is ca. 530m to the northwest and 1km in southeastern direction. These streams ultimately flow into Malahide Estuary which is an SAC/SAP. Approx. 850m in southwestern direction is the Santry stream which flows towards North Bull Island SPA and North Dublin Bay SAC, this has been excluded as a receptor as the wind is rarely coming from the Northern directions.

## 3.3 Human Receptors of Dust Fall

To the northwest there is a residential village of St Margaret's, with the closest residence at 60m. There are 3 treelines between the site and the residence and village.

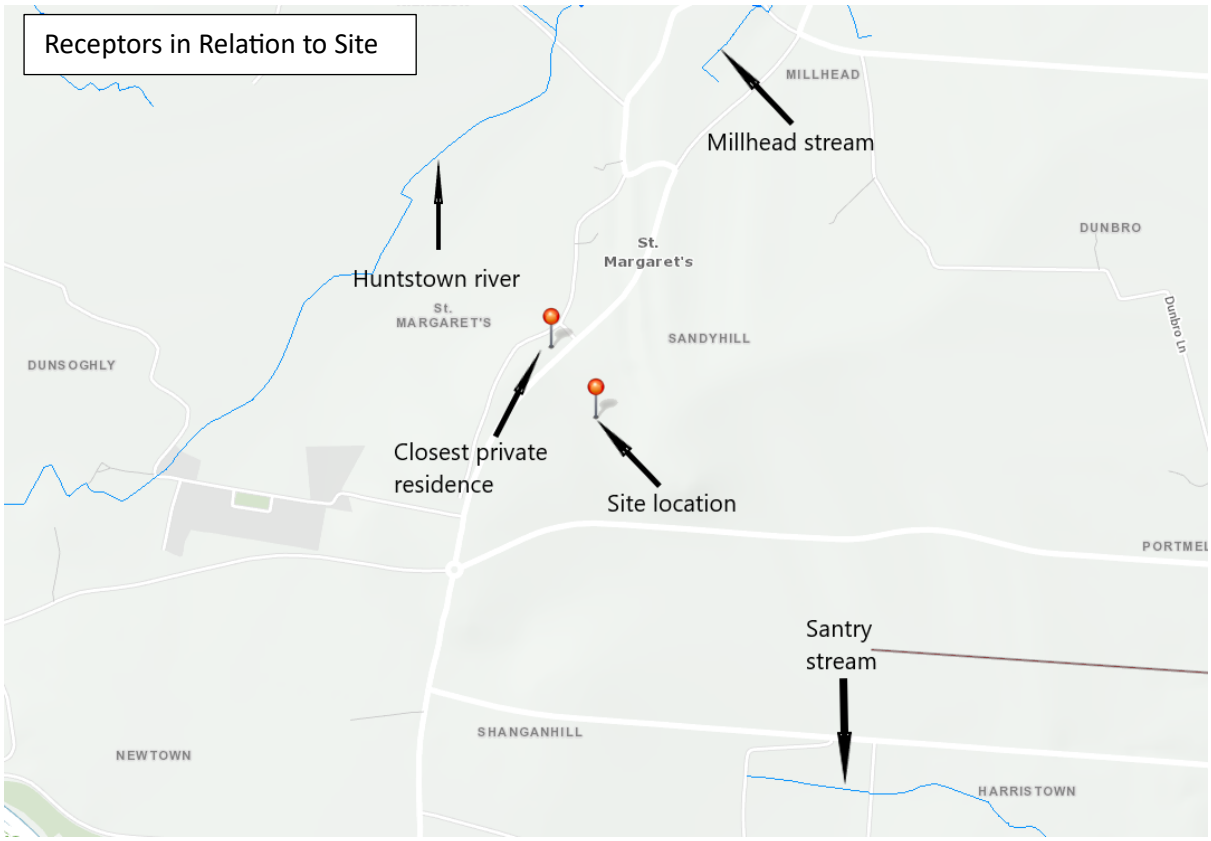


*Figure 1: Map of receptors in relation to the site (source GSI.ie)*

## 3.4 Existing mitigation measures

The closest residence is situated behind 3 treelines and upwind from the prevailing wind at the facility. The receptors are also protected by an existing dust netting above the western boundary fencing. The site is fully surfaced with concrete and is housekeeping is above the standard usually found at this type of facility. The site is cleaned by a road sweeper 3 times per week, and a forklift with a brush attachment is used regularly. The site is surrounded by enclosed boundary fencing, treelines and embankment. Double stacked shipping container form an obstacle for the dust fall emissions to the south of the hammermill. When dust generation is likely (dry weather and/or high wind speed) the site is misted with water by a tractor with a water tank trailer


*Figure 2: Existing dust abatement*

# 4 Methodology of Dust Fall Measurement

Environmental dust fall is measured by collecting dust precipitation using the Bergerhoff method. The Bergerhoff dust measurements are long term ambient dust measurements usually carried out over a 30 day period (-/+ 2 days). They provide long term ambient dust data and are usually measured at the perimeter of a building site, landfill site or an industrial activity with the potential to generate dust.

## 4.1 Dust Monitoring Locations

Dust monitoring locations were selected by Fingal County Council's environmental section, as part of their Permit conditions. Historic data uses these monitoring locations.

Dust depositions were initially monitored bi-annually at 3 locations on the St Margaret's site boundary. Sampling locations were updated in August 2021 from 3 to 5 sampling locations due to the introduction of the hammermill installation. The Local Authority requested bi-monthly dust sampling in 2023. ESC has increased this monitoring to monthly until 2025 to gather more data and accelerate the determination of the source of the exceedance of the dust within site boundaries. As the locations of the dust measurements occur before the abatement and mitigation measures, an additional 4 monitoring points were added to measure windblown dust after the abatement measures.

When the dust control locations were introduce the laboratory was also requested to perform the analyses for organic and inorganic fraction of the total dust.

The results of Dust Deposition Monitoring from locations are compared to the German TA Luft dust deposition limit value of 350 mg/m2/day as per the site Waste facility permit conditions (Condition 6.21). The dust is measured for a 30-day period (plus or minus 2 days) and the results calculated.

In the monitoring reports the prevailing wind and rainfall data are included from each measurement period.

Limitations and issues with the sample locations are described in a separate chapter.

## 4.2 Laboratory Results Interpretation

The collected dust pots were sent to Fitz Scientific for analysis. The determination of total dust precipitation was calculated following VDI 2119. Following the standard, to calculate the dust precipitation into the standard units the following formula is used:

$$X = (G \times f)/(A \times t)$$

Where:

- X = dust precipitation in $g/m^2/day$ or $mg/m^2/day$
- G = mass of the dust precipitation sample in g or mg
- f = 10,000 (conversion factor)
- A = Collecting area in cm2
- t = period of sampling (collecting time) in days

## 4.3 Dust Monitoring Points Location Map

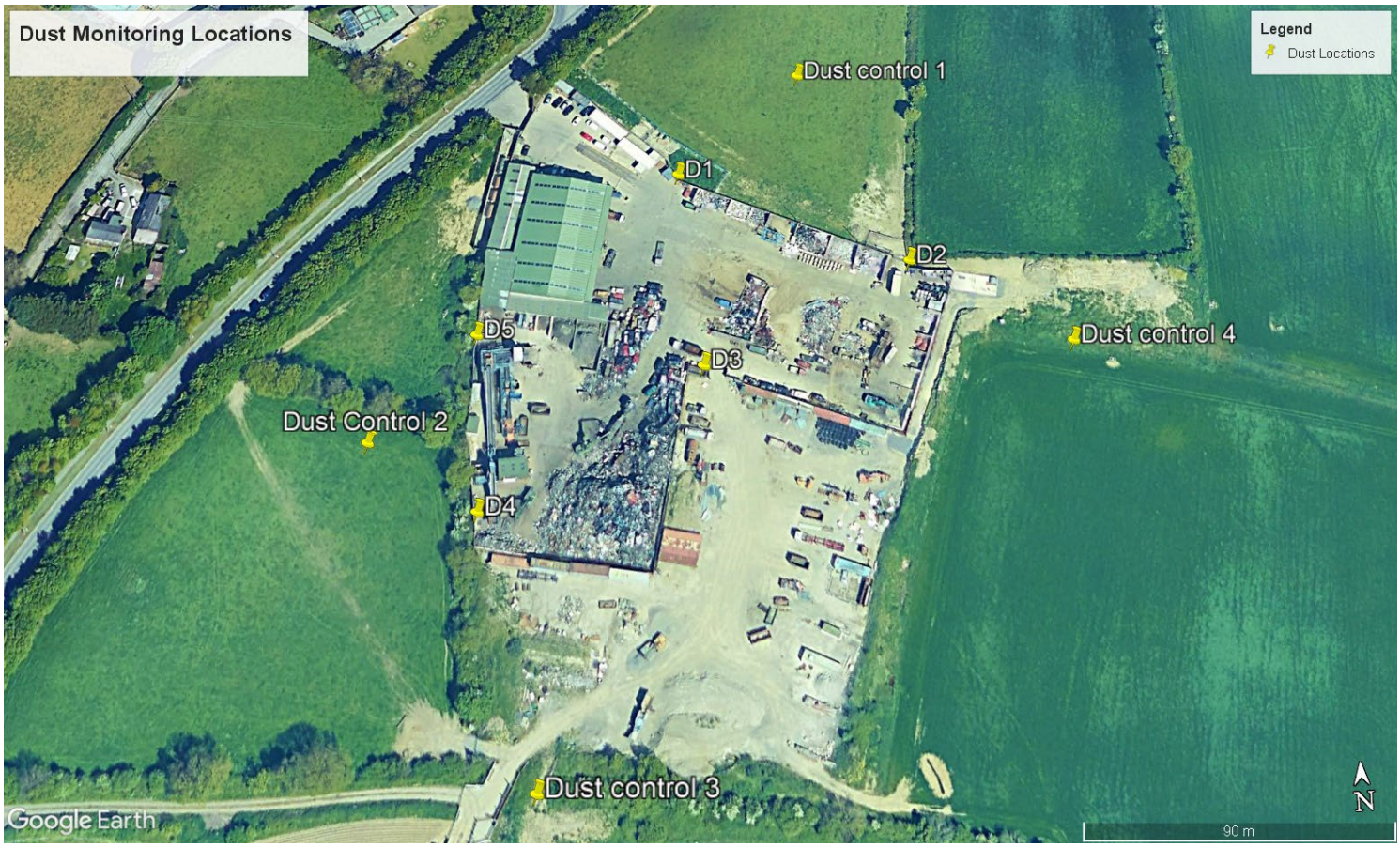


*Figure 3: Dust monitoring locations and additional dust control stations*

# 5 Dust Monitoring Results 2019-2023

Below are the results from 2019 to September 2023. The below figures are total dust and the inorganic fraction of the dust. The monitoring reports from April/May include inorganic, organic and total dust concentrations in combination with metrological data such as wind roses and rainfall data. The separation of those figures was only carried out from the April/May 2023 results onwards to aid in the investigation of the source of exceedances within the site boundary. The waste accepted at the facility are generally inorganic in nature. Furthermore, the previous data was incomplete and limited. It also needs to be noted that all the dust sample jars are lower than the boundary fencing and D4 and D5 are placed directly under the dust netting (abatement) and at the treeline. The limitations and issues regarding each dust sample location will be described in a separate chapter. The results are presented in the table below which also highlights the annual tonnage in the year of sampling. Table 2 shows the inorganic dust results from the same samples as Table 1. In Table two the results a presented from the inorganic fraction of the dust fall.

*Table 1, Total Dust results*

| Total Dust results 2019-2023 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | D1 | D2 | D3 | D4 | D5 | DC1 | DC2 | DC3 | DC4 |
| 2019 Q1 | **1058** | 170 | 141 | - | - | | | | |
| 2019 Q2 | 343 | **481** | 141 | - | - | | | | |
| 2020 Q1 | - | **676** | 153 | - | - | | | | |
| 2020 Q4 | - | 23 | 45 | - | - | | | | |
| 2021 Q1 | 14 | - | 255 | - | - | | | | |
| 2021 Q4 | 168 | 88 | 234 | 82 | 49 | | | | |
| 2022 Q1 | **611** | **536** | **865** | **429** | **659** | | | | |
| 2022 Q4 | 330 | **395** | **1322** | **1549** | **1477** | | | | |
| 2023 Q1 | 197 | **1054** | **648** | **875** | 267 | | | | |
| 2023 April/May | 169 | 50 | 169 | **402** | 248 | | | | |
| 2023 May/June | 228 | **369** | **556** | **412** | 182 | | | | |
| 2023 June/July | **472** | **505** | **621** | 230 | **531** | | | | |
| 2023 Aug/Sept | 293 | **876** | 236 | **1726** | 122 | 74 | 173 | | |
| 2023 Sept/Oct | 83 | 98 | 113 | **551** | 94 | 20 | 46 | 21 | 23 |
| 2023 Oct/Nov | 82 | 197 | 68 | 101 | 128 | 29 | 30 | 47 | 54 |
| 2023 Nov/Dec | 82 | 148 | 123 | 185 | 172 | 35 | 166 | 156 | 112 |
| 2024 Jan/Feb | 343 | 59 | 272 | **521** | **408** | 41 | 154 | 8 | 1 |
| 2024 Feb/March | 251 | **367** | **427** | **885** | **550** | 74 | 89 | 55 | 51 |

*Exceedance of over 350mg/m$^2$/day are presented in bold.*

*Table 2 Results of inorganic dust*

| Total Inorganic Dust results 2019-2023 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | D1 | D2 | D3 | D4 | D5 | DC1 | DC2 | DC3 | DC4 |
| 2023 April/May | 138 | 42 | 157 | 301 | 186 | | | | |
| 2023 May/June | 152 | 264 | **423** | 242 | 88 | | | | |
| 2023 June/July | 345 | **384** | **481** | 136 | 295 | | | | |
| 2023 Aug/Sept | 205 | **631** | 187 | **1014** | 49 | 29 | 62 | | |
| 2023 Sept/Oct | 62 | 66 | 71 | **368** | 55 | 4 | 26 | 3 | 20 |
| 2023 Oct/Nov | 45 | 127 | 37 | 67 | 65 | 15 | 13 | 27 | 26 |
| 2023 Nov/Dec | 52 | 100 | 72 | 122 | 103 | 22 | 127 | 103 | 88 |

*Exceedance of over 350mg/m$^2$/day are presented in bold.*

## 5.1 Results January/February 2024

Table 8: Dust fall results as reported for January/February 2024

| **MONTH: Monitoring Date:** | **January** 15/01/2024 | | **February** 12/02/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm$^2$** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 99.8 | 10000 | 104 | 28 | 343 | 282 | 59 |
| D2 | 17.1 | 10000 | 104 | 28 | 59 | 15 | 43 |
| D3 | 79.2 | 10000 | 104 | 28 | 272 | 189 | 83 |
| D4 | 151.6 | 10000 | 104 | 28 | **521** | **356** | 164 |
| D5 | 118.7 | 10000 | 104 | 28 | **408** | 278 | 130 |
| Control 1 | 12 | 10000 | 104 | 28 | 41 | 14 | 27 |
| Control 2 | 44.8 | 10000 | 104 | 28 | 154 | 130 | 23 |
| Control 3 | 2.2 | 10000 | 104 | 28 | 8 | 0 | 7 |
| Control 4 | 0.4 | 10000 | 104 | 28 | 1 | 1 | 0 |
| **LIMIT** | | | | | | **350** | |

## 5.2 Results February/March 2024

Table 8: Dust fall results as reported for February/March 2024

| MONTH: Monitoring Date: | February 13/02/2024 | | March 14/03/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 73.1 | 10000 | 104 | 30 | 251 | 158 | 93 |
| D2 | 106.9 | 10000 | 104 | 30 | **367** | 201 | 167 |
| D3 | 124.3 | 10000 | 104 | 30 | **427** | 287 | 140 |
| D4 | 257.6 | 10000 | 104 | 30 | **885** | **566** | 319 |
| D5 | 160.2 | 10000 | 104 | 30 | **550** | **363** | 187 |
| Control 1 | 21.5 | 10000 | 104 | 30 | 74 | 34 | 40 |
| Control 2 | 25.9 | 10000 | 104 | 30 | 89 | 1 | 88 |
| Control 3 | 16.1 | 10000 | 104 | 30 | 55 | 22 | 33 |
| Control 4 | 14.9 | 10000 | 104 | 30 | 51 | 3 | 48 |
| **LIMIT** | | | | | | **350** | |

## 5.3 Results March/April 2024

Table 8: Dust fall results as reported for March/April 2024

| MONTH: Monitoring Date: | March 18/03/2024 | | April 16/04/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 99.6 | 10000 | 104 | 29 | 330 | 227 | 103 |
| D2 | 92.2 | 10000 | 104 | 29 | 306 | 204 | 102 |
| D3 | 94.5 | 10000 | 104 | 29 | 313 | 181 | 132 |
| D4 | 233.2 | 10000 | 104 | 29 | **773** | 319 | 308 |
| D5 | 162.9 | 10000 | 104 | 29 | **540** | 294 | 246 |
| Control 1 | 7.1 | 10000 | 104 | 29 | 24 | 10 | 14 |
| Control 2 | 19 | 10000 | 104 | 29 | 63 | 8 | 55 |
| Control 3 | 18.2 | 10000 | 104 | 29 | 60 | 24 | 36 |
| Control 4 | 14.6 | 10000 | 104 | 29 | 48 | 18 | 30 |
| **LIMIT** | | | | | | **350** | |

## 5.4 Results April/May 2024

| MONTH: Monitoring Date: | April 16/04/2024 | | May 15/05/2024 | | | | |
|---|---|---|---|---|---|---|---|
| Location | Lab result | Conversion factor | Collection Area | Sample Period | Dust deposition mg/m2/day | | |
| | mg/jar | | $cm^2$ | Days | Total | inorganic | organic |
| D1 | 90.2 | 10000 | 104 | 29 | 299 | 196 | 103 |
| D2 | 65.8 | 10000 | 104 | 29 | 218 | 149 | 69 |
| D3 | 135.3 | 10000 | 104 | 29 | **449** | 333 | 115 |
| D4 | 970 | 10000 | 104 | 29 | **3216** | **2414** | **802** |
| D5 | 124.5 | 10000 | 104 | 29 | **413** | 237 | 176 |
| Control 1 | 56.3 | 10000 | 104 | 29 | 187 | 149 | 38 |
| Control 2 | 50.9 | 10000 | 104 | 29 | 169 | 132 | 37 |
| Control 3 | 12.3 | 10000 | 104 | 29 | 41 | 19 | 22 |
| Control 4 | 37.6 | 10000 | 104 | 29 | 125 | 71 | 53 |
| **LIMIT** | | | | | | **350** | |

## 5.5 Results May/June 2024

| MONTH: Monitoring Date: | May 15/05/2024 | | June 14/06/2024 | | | | |
|---|---|---|---|---|---|---|---|
| Location | Lab result | Conversion factor | Collection Area | Sample Period | Dust deposition mg/m2/day | | |
| | mg/jar | | $cm^2$ | Days | Total | inorganic | organic |
| D1 | 129 | 10000 | 104 | 30 | **413** | 329 | 84 |
| D2 | 245.3 | 10000 | 104 | 30 | **786** | **566** | 220 |
| D3 | 260.7 | 10000 | 104 | 30 | **836** | **616** | 205 |
| D4 | 1905.4 | 10000 | 104 | 30 | **6107** | **4348** | 175 |
| D5 | 207.7 | 10000 | 104 | 30 | **666** | **432** | 233 |
| Control 1 | 81.6 | 10000 | 104 | 30 | 262 | 138 | 123 |
| Control 2 | 81.7 | 10000 | 104 | 30 | 262 | 175 | 87 |
| Control 3 | 71.6 | 10000 | 104 | 30 | 229 | 152 | 77 |
| Control 4 | 76.9 | 10000 | 104 | 30 | 246 | 179 | 68 |
| **LIMIT** | | | | | | **350** | |

## 5.6 Results June/July 2024

| MONTH: Monitoring Date: | June 14/06/2024 | | July 15/07/2024 | | | | |
|---|---|---|---|---|---|---|---|
| Location | Lab result | Conversion factor | Collection Area | Sample Period | Dust deposition mg/m2/day | | |
| | mg/jar | | $cm^2$ | Days | Total | inorganic | organic |
| D1 | 78.3 | 10000 | 104 | 31 | 243 | 157 | 86 |
| D2 | 116.5 | 10000 | 104 | 31 | **361** | **262** | 99 |
| D3 | 144.7 | 10000 | 104 | 31 | **449** | **320** | 129 |
| D4 | 548.5 | 10000 | 104 | 31 | **1701** | **1213** | 488 |
| D5 | 131.8 | 10000 | 104 | 31 | **409** | **211** | 198 |
| Control 1 | 77.1 | 10000 | 104 | 31 | 239 | 183 | 56 |
| Control 2 | 89.9 | 10000 | 104 | 31 | 279 | 199 | 80 |
| Control 3 | 16.9 | 10000 | 104 | 31 | 52 | 5 | 47 |
| Control 4 | 55.1 | 10000 | 104 | 31 | 171 | 92 | 79 |
| **LIMIT** | | | | | | **350** | |

## 5.7 Results August 2024

| MONTH: Monitoring Date: | July 31/07/2024 | | August 28/08/2024 | | | | |
|---|---|---|---|---|---|---|---|
| Location | Lab result | Conversion factor | Collection Area | Sample Period | Dust deposition mg/m2/day | | |
| | mg/jar | | $cm^2$ | Days | Total | inorganic | organic |
| D1 | 195.8 | 10000 | 104 | 28 | **672** | **451** | 221 |
| D2 | 208.9 | 10000 | 104 | 28 | **717** | **479** | 239 |
| D3 | 214.9 | 10000 | 104 | 28 | **738** | **534** | 204 |
| D4 | 380.1 | 10000 | 104 | 28 | **1305** | **860** | **446** |
| D5 | 387.4 | 10000 | 104 | 28 | **1330** | **845** | **485** |
| Control 1 | 14.9 | 10000 | 104 | 28 | 51 | 17 | 34 |
| Control 2 | 36.6 | 10000 | 104 | 28 | 126 | 54 | 70 |
| Control 3 | 19.5 | 10000 | 104 | 28 | 67 | 23 | 44 |
| Control 4 | 27.7 | 10000 | 104 | 28 | 95 | 45 | 50 |
| **LIMIT** | | | | | | **350** | |

## 5.8 Results September 2024

| MONTH: Monitoring Date: | August 31/08/2024 | | September 30/09/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 98.7 | 10000 | 104 | 30 | 316 | 198 | 119 |
| D2 | 234.6 | 10000 | 104 | 30 | **752** | **478** | 274 |
| D3 | 191.6 | 10000 | 104 | 30 | **614** | **410** | 204 |
| D4 | 1449.3 | 10000 | 104 | 30 | **4645** | **3498** | 115 |
| D5 | 128.9 | 10000 | 104 | 30 | **413** | **214** | 199 |
| Control 1 | 25.6 | 10000 | 104 | 30 | 82 | 21 | 61 |
| Control 2 | 21.2 | 10000 | 104 | 30 | 68 | 21 | 47 |
| Control 3 | 29.5 | 10000 | 104 | 30 | 95 | 46 | 49 |
| Control 4 | 36.5 | 10000 | 104 | 30 | 117 | 47 | 70 |
| **LIMIT** | | | | | | **350** | |

## 5.9 Results October 2024

| MONTH: Monitoring Date: | September 30/09/2024 | | October 31/10/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 98.7 | 10000 | 104 | 31 | **533** | **411** | 123 |
| D2 | 234.6 | 10000 | 104 | 31 | 74 | 59 | 16 |
| D3 | 191.6 | 10000 | 104 | 31 | **360** | 282 | 78 |
| D4 | 1449.3 | 10000 | 104 | 31 | **4495** | **3656** | **250** |
| D5 | 128.9 | 10000 | 104 | 31 | **2382** | **1202** | **118** |
| Control 1 | 25.6 | 10000 | 104 | 31 | 74 | 43 | 30 |
| Control 2 | 21.2 | 10000 | 104 | 31 | 286 | 176 | 110 |
| Control 3 | 29.5 | 10000 | 104 | 31 | 108 | 50 | 58 |
| Control 4 | 36.5 | 10000 | 104 | 31 | 126 | 71 | 54 |
| **LIMIT** | | | | | | **350** | |

## 5.10 Results November 2024

| MONTH: Monitoring Date: | October 31/10/2024 | | November 28/11/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 98.7 | 10000 | 104 | 28 | **408** | 286 | 122 |
| D2 | 234.6 | 10000 | 104 | 28 | 288 | 200 | 89 |
| D3 | 191.6 | 10000 | 104 | 28 | 188 | 120 | 68 |
| D4 | 1449.3 | 10000 | 104 | 28 | **1417** | **1010** | **407** |
| D5 | 128.9 | 10000 | 104 | 28 | **743** | **501** | 241 |
| Control 1 | 25.6 | 10000 | 104 | 28 | 99 | 49 | 50 |
| Control 2 | 21.2 | 10000 | 104 | 28 | 99 | 66 | 33 |
| Control 3 | 29.5 | 10000 | 104 | 28 | 54 | 27 | 26 |
| Control 4 | 36.5 | 10000 | 104 | 28 | 167 | 101 | 66 |
| **LIMIT** | | | | | | **350** | |

## 5.11 Results January 2025

| MONTH: Monitoring Date: | October 31/10/2024 | | November 28/11/2024 | | | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Lab result** | **Conversion factor** | **Collection Area** | **Sample Period** | **Dust deposition mg/m2/day** | | |
| | **mg/jar** | | **cm²** | **Days** | **Total** | **inorganic** | **organic** |
| D1 | 128 | 10000 | 104 | 28 | **440** | 296 | 143 |
| D2 | 120.7 | 10000 | 104 | 28 | **414** | 286 | 128 |
| D3 | 89.1 | 10000 | 104 | 28 | 306 | 212 | 94 |
| D4 | 529.3 | 10000 | 104 | 28 | **1818** | **1259** | **558** |
| D5 | 1253. | 10000 | 104 | 28 | **4306** | **3355** | **951** |
| Control 1 | 38.4 | 10000 | 104 | 28 | 132 | 92 | 40 |
| Control 2 | 38 | 10000 | 104 | 28 | 130 | 81 | 49 |
| Control 3 | 37 | 10000 | 104 | 28 | 127 | 78 | 49 |
| Control 4 | 66.8 | 10000 | 104 | 28 | 229 | 153 | 76 |
| **LIMIT** | | | | | | **350** | |

While it is acknowledged that there are recorded exceedances at the dust fall monitoring locations, these exceedances occur within the permitted area only, as the monitoring takes place prior to mitigation measures in place to suppress airborne dust leaving the site. The dust results do not provide data or evidence of dust pollution emanating from the site beyond the immediacy of the machinery or outside of the site's boundary. No recording of dust levels has been sought by Fingal at sensitive receptors at/outside the site boundary. However, in order to understand the dust sources and dispersion better, a number of additional dust jar locations outside of the site/beyond the mitigation measures have been added. This allows for an assessment of the effectiveness of the mitigation measures and allows for the proposal of further mitigation measures. In this assessment a scientific approach based on data without predetermined conclusions was followed.

From the data it is evident that there is not a clear trend of exceedances as they can occur at most locations, whether plant is in operation or not. However, none of these exceedances prove that the dust generated on site is actually impacting on the receptors in the area. For example, D4 and D5 (located immediately adjacent to the Hammerhill) showed exceedances even though the hammermill was not operational from the 27$^{th}$ of April 2023 to 9$^{th}$ August 2023. Furthermore, these exceedances are measured before the dust netting and treeline at the boundary. The dust jars are positioned in such manner that the material caught in the netting can fall straight into the jars. For this reason, the laboratory was asked to separate the organic and inorganic fraction of the total material in the sample. In previous communications the council expressed concerns about this commonly used method, as the council was of the opinion that the organic matter could have come from the fluff of the hammermill. However, the hammermill was not in operation for three months after the separation was conducted.

The positioning and further explanation will be done in the next chapter. The addition from Dust Control 1 and Dust Control 2 (DC 1 and DC2 in the table) is mitigating a short coming in the data of windblown dust after the mitigation netting. Dust Control 1 is placed North of D2 and D1 and in the direction of the nearest hydrological receptor 1 km in Northeastern direction. Dust Control 2 is placed east of D4 and D5 in between closest residence at and the nearest hydrological receptor is c.530 m to the northwest.

The dust control locations are placed free standing, around 50-60m from the site boundary within agricultural fields. The first indication is that the dust fall measured at the site is not transported out to the Dust Control locations despite significant exceedances in D2 and D5. This might be due to the weight of the particles and the mitigation (dust netting).

Two additional Dust Control Locations, Dust Control 3 (DC3) and Dust Control 4 (DC4), have been added since October 2023, in order to cover each wind direction. This will provide data on which further mitigation measures will be based.

It is clear from over a year of data that the high concentrations at the dust locations before mitigation do not translate to increased levels at the locations after mitigation. This can mean that either the mitigation measures works with great efficiency or that the dust locations are indeed not measuring dust fall only but include debris.

## 5.12 Limitations of Dust Jar Locations

In order to understand the placing of the dust location the following documents were viewed; Technical Guidance Note (Monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities (UK Environment Agency, July 2013) and the Landfill Manuals Landfill Monitoring 2nd edition (EPA 2003).

### 5.12.1 Guidance documents

The Landfill Manuals - Landfill Monitoring 2nd edition states:

- *Samples are collected in a collecting bottle mounted on a 2m pole and protected by a bird guard. Analysis employs evaporation to dryness which produces a result for Total Deposited Dust (both dissolved and undissolved).*
- *The monitoring period should be for 30 + 2 days unless biological growth is evident in which case shorter or more frequent analysis may be desirable.*
- *A typical monitoring regime may require a minimum of three monitoring periods per year, with two of the sampling periods occurring between May and September.*
- *Monitoring may be required at the facility boundary, near sensitive receptors and potential sources. Ideally the gauges should be positioned at a minimum of four locations surrounding the site of interest.*
- *It is preferable to monitor upwind and downwind of the prevailing wind.*
- *The gauges should be positioned away from interfering objects such as trees to minimise the risk of interference from birds, falling leaves, etc. Directional dust deposition gauges can be used alongside the Bergerhoff gauge if the source of the dust is in dispute. A relevant wind rose for each sampling period also provides additional information on wind direction*.

The Technical Guidance Note (Monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities (UK Environment Agency, July 2013) states:

**Sampling Height**. The sample air inlet should generally be 1.5-2 m above ground level to reflect the human breathing zone. This is sometimes not practicable, but the height of the sample intake should be no higher than 10 m above ground level, ideally less than 5 m.

**Obstructions.** The sampling position should not be located in the lee of major obstructions such as tall buildings or walls. In such circumstances, wake effects can sometimes cause recirculating air flows and the build up of air pollutants. In other instances, such obstructions can shield the sampling site from the pollution source. As a general rule, the top of obstructions should subtend less than a 30 degree angle with the horizontal of the sampling point.

**Overhang.** The sampling position should be open to the sky, with no overhanging trees or structures as these can act as very efficient pollutant sinks. A US guideline sets 20 m as the minimum distance from the dripline of trees.

**Interfering Sources.** The sampling position should not be subject to the interfering influences of sources not encompassed by the survey objective, e.g. nearby rooftop vents, chimney stacks, multi-storey car parks. There should be no major sources of pollution within 50 m, and no intermediate sources within 20 m. The surrounding area (within 100 m) should not be undergoing major redevelopment. Vehicles should not be left running within 5 m of the sample inlet.

### 5.12.2 Dust Location Limitations and Issues

There are limitations as the site has limited areas where a representative dust fall monitor can be placed within the permitted area, however there are some issues with the current dust jars as they can collect debris that would otherwise not be considered windblown dust fall. All dust jars are placed below the closed boundary fencing causing friction between the air and the ground, and man-made obstacles, causes eddies and therefore turbulence in the lower levels. The intensity of this eddy motion depends on the strength of the surface wind, the nature of the surface and the stability of the air. Photos of the positioning of the dust jars as well as examples of the debris found in the dust jars can be viewed in chapter 8.

#### *5.12.2.1 Dust Location D1*

Dust location D1 is at located the entrance road and weighbridge. The dust jar placement is attached at a girder that separates a closed boundary fencing that is higher than the dust jar and an open palisade fencing.

#### *5.12.2.2 Dust Location D2*

Dust location D2 is located below the top of the closed boundary fencing, in front of a large gate that gives access to the adjacent agricultural field. The dust jar is meters away from the loading area where a grab lifts metal meters high to load and unload Lorries and moves metal towards the Shredder/Baler. Debris can fall into the jar here that would otherwise not be airborne by wind. The dust location is located before mitigation measures.

#### *5.12.2.3 Dust Location D3*

Dust location D3 is placed below the top of closed fence and near the container tipper where containers get loaded vertically at great height (up to 12m). Debris can fall into the dust jar that would otherwise not be airborne. The dust location is located before mitigation measures.

#### *5.12.2.4 Dust Location D4*

Dust location D4 is enclosed by machinery which is much higher than the dust monitoring jar. Debris that would not be classed as airborne dust can fall from the plant into the dust jar. Furthermore, the dust jar is placed directly under the 5m high abatement dust netting, which effectively acts as a sail from which debris can fall directly into the jar. The jar is placed in such a manner that organic material can fall in from the treeline at the same boundary. The material from the trees can blow against the netting and fall into the jar. The dust location is located before mitigation measures.

#### *5.12.2.5 Dust Location D5*

Dust Location D5 is placed directly next to a shipping container and the hammermill both higher than the dust jar. The jar is attached to a closed boundary fencing and is situated directly under the 5m high abatement dust netting which effectively act as a sail from which it falls directly into the jar. The jar is placed in such a manner that organic material can fall in from the treeline at the same boundary. The material from the trees can blow against the netting and fall into the jar. Debris, that would not be airborne dust, from the higher plant can collect on the flat area of the shipping container roof and roll into the jar. The dust location is located before mitigation measures.

### 5.12.3 Additional Dust Jar Locations & Monitoring.

Given the issues highlighted above, it is our professional opinion and recommendation that these dust locations should be omitted from any conclusions as the results are not representative of windblown dust fall. Any correlation would be difficult to interpret from these results.

Additionally, the hammermill was not in use from the 27th of April 2023 to 9th of August 2023, which has delayed investigations and discussions with FCC.

To mitigate the issues with the placement of the dust jars, dust control sample points at four locations outside of the facility were installed to gain a better understanding of the general airborne dust in the area and if the dust generated onsite, actually travels to and is impacting any receptors. The first results indicate that no airborne dust transported further than the distance of the 4 control sample locations and therefore will not reach the receptors. It would also be helpful to the investigation and proposal of further mitigation measures if Fingal County Council could indicate which environmental receptor of the dust fall is their main concern. In the interim some possible receptors have been identified and were used for the implementation of 4 additional dust control monitoring locations.

It is the intention to target investigations and following that a proposal will be formulated of additional mitigation measures, if necessary.

The table below sets out the distance from the dust control location to the closest boundary.

| Location | Distance from Boundary | Abatement between source and control |
|---|---|---|
| Dust control 1 | 49m | Closed Fence |
| Dust control 2 | 33m | Closed fence, dust netting, treeline |
| Dust control 3 | 72m | Double stacked containers, earth embankment |
| Dust control 4 | 44m | Closed fence, earth embankment |

# 6 Sources of Dust Exceedances

The collected data from the Dust Control Locations exclude the possibility of dust being transported from outside of the boundary. Similarly, it also indicates that no dust is transported by wind from inside the boundary towards any of the receptors.

The exceedances in D1 can be described to prevailing wind direction and the loading of material. No exceedances occurred in this location while the controls were in place, no further conclusions can be drawn.

The source of dust in D2 and D3 can be correlated to the activity of loading of material. This is thought to be the main source of the exceedances. It needs to be noted that in multiple instances larger and relative heavy particles found in these dust jars and these could be classed as debris rather than windblown dust (Some examples of what was found in the dust jars can be viewed in chapter 8). That said the investigations, which are further described in the bi-monthly monitoring results reports, show that in prolonged periods of rain the likelihood of an exceedance decreases.

There is no clear trend between exceedances in D4 and D5 and the activity in the hammermill as high measurements were recorded while the hammermill was operational or not. The activity of hammermill on dust exceedances can therefore be deemed minimal. The exceedances at this location have to be described to the placing of the jars directly under the netting. The prevailing wind can be correlated to the fact that more dust exceedances occur in D4 than in D5. The site is situated in very close proximity of Dublin airport and weather data is therefore extremely reliable in this location. Furthermore, there was a clear increase in the concertation levels as the netting became better tightened after a storm more debris was fond in the dust jars D4 and D5 and thus concertation levels increased. The

The main flaw in the measurement of wind-blown dust is that dust locations D1 to D5 are measured before mitigation measures and proposing further measures based upon these results would be flawed.

# 7 Dust Fall Conclusions

There is no indication that the dust exceedances mean that the dust is actually transported outside of the permitted area boundary or that there is any impact on any sensitive receptors. The main source of exceedance can be tracked to the close proximity of dust locations to vertically loading at height of shipping containers and thus the debris falling into the dust jars, due to the loading activities.

The data shows that in months with increased periods of rainfall there are no or little exceedances, this led to the implementation of increased misting infrastructure on site since May 2025.

# 8 Proposal of Correct Locations for Windblown Dust Fall

In the Permit review it is proposed to install 4 dust fall jars after mitigation measures in a free-standing manner. These differ slightly from the dust control locations as these had a double purpose namely: to assess dust generated off-site as well as the effectiveness from the existing mitigation measures. It is therefore proposed to move the positions closer to the boundary but after the mitigation measures.

The Dust locations (D North, D South, D West and D East) are proposed at a distance of 25m from the boundary to ensure a free-standing location in accordance with afore mentioned guidelines. This Proposal takes in consideration the prevailing wind onsite and the free-standing position away from treelines and other interfering factors while measuring windblown dust fall after the mitigation measures. See Google earth image on the next page.

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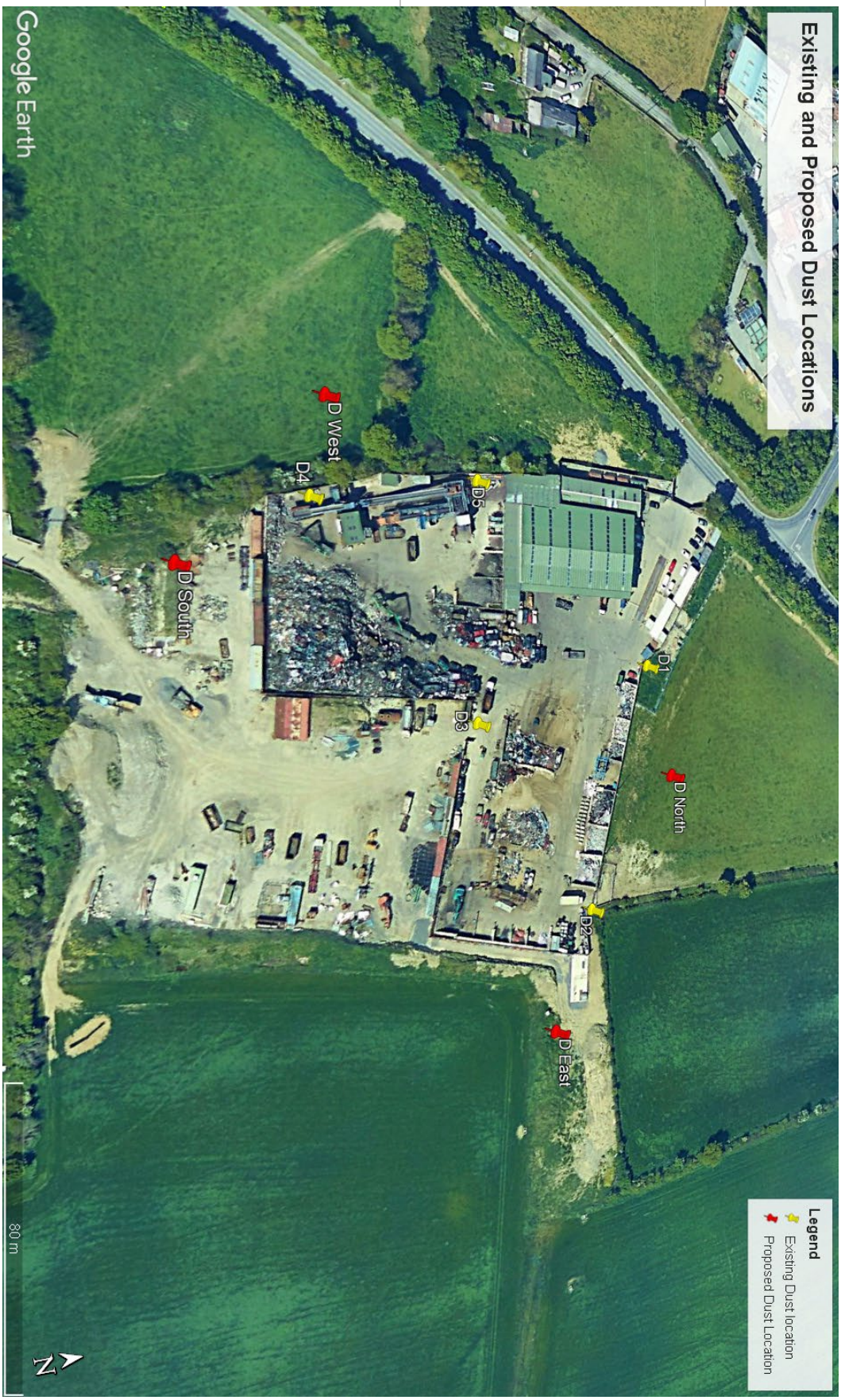

# 9 Photos Dust Locations and Dust Jars Content


*Photo 1: Photo of Dust monitor location D1 below the height of the boundary fencing*

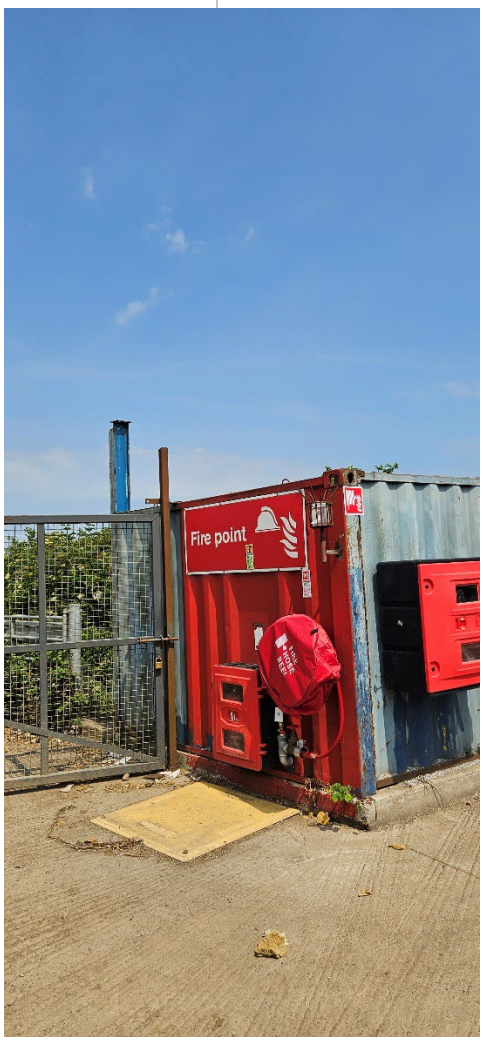


*Photo 2: Photo of D2 location below the boundary fencing*

*Photo 3: Photo of D2 location with close proximity to grab. Stockpile can be much higher than concrete dividers at this location*

*Photo 4: Photo showing the height at which the loading takes place.*

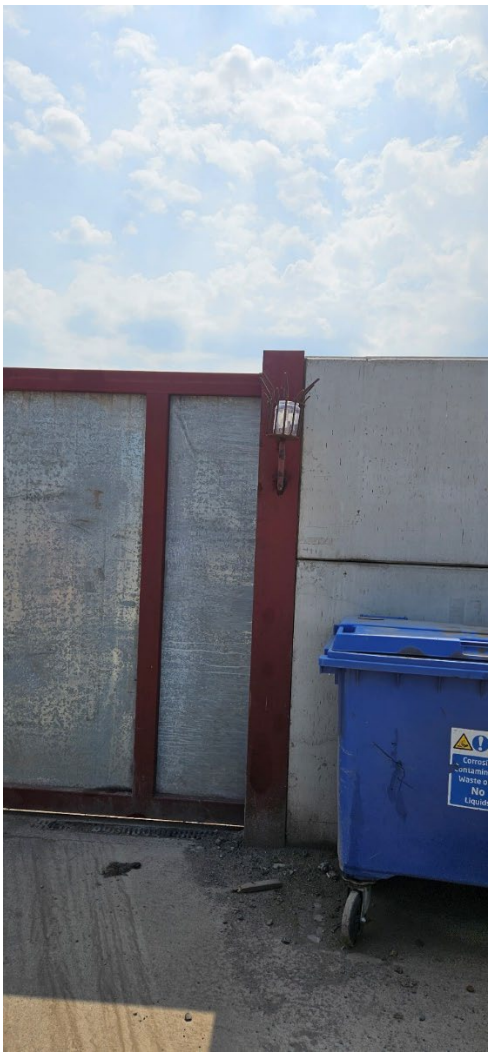

*Photo 5: Photo of dust monitor location D3*

*Photo 6: Photo of dust monitor location D3 near shipping container tipper, loading takes place up to 12m height*

*Photo 7 and 8: Location D4 clearly on the inside and under the dust abatement netting*

*Photo 91: Higher plant enclosing dust location D4 and treeline interference visible*

*Photo 102: Dust location D5 clearly on the inside and under netting and treeline interference visible*


*Photo 11 and 12 Dust location D5, container with higher flat surface directly next to collection point. Netting directly above collection point and at very close proximity the plant which is much higher than the collection jar. Allowing for debris to fall down into the jar*

*Photo 13: regular brushing to keep yard clean and avoid dust generation.*


*Photo 14: example of organic matter falling in dust jar at location D4 (only large leaves are removed before analyses)*

*Photo 15: Another example of material fallen (tape and organic material) into a dust jar at D4*


*Photo 16: examples of the dust jar after mitigation measures (no debris and very little organic material) Control jar is placed approx. 50m from netting and treeline at hammermill side.*

*Photo 17: Example of large debris particles and even piece of metal at D2*

*Photo 18: Example of large debris and organic material particles and even evidence of rust in D4*

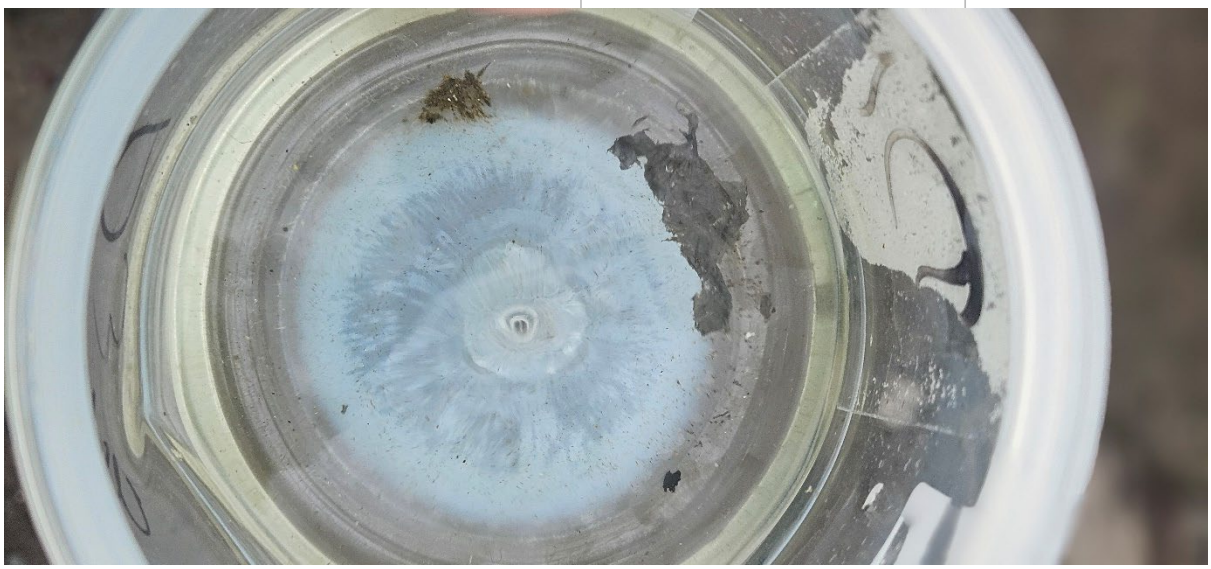

*Photo 18: Example of large debris and particles in D3*

*Photo 19: Example of sweet wrapper, large debris and particles in D4*

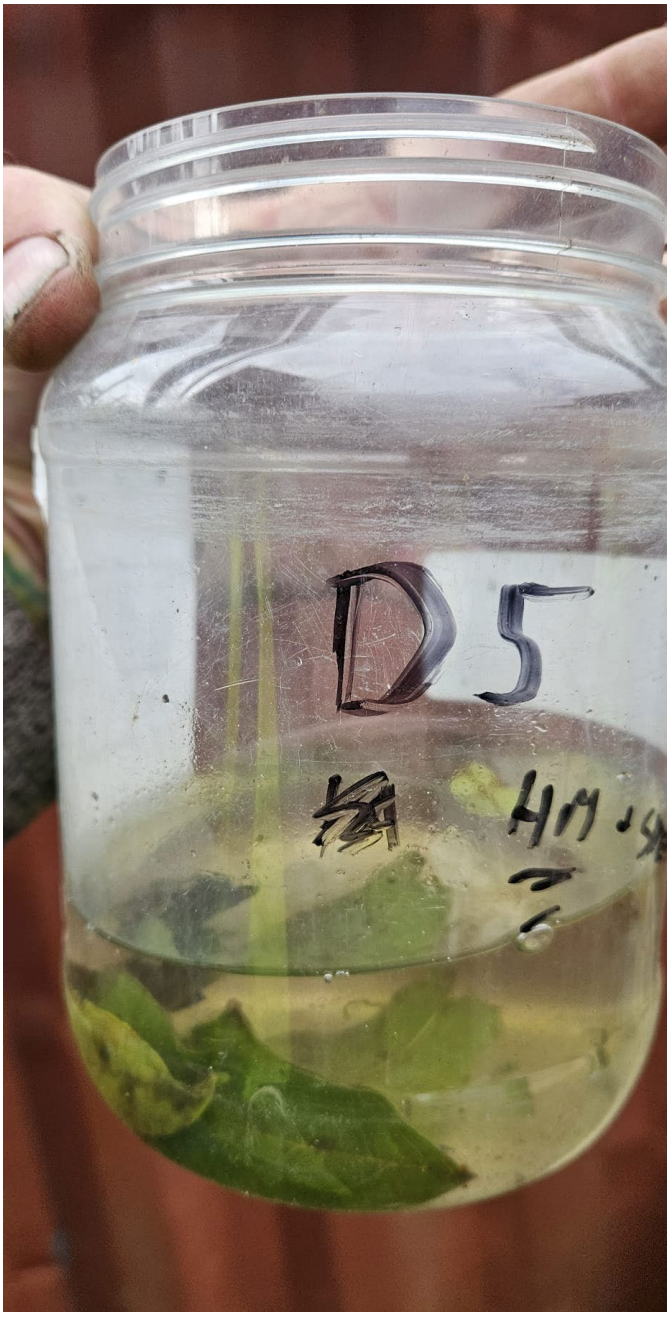


*photo 20: Leaves in D5*

*photo 21: Loading using the Tipper, loading at height.*

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IRWIN CARR CONSULTING

20 May 2025

CWPA

UNIT 10

NORTH STREET BUSINESS PARK

SWORDS

CO. DUBLIN

K67 C992

**Attention: Rachel Kenny**

Dear Rachel,

## SAINT MARGARETS RECYCLING AND TRANSFER CENTRE – SANDYHILL, ST MARGARET'S, CO. DUBLIN, K67 EW73

## REFERENCE: ABP-321466-24

I write further to the submission Further Information (FI) request from An Bord Pleanála (ABP) dated 1 May 2025 in relation to the above site.

It is the purpose of this letter to address the issues raised in relation to noise, with responses provided in the same order as raised in the FI request:

- Noise Monitoring Location

The background noise monitoring location was within the site boundary, towards the receptor locations across the road. The location is annotated on Figure 1 below:

Table 1: Noise Monitoring Location

- Operation of the site during the monitoring period

The site was operational during the daytime period from 09:00 to 16:00hrs during the monitoring period, with various equipment operating at different times within this period. As per the guidance in NG4 the limit levels were set at:

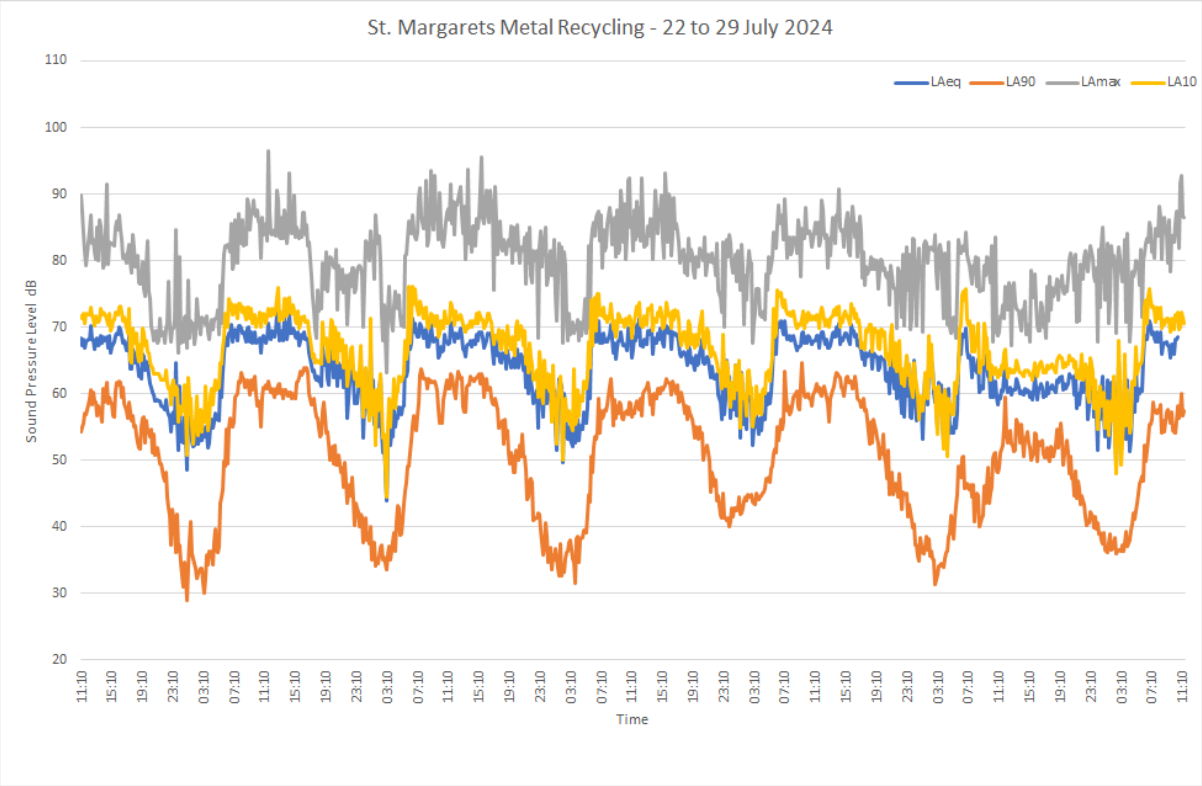
- Daytime (07:00 to 19:00hrs) – 55dB LAr,T
- Evening (19:00 to 23:00hrs) – 50dB LAr,T
- Night-time (23:00 to 07:00hrs) – 45dB LAeq,T

All of the measured noise levels during the times when the site was not operational were significantly above the 55dB daytime limit permitted by NG4. There is a high noise level in the wider vicinity of the site not associated with the recycling centre.

- $L_{Amax}$ and $L_{A10}$

Figure 2 below updates the graph from the original EIA chapter, showing the $L_{Amax}$ and $L_{A10}$ for each noise monitoring period.

Table 2: Noise Monitoring Results




- Character Penalties

Any tonal or impulsive character penalties apply to the noise levels received at the receptor locations. In relation to this site, the ambient background levels when the site is not operational in the daytime or evening period is between 6 and 10dB higher than the 55dB limit applicable to the site.

Therefore, the anticipated noise level from the operation of the site is significantly lower than the existing ambient noise levels.

The operation of the equipment would be fairly constant over a couple of hours when the site is working. The material to be processed is stock piled until there is a load to be processed. This would address any potential impulsivity.

There was no tonal character measured within the site and the noise from the specific operations would be further masked by the ambient noise levels at the receptor locations.

- Noise Modelling

The worst-case operation of the site has been modelled. The simple operation of the site is to receive the material, separate and shred as appropriate and then stockpile to the material to be baled.

We have referenced the shredder as being a hammermill, as identified in the FI.

The additional activities identified such as the compressor, trommel and sorting lines would not be expected to generate the same noise levels as the shredder and baler, but they would not be operating at the same time.

The noise generated during the sorting and separating would be dominated by the noise of the grab, forklifts and the HGV's handling the material. These were incorporated into the noise modelling from the site.

- Modelling Assumptions

SoundPLAN software package was used to calculate the noise level at the receptors. The propagation model calculates the predicted sound pressure levels by taking the source sound power level for each turbine in their respective octave bands and subtracting a number of attenuation factors according to the following formula:

Predicted Octave Band Noise level = LW +D – ($A_{geo}$ +$A_{atm}$ +$A_{gr}$ + $A_{br}$ +$A_{mis}$)

The predicted octaves from each of the noise source was summed to give the predicted noise level expressed as dBA.

**$A_{geo}$ – Geometric Spreading**

Geometric (spherical) spreading from a simple free-field point source results in attenuation over distance according to:

Lp = Lw – (20 log R + 11)

Where:

Lp = sound pressure level

Lw = sound power level

R = distance from the source to receiver

**$A_{gr}$ - Ground Effects**

Ground effect is the result of sound reflected by the ground interfering with the sound propagating directly from the turbine to receiver. The prediction of ground effects is complex and depends on the source height, receiver height, propagation height between the source and receiver and the intervening ground conditions.

Ground conditions are described according to a variable defined as G, which varies between 0 for hard ground and 1 for soft ground. Hard ground has been assumed on this site.

**$A_{bar}$- Barrier Attenuation**

The effect of a barrier (including a natural barrier) between a noise source and receptor is that noise will be reduced according to the path difference (difference between the direct distance between source to receptor and distance between source and receptor over the barrier). The reduction is relative to the frequency spectrum of the sound and may be predicted according to the method given in ISO 9613. A barrier can be very effective when it lies within a few metres of the receptor.

In this prediction model, the existing buildings were included in the model and they will act as a barrier.

**$A_{atm}$ - Atmospheric Absorption**

Sound emergency through the atmosphere is attenuated by conversion of sound energy to heat. This energy is dependent on the temperature and relative humidity of the air, but only weakly on ambient pressure through which the sound is travelling and is frequency dependent with increasing attenuation towards higher frequencies. The attenuation by atmospheric absorption $A_{atm}$ in decibels during propagation through distance in metres is given by:

$A_{atm} = d \times \alpha$,

$\alpha$ = atmospheric absorption coefficient in $dBm^{-1}$

d = distance from turbine

Values of $\alpha$ from ISO 9613 Part 1, corresponding to a temperature of $10^0C$ and a relative humidity of 70% has been used for these predictions and are given in **Table 10.2** below. These values are recommended in the IOA Good Practice Guide.

Table 1: Frequency dependent atmospheric attenuation coefficients (dB/m)

| Octave Band Centre Frequency (Hz) | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
|---|---|---|---|---|---|---|---|---|
| Atmospheric Absorption Coefficient (dB/m) | 0.0001 | 0.0004 | 0.001 | 0.0019 | 0.0037 | 0.0097 | 0.0328 | 0.117 |

**$A_{misc}$ – Miscellaneous Other Effects**

ISO 9613 includes effects of propagation through foliage, industrial plants and housing as additional attenuation effects. These have not been included here and any such effects are unlikely to significantly reduce noise levels below those predicted.

The predicted noise levels are $L_{Aeq\ 10min}$.

- Time period of results

The site is only proposed to operate during the daytime, so all results relate to the daytime operation of the site.

- Validation of noise levels

Noise measurements were carried out on the site to confirm the source noise levels from the operation of the equipment and they correspond to the source levels presented in the original report.

- Figure 10.3

The noise map at Figure 10.3 does include the operation of the grab, shredder, baler and HGV operations as set out in section 10.5.2.1 of the report. The legend to the figure does not include reference to the shredder or baler, but they are incorporated into the noise model.

I hope that this information is of assistance. Should anything further be required, please do not hesitate to contact me.

Yours faithfully,

IRWIN CARR CONSULTING

Shane Carr
Director

# *FIRE PREVENTION PLAN*

***for the***

***RECYCLING CENTRE***

***at***

## *ST. MARGARET'S RECYCLING & TRANSFER CENTRE LTD,*

**SANDYHILL,**

**ST. MARGARET'S,**

**CO. DUBLIN.**

***WFP-FG-0002-03.***

| **DATA PAGE.** | |
|---|---|
| Client: | *St. Margaret's Recycling & Transfer Centre Ltd.* |
| Address: | *Sandyhill, St. Margaret's, Co. Dublin*. |
| Date of Assessment: | *25th May 2023 & 20th December 2023 & June 2024.* |
| Assessor: | *Thomas P. English, Chartered Engineer.* |
| Responsible Person(s): | *Brian McDonnell, Managing Director – 086 2654884.* |
| Use of Premises: | *Waste Recycling & Transfer Centre.* |
| Number of Floors: | *Lofty single storey production building with several levels of open mesh access platforms. Single storey portacabins.* |
| Construction: | *The main building is constructed and roofed with PVC coated metal sheeting on a steel portal frame. Ground floor is of concrete and upper levels and stairs thereto are of open mesh steel.* |
| *Maximum No. of Employees & Visitors:* | *There are approx. 30 employees and usually less than 5 visitors / members of the public on the premises at any time. Similarly with vehicle drivers.* |
| | |

## ***CONTENTS.***

## ***STATEMENT BY THE CHIEF EXECUTIVE OFFICER (C.E.O.).***

Notwithstanding the specific requirements of legislation, St. Margaret's Recycling & Transfer Centre Ltd recognises the need to ensure proper and effective fire safety precautions are implemented about the premises, to ensure that the potential threat of fire is minimised in so far as is reasonably practicable.

St. Margaret's Recycling & Transfer Centre Ltd has a commitment to continually monitor fire safety precautions throughout the premises under its control in order to ensure compliance with the *Fire Services Acts 1981 & 2003* and all prevailing statutory fire safety legislation, including the requirements of *Technical Guidance Document B – Fire Safety (2006) (Reprint 2020).* This commitment undertakes to ensure the priority of life over that of property at all times.

The aim of the Fire Prevention Plan is to detail the structure of the organisation and the management of fire safety within the premises with all procedures for dealing with fire related incidents can be found enclosed within this document.

It is vital to the effectiveness of the Fire Prevention Plan that the document is available to all operators / staff, that they know and understand its contents and are aware of their own role in ensuring a fire safe environment.

A copy of the Fire Prevention Plan document will be held in the Document File of St. Margaret's Recycling & Transfer Centre Ltd (which is available and accessible to all employees on Bright HR), and further soft and hard copies will be kept in the Main Office on site for reference purposes for all staff members and contractors requiring same and in particular detailing their roles in the event of a fire occurrence within the operations of St. Margaret's Recycling & Transfer Centre Ltd.

All new operators / staff joining St. Margaret's Recycling & Transfer Centre Ltd will be made aware of the existence and location of the Fire Prevention Plan document(s) at the mandatory staff induction.

The scope of the Fire Prevention Plan document is to ensure that, if possible, outbreaks of fire do not occur on these premises and that, if they do, they are rapidly detected, effectively contained and quickly extinguished.

The Fire Prevention Plan is designed to give guidance on fire safety and fire prevention matters to the Person(s)-In-Control, the Board of Directors, the Line / Department Management and operators / staff and should be a ready source of reference / information at all staff levels.

***Signed:*** _____ ***Date:*** **/ / .**

**Brian McDonnell.**
**Chief Executive Officer.**

## ***1. INTRODUCTION.***

***1.1.*** This document presents the Fire Prevention Plan for the premises known as ***St. Margaret's Recycling & Transfer Centre Ltd, Sandyhill, St. Margaret's, Co. Dublin.***

***1.2.*** The Fire Prevention Plan has been prepared in accordance with and using the plan template included in the guidance provided by the U.K. Environment Agency Guidance – *Fire Prevention Plans: Environmental Permits* (2021).

***1.3.*** The Fire Prevention Plan addresses the entire premises including the buildings, the yards and all areas where combustible materials are handled and stored. It is designed to meet the following 3 key objectives:

***(i)*** Minimise the likelihood of a fire happening;

***(ii)*** Aim for a fire to be extinguished within 4 hours;

***(iii)*** Minimise the spread of fire within the site and neighbouring sites.

Minimising the likelihood of a fire happening is the highest priority to prevent environmental harm.

***1.4.*** The Fire Prevention Plan has been developed on the basis of the drawings {*Appendix I – Site Layout Plan*} and other design information and considerations detailed in *Appendix II – Roads for Permit Review.*

***1.5.*** It is vital to the effectiveness of the Fire Prevention Plan that the document is available to all operators / staff, that they are trained in and understand its contents and are aware of their own role in ensuring a fire safe environment.

***1.6.*** A copy of the Fire Prevention Plan document will be held in the Document File of St. Margaret's Recycling & Transfer Centre Ltd (which will be available and accessible to all employees on Bright HR), and further soft and hard copies will be kept in the Main Office on site for reference purposes for all staff members and contractors requiring same, and in particular detailing their roles in the event of a fire occurrence within the operations of St. Margaret's Recycling & Transfer Centre Ltd.

***1.7.*** All new operators / staff joining St. Margaret's Recycling & Transfer Centre Ltd will be made aware of the existence and location of the Fire Prevention Plan document(s) at the mandatory staff induction and will be given relevant guidance / training thereon.

***1.8.*** Management is responsible for ensuring that fire prevention procedures are established and enforced, that fire suppression systems and extinguishers are inspected regularly and maintained and that employees are trained to use fire extinguishers for incipient fires whilst all employees are trained in relation to evacuation routes and procedures.

***1.9.*** Management is responsible for monitoring the use of combustible materials, training employees in the safe storage, use and handling thereof and for ensuring that the storage areas for combustible materials are properly maintained as described in this document.

***1.10.*** All operators and staff are responsible for following the requirements of this Fire Prevention Plan for the safe storage, use and handling of flammable and combustible materials.

## *2. DESCRIPTION OF THE PREMISES – LOCATION & LAYOUT.*

### *2.0. Premises Location & Description.*

***2.1.*** The premises are located at Sandyhill, St. Margaret's, Co. Dublin adjoining St. Margaret's by-pass, R122. Dublin Airport is to the east with the southern run-way to the south east. Dublin Airport lands extend to within 240m of the south of the subject site. Lands bounding to the north, south and west are currently in agricultural use. Those to the north and east are within the ownership of the applicant. The premises has been in operation here since 1997.

***2.2.*** The site is located close to the village of St. Margaret's, which is located across the regional road (R122). The R108 is located to the south.

***2.3.*** The site is currently occupied as a Recycling & Transfer Centre, the main activity of which is the metal recycling and de-polluting of End-Of-Life Vehicles (E.L.V.) where they are brought to site, sorted, stored, processed, broken up and prepared for transfer to the next stage of the recycling process. Metals involved are both ferrous and non-ferrous.


***Google Earth View of St. Margaret's Recycling & Transfer Centre.***

The site until recently also provided a metal skip and battery collection service as well as a tipping point (for a wide range of customers to promote recycling and reduce the occurrence of illegal fly tipping). This service is no longer available.

***2.4.*** The site area is given as 2.93ha (5.9acres).

***2.5.*** The facility comprises of the following:

- ***(i)*** Concrete hardstanding entrance laneway and public parking area in the north-western corner;
- ***(ii)*** Concrete hardstanding area for storage of cars awaiting de-pollution (per Standard Operating Procedure Doc. Ref. P7.0.C / DEPOL) and storage of parts;
- ***(iii)*** Large covered waste processing shed including de-pollution area in the western portion of the site;
- ***(iv)*** Site offices, welfare facilities and a weighbridge located in close proximity to the entrance along the northern boundary of the site;
- ***(v)*** Concrete hardstanding area for storage of de-pollution cars;
- ***(vi)*** Secure perimeter fencing about the site.

***2.6.*** The layout and operational aspects of the facility is as follows:

- ***(i)*** The main processing buildings and structures are predominantly located to the north and north-west and clustered around the site entrance. This includes a large extended shed to the south of the entrance referred to as the Main Processing Shed and a number of portacabins, welfare facilities and site offices located to the northern site boundary. A septic tank and percolation area are located to the rear of these portacabin units. A weigh-bridge is positioned immediately south of the portacabins for th weighing oi incoming and outgoing vehicles.

- ***(ii)*** Compartmentalised storage areas / bunkers are located to the northern and eastern boundary of the premises. These contain materials such as stainless steel, aluminium, wheel alloys, cables and non- ferrous materials. The majority of the operations and storage / sorting of materials takes place in the open, centrally within the premises, and to the east and south of the Main Processing Shed.

- ***(iii)*** The area to the south contains an electrical plant room, and is shown as accommodating baled cars, de-polluted end-of-life vehicles awaiting processing and ferrous materials for processing and post-processing. The hammer mill and a movable grab (used for feeding materials for processing) are also located in the south end of the premises.

- ***(iv)*** To the east of the premises is a gated area which is separated from the main site by concrete panels and containers. This is intended to be restored to agricultural use in due course and has a separate and independent access via a driveway and entrance to the R122, 95m north of the junction of the R122 and the L7231 Newtown Cottages access road.

***2.7.*** Metal recycling and de-polluting end-of-life vehicles are the main activities at the facility. Metals are both ferrous & non-ferrous. There is no public access to the facility except for the delivery of end-of-live vehicles by their owners.

***2.8.*** The Waste Facility Permit on these premises is regulated to take in 21,900 tonnes per annum. The layout drawing in *Appendix 8* enclosed (*Drawing No. 1522-DR02 Rev. 04*) shows the infrastructure and designated storage areas of the premises.

*Table 1* below provides the applicable approximate volumetric capacity limits.

The site is separated into 3 x zones for purposes of surface water management as per layout drawing No. 1522-DR01 Rev. 03. The table below is an approximation of volumetric capacity per zones (Zone A – South, Zone B – North-West, Zone C – North-East).

| ***WASTE.*** | ***CAPACITY ($m^3$).*** | ***WASTE.*** | ***CAPACITY ($m^3$).*** |
|---|---|---|---|
| ***ZONE A {South}.*** | | ***ZONE B {North-West}.*** | |
| ***Ferrous for Processing.*** | ***1500.*** | ***Storage Bays (x 2).*** | ***135.*** |
| ***Processed Ferrous Metals.*** | ***1500.*** | ***Intake of Ferrous from Trade Customers.*** | ***480.*** |
| ***Baled E.L.V.'s.*** | ***350.*** | ***Main Processing Shed.*** | ***350.*** |
| ***De-Polluted E.L.V.'s.*** | ***2000.*** | ***Smaller Non-Ferrous Shed.*** | ***150.*** |
| ***ZONE C {North-East}.*** | | ***Combustible Waste.*** | ***Capacity ($m^3$).*** |
| ***Storage Bays (x 10).*** | ***675.*** | ***Non- De-polluted E.L.V.'s.*** | ***1000 (max. 132$m^3$ Stockpile).*** |
| ***Processed Steel.*** | ***3000.*** | ***Fragmentizer Waste.*** | ***1000 (max. 132$m^3$ Stockpile).*** |
| | | ***Paper, Tyres, Plastic.*** | ***132.*** |
| | | | |

## *2.9. Primary Combustible Materials.*

***(a)*** The types of materials on-site that could be considered combustible are primarily:

- ***(i)*** Paper / cardboard;
- ***(ii)*** Plastics;
- ***(iii)*** Rags;
- ***(iv)*** Scrap metals (contaminated or mixed with other waste such as oils or plastics) (refer to Standard Operating Procedure *Doc. Ref. P5.2.K / OILFUEL*);
- ***(v)*** De-polluted and un-depolluted E.L.V.'s;
- ***(vi)*** Rubber (natural or synthetic including whole tyres, baled tyres, tyre shred/ crumb / fibre);
- ***(vii)*** Fragmentizer waste (including waste from the processing of E.L.V.'s, plastics and metal wastes);
- ***(viii)*** Waste oil (petrol, diesel, hydraulic, transmission and engine oils);
- ***(ix)*** Batteries;
- ***(x)*** Hydraulic, Transmission and Engine Oils;
- ***(xi)*** Diesel.

***(b) Engine Oil****:*

The first activity as part of the de-pollution process is the draining and removal of any residual engine oils. Other activities are conducted in parallel, but the engine oil removal can typically take 20 minutes to reach the point where no further draining is visible.

Engine oil is usually gravity drained by removing the drain plug at the bottom of the sump and collecting the oil for a minimum of 20 minutes or until such time as no visible further draining of oil is witnessed. The oil is collected in a suitable container which has a minimum volume of 10 litres.

***(c) Transmission Oils:***

Transmission oils, i.e. manual or automatic gearbox and rear differential oils, are allowed to gravity drain for a minimum of 10 minutes or until such time as no visible further draining of the oil is witnessed. Transmission oil is collected in a suitable container which has a minimum volume of 5 litres. Gearboxes without drain plugs may be gravity drained by suitable drilling or piercing.

Power steering oils are extracted from both the reservoir and the connecting hose. For the reservoir, similar equipment as the brake fluid (see below) should be used. For the hose, fluid can be removed by either cutting at the lowest point and allowing gravity drainage or piercing and sucking out the fluid.

***(d) Hydraulic Oils:***

Hydraulic oils, i.e. brake and clutch fluid where applicable, is removed using equipment which uses suction and / or pressure on both the reservoir, brake pipes and cylinders. Drainage time is usually approx. 10 minutes until no visible fluid left in the reservoir and there is no visible further drainage following removal of the suction equipment.

***(e) Coolant:***

Coolant is gravity drained by removing the bottom hose from the radiator for a minimum of 10 minutes or until such time as no visible further draining of oil is witnessed. Coolant is collected in a suitable container which has a minimum volume of 10 litres.

***(f) Screen Washing Fluid:***

Screen washing fluid is sucked from the bottom of the reservoir. In E.L.V.'s with bent filler pipes, it is usually preferable to drain from below. No visible amount of fluid should be left in the reservoir(s).

***(g) Fuel Tank (except L.P.G.):***

Batteries are always removed before the fuel tank is de-polluted to prevent the possibility of electrical discharge igniting the fuel. Batteries have usually been removed by others prior to the E.L.V. coming onto the premises.

To achieve a high level of de-pollution, a hole should be pierced or drilled into the lowest point of the fuel tank and suction used to remove any residual fuel. No vapours should be released using this method.

Piercing or drilling should be done with a suitable non-sparking material and pneumatically powered with an earthing connection made between the vehicle and the extraction equipment. Commercial equipment should meet these requirements.

If a saddle-shaped fuel tank is fitted to the E.L.V., it may be appropriate to pierce or drill two low points so all the fuel can be extracted.

***(h) Suspension System:***

Suspension systems usually consist of shock absorbers, gas shock absorbers or sealed suspension systems.

Shock absorbers should have the fluid / oil removed from both the inner and outer cylinders without removing the shock absorber from the E.L.V.

Gas shock absorbers should have the gas removed. The equipment required therefor should be confirmed for suitability with the Manufacturer of the equipment, and any other additional safety requirements specified should be followed.

Sealed suspension systems should be drained using appropriate equipment as per Manufacturer's Instructions.

In each situation, no further visible draining of fluids should occur after the procedures above.

***(i) Catalyst:***

Catalysts can be removed safely with the use of the correct cutting equipment by cutting the exhaust pipe, both in front of and behind the catalyst unit. This may also be done more for financial benefits rather than de-pollution activities.

***(j) Air Conditioning Refrigerant:***

Air conditioning refrigerants are removed using specialist equipment and separate collection cylinders for both of the refrigerant gases in use i.e. R12 (a CFC) and R134a (a HFC). The equipment must be securely attached to the air conditioning valve to remove all the fluid whilst transferring it to the appropriate cylinder.

Fluorinated gases (F-gases) require operatives to be formally trained and in possession of a duly accredited certificate of competence.

***(k) L.P.G. Tank:***

As with electric or hybrid vehicles, no L.P.G. vehicles are accepted at the facility for de-polluting.

***(l) Switches Containing Mercury:***

Switches which are identified as containing mercury should be removed during the de-pollution procedure.

### *(m) Other Hazardous Items:*

Older E.L.V.'s may contain asbestos containing materials (A.C.M.) in brake pad linings which must be removed if present. Procedures used to remove asbestos containing materials (A.C.M.) should follow the applicable health and safety guidelines for asbestos containing materials (A.C.M.).

In the event of fire, asbestos is indestructible and will be released into the surrounding air creating additional environmental and health & safety problems.

### *(n) Removal or Deployment of Air Bags:*

Potentially explosive materials such as those contained in air bags and seat belt pre-tensioners should either be removed or set off / deployed in situ (which is the the recommended option).

Only appropriately trained personnel, using appropriate equipment, should carry out airbag removal or deployment.

Where deployment is the chosen option, it should be conducted in a secure non-hazardous area. No person should be within 10m during deployment. Once deployed the explosive content is neutralised.

### *(o) Post De-pollution:*

After de-pollution activities, all gravity drained holes should be plugged, either with their own drain plug or a suitable plastic bung, to prevent any residual leakage. Once an E.L.V. is fully de-polluted it should be stored on a hardstanding or impermeable surface.

Maximum pile sizes should be in accordance with the following table:

| *Material.* | *Maximum Height (m).* | *Maximum Length / Width (m)* | *Maximum Volume ($m^3$).* | *Maximum Area ($m^2$).* | *Maximum Separation (m).* |
|---|---|---|---|---|---|
| *Rubber (incl. Tyres).* | *5.* | *20.* | *450.* | *235.* | *6.* |
| *Frag Waste from De-polluted E.L.V.* | *5.* | *20.* | *450.* | *235.* | *6.* |

***(p) Rubber:***

The rubber (natural or synthetic) on the premises including whole tyre, baled tyre, tyre shred, crumb and fibre is currently being phased out in the near future as the intention is that these materials will be removed for recycling by others prior to the end-of-life vehicles arriving here.

***(q) Frag Waste:***

The frag waste here includes waste from processing E.L.V.'s and plastics and metal wastes from materials recovery facilities.

*NOTE: There are no Persistent Organic Pollutants (P.O.P's) or W.E.E.E. on these premises.*

*NOTE: Gas cylinders and aerosols are not accepted on site.*
*{In case of entry into site the items will be quarantined and removed from site by the producer without delay}.*

***2.10.*** The plant and equipment in use on the premises and their function are listed in the following table:

| ***Description.*** | ***No. Off:*** | ***Function.*** |
|---|---|---|
| ***Weighbridge.*** | ***1.*** | ***Evaluate / Weigh Loads in & out.*** |
| ***Telehandler.*** | ***1.*** | ***Loading / Unloading / Moving / Sorting.*** |
| ***360° Excavator.*** | ***5.*** | ***Loading / Unloading / Moving / Sorting.*** |
| ***Baler.*** | ***1.*** | ***Baling of Metal for Export.*** |
| ***Pre-Shredder.*** | ***1.*** | ***Segregate Waste prior to Shredder.*** |
| ***Shredder.*** | ***1.*** | ***Reduce Size of Mixed Waste.*** |
| ***Forklift Trucks.*** | ***5.*** | ***Loading / Unloading / Moving / Sorting.*** |
| ***H.G.V.'s.*** | ***7.*** | ***Movement of Waste to / from the Site.*** |

*NOTE: This Fire Prevention Plan is of the view there are in effect no non-combustible materials on site as all materials are potentially combustible. However, each one will have varying auto-ignition temperatures so their reaction to fire may be delayed but also may, given sufficient time, ignite.*

### *2.11. Security.*

There is a manned reception area at the front during opening hours where all persons accessing the premises must call into. There is a management presence on the premises at all times during opening hours.

There is a manned security (P.S.A. licensed) presence on the premises outside of opening hours.

#### *(i) Method used to record & manage storage times.*

The premises logs all incoming wastes to record the dates and relevant information. These records are kept within the Main Office along with remaining storage capacity within the bays, details of pick-ups, etc. to ensure that the site does not stockpile combustible materials for prolonged periods of time.

#### *(ii) Stock Rotation Policy.*

Stock rotation involves the ongoing use of material handlers to either remove the waste to disposal for further treatment or to continuously rotate the stock to ensure no waste remains in storage for more than a week.

#### *(iii) Monitor & Control Temperature.*

Visual inspections of the stockpiles are carried out supplemented by means of the use of multiple CCTV units (31 units in total at present) located about the premises.

There is an ongoing exercise to upgrade 16 of the existing appropriately located CCTV units to Hikvision Bi-Thermal CCTV cameras in coming months.

#### *(iv) Manage Waste Stockpiles.*

The equipment and resources utilised in the operation at the site expedite the treatment and export of the wastes, whether segregated or prepared for onward treatment, for disposal within days of delivery, usually within one week.

#### *(v) Storing Waste Materials in their Target Form.*

End-Of-Life Vehicles in the designated storage bays of the de-pollution area are stored and assigned, as per material specifications.

***(vi) Maximum Stockpile Sizes.***

The site Waste Facility Permit is regulated to take in 21,900 tons per annum. See table showing stockpile limitations and separations in *Section 2.8* above and *Appendix IV - Current Stockpile Storage In Tonnage {As At 4/5/2024}* and storage bay dimensions in *Appendix II.*

## 2.13. Site Plans & Maps.

This Fire Prevention Plan includes a Site Layout Plan {shown in *Appendix I*), Site Layou*t {as at 13/5/2024} {shown in Appendix II} and Roads Layout for Permit Review {shown in Appendix III}.*

This is a scale to size copy of the overall Site Layout Plan {which is drawn to A1 scale size}. The A1 scale layout plan should be utilised for all references to drawings. A copy thereof will be maintained on site. The A1 sized drawings show the following details:

***(i)*** The layout of the buildings on the premises;
***(ii)*** Any areas where hazardous, combustible or flammable materials are stored on the premises (i.e. process areas, chemical storage, stacks of combustible wastes, oil / fuel tanks, etc.);
***(iii)*** The location of all permanent ignition sources on the premises and their relative position to any storage of combustible and flammable waste;
*{Best practice suggests a minimum gap of at least 6m}*;
***(iv)*** Any areas where combustible waste or combustible non-waste materials are being treated or stored;
***(v)*** All relevant separation distances between buildings, storage, stacks, etc.;
***(vi)*** Any areas where combustible liquid wastes are being stored;
***(vii)*** Any areas where de-pollution of E.L.V.'s take place;
***(viii)*** Any areas where crushing, shredding, baling of metals or E.L.V.'s take place;
***(ix)*** The main access routes for fire engines and any alternative access routes;
***(x)*** The location of any access points around the perimeter of the premises to assist fire-fighting;
***(xi)*** The location of hydrants, water supply sources and bulk water storage / supplies;
***(xii)*** Areas of natural and unmade ground;
***(xiii)*** The location of drainage runs, pollution control features (i.e. drain closure valves, etc.) and fire water containment systems (i.e. bunded or kerbed areas, etc.);
*{These details are also on a separate drainage plan for the premises, a copy of which is maintained on site}*;
***(xiv)*** Location of storage areas with stack / pile dimensions and fire wall details (where applicable);
*{This includes details of wastes stored in a building, bunker or containers, with indicative pile layouts and geographically representative};*
***(xv)*** The specification, construction and dimension of all Fire Walls and Bays that offer a thermal barrier, plus the actual fire rating thereof;

***(xvi)*** The location of the designated quarantine area and the volume of waste that it can hold;
***(xvii)*** The location of fixed plant / machinery and where mobile plant is stored / parked when not in immediate use;
***(xviii)*** The location of emergency spill kits;
***(xix)*** The location of quarantine areas;
***(xx)*** The location of fire-fighting points (See *Appendix XII*);
***(xxi)*** The location of Sensitive Receptors (See *Appendix XI*);
***(xxii)*** The location of anything site specific that may need to be added from time to time from experience.

## ***3.0. SENSITIVE RECEPTORS.***

Sensitive receptors may include:

***(i)*** Schools, hospitals, nursing and care homes, residential areas, workplaces;

***(ii)*** Protected habitats, watercourses, groundwater, boreholes, wells and springs supplying water for human consumption;

***(iii)*** Roads, railways, bus stations, pylons (on or immediately adjacent to the site only), utilities, airports, etc.

See attached Sensitive Receptor Plan (*Appendix XIV* below).

*NOTE: The facility is located between the junction of the R122 and R108 regional roads, in close proximity to Dublin Airport and its runway. St, Margaret's National School is about 200 metres northwest from the facility boundary and St. Margaret's church is about 250 metres northwest from the facility boundary.*

*There are a number of one-off houses to the west of the R122. The site is approximately 500 metres from the Huntstown River and the site drainage outfall has connectivity therewith overseen by the Fingal County Council. There is a groundwater well serving the site, PW1.*

## ***4.0. FIRE PREVENTION OBJECTIVES.***

### *4.1. Objectives:*

The Fire Prevention Plan can be defined as a "coherent and purposeful arrangement of the fire protection and fire prevention measures which are, and will be, developed in order to attain specified fire safety objectives" which are as follows:

- ***(i)*** The prevention, or at least the minimisation, of a fire occurring in the first instance;
- ***(ii)*** The minimisation of the potential for the spread of fire within the premises and to neighbouring premises;
- ***(iii)*** The implementation, development and maintenance of appropriate measures to ensure that any fire on the premises is controlled within 4 hours;
- ***(iv)*** The implementation and maintenance of measures to ensure that adequate sources of water for fire –fighting purposes are available when required;
- ***(v)*** The provision of appropriate training to all staff which is sufficient to enable them fulfil their role as an Emergency Incident Manager in a fire or similar emergency;
- ***(vi)*** The provision of such information, methodologies and techniques necessary to carry out an appropriate risk assessment of any situation in order to manage it successfully by means of team building, the assignment of tasks and the enabling of good decision making.


### *4.2. Access to the Fire Prevention Plan.*

The designated Fire Safety Manager will ensure all of the following parties have access to the Fire Prevention Plan at all times and have read and understood the Plan:

- ***(i)*** All members of staff – both permanent and part-time;
- ***(ii)*** All third party contractors coming onto the premises for specific purposes;
- ***(iii)*** Emergency / Fire Services Personnel / Officers.

### *4.3. Duties & Responsibilities of the Fire Safety Manager:*

The Fire Safety Manager of St. Margaret's Recycling & Transfer Centre Ltd is responsible for the implementation and development of the Fire Prevention Plan. This will involve reviewing the Fire Prevention Plan on an annual basis and amend when required due to changes to legislation, best Practices, E.P.A. / Fingal Co. Co. requirements, etc. or when changes occur to the operations or activities of St. Margaret's Recycling & Transfer Centre Ltd.

### *4.4. Management of the Fire Prevention Plan.*

The Fire Prevention Plan will be uploaded to the Document File of St. Margaret's Recycling & Transfer Centre Ltd (which is available and accessible to all employees on Bright HR), and a soft and hard copy will be kept in the Main Office on site for reference purposes for all staff members and contractors requiring same and in particular detailing their roles in the event of a fire occurrence.

Effective implementation of the Fire Prevention Plan will require support from all employees. This Fire Prevention Plan will be made available to all new employees at induction

### *4.5. Testing the Fire Prevention Plan & Staff Training.*

Testing of the Fire Prevention Plan will be ongoing and elements thereof will be checked e.g. fire- fighting equipment to be checked daily, water fire-fighting equipment (i.e. hoses, hydrants, etc.) where possible, operated at least weekly, etc., all overseen by the Fire Safety Manager and undertaken by the Fire Warden for the particular area.

Recording of the weekly inspections will be on the Record Sheet in Appendix VIII.

All members of staff will attend annual fire-fighting training which will include training on Risk Assessments.

### *4.6. Achievement of the Objectives of the Fire Prevention Plan:*

The objectives detailed above in this Fire Prevention Plan will be achieved by means of a combination of the following measures:

***(i)*** The design and layout of buildings;
***(ii)*** The management of any areas where hazardous and flammable materials are stored on site;
{*Note: This includes the management, location and segregation of quantities of gas cylinders, process areas, chemicals / substances / materials, piles of combustible wastes, oil and fuel tanks, etc.);*
***(iii)*** The identification of all permanent ignition sources on the site and ensuring that they are a minimum of 6m away from where any combustible and / or flammable waste is being treated or stored;
***(v)*** The identification and management of separation distances between storage areas;
***(vi)*** The identification and management of areas where combustible liquid wastes is stored;
***(vii)*** The identification and management of areas where de-pollution of E.L.V.'s takes place;
***(viii)*** The identification and management of areas where crushing, shredding, baling of metals or E.L.V.'s take place;
***(ix)*** The provision and maintenance of unobstructed access routes for fire engines;
***(x)*** The provision and maintenance of access points around the site perimeter to assist fire-fighting operations;
***(xi)*** The provision and maintenance of hydrants and adequate supplies of water supplies for fire-fighting purposes;

***(xii)*** The identification and management of areas of natural and / or unmade ground;
***(xiii)*** The provision and maintenance of drainage runs, pollution control features (i.e. drain closure valves, etc.), and fire water containment systems (i.e. bunded or kerbed areas);
***(xiv)*** The provision and maintenance of storage areas with pile dimensions and fire walls (where applicable); *{Note: This includes wastes stored in a building, bunker or containers*}.
***(xv)*** The appropriate location of fixed plant and the management of areas where mobile plant is parked when not in immediate use;
***(xvi)*** The provision and appropriate location of spill kits about the site and the training of staff in the correct use thereof;
***(xvii)*** The provision and maintenance of appropriate quarantine areas;
***(xviii)*** The development of any additional site-specific measures that may need to added from time to time; and
***(xix)*** The use of Permit-To-Work formats and procedures when required for all Hot Works and other potentially hazardous practices.

The Permits-To-Work will either:

***(i)*** have a specific condition requiring you to take appropriate measures to prevent fires on site and minimise the risk of pollution from them, including but not limited to those measures in an approved Fire Prevention Plan, or
***(ii)*** require you to maintain a Fire Prevention Plan as part of the written management system which identifies and minimises the risks of pollution from the operations.

## *4.7. Use of the Fire Prevention Plan.*

The Fire Prevention Plan forms part of the Management System for St. Margaret's Recycling & Transfer Centre Ltd. It is a stand-alone document within the overall Management System and both the Management and the operators / staff can easily refer to it.

In the event of an incident, the Emergency / Fire Services should be provided with a copy of the Fire Prevention Plan, if it is safe and practical to do so.

All operators / staff and external contractors working on the premises must be aware of and understand the contents of the Fire Prevention Plan so that they know what they must do in particular circumstances to initially prevent a fire happening and what to do if one actually does break out. These details should be provided to the employees of the relevant contractors at Induction on arrival on the premises and prior to commencing work. Formal records of this training must be maintained and the training should be refreshed every quarter for all contractors on site for long periods.

The operators / staff for St. Margaret's Recycling & Transfer Centre Ltd must receive appropriate and regular training in relation to the contents and use of the Fire Prevention Plan, as detailed in *Appendix IV*

Regular exercises (at least one per year) should be held to test how well the Fire Prevention Plan works. These exercises will include (but not be limited to what operators / staff need to do to prevent a fire occurring) what they are expected to do during a fire if one breaks out and any other site specific information as may arise from the exercises or from best practice knowledge.

The exercises will be designed to fully test the Fire Prevention Plan, in addition to regular straightforward fire evacuation drills. Where considered necessary, external support will be introduced to review and oversee the Fire Prevention Plan exercises.

### *4.8. Review of the Fire Prevention Plan.*

The Fire Prevention Plan will be formally reviewed at least once annually, usually following the completion of the test exercises therefor or where necessary if there is any reason to suspect it no longer meets the objectives of the referred guidance or there is a fire (actual or near miss), there is a change in some or all of the activities on the premises or there is a sizeable new residential development or school constructed nearby, etc. All revisions made should be formally recorded and operators / staff notified formally thereof.

Following revision of the Fire Prevention Plan, the revised version thereof should be advised to the operators / staff and other relevant shareholders and updated copies thereof should be added to the relevant copy locations as specified in *Section 4.6*. *above*

## ***5.0. FIRE PREVENTION PLAN – IMPLEMENTATION.***

### *5.1. Activities at the Premises.*

The site is currently occupied as a Recycling & Transfer Centre the main activity of which is the metal recycling and de-polluting of End-Of-Life Vehicles (E.L.V.) where they are brought to site, sorted, stored, processed, broken up and prepared for transfer to the next stage of the recycling process. Metals involved are both ferrous and non-ferrous. A number of machines were in use, including two grab / handlers and a hammer-mill.

The general fire prevention techniques available for use here, as applicable, are as follows:

***(i)*** Keep storage, working areas and offices free of trash and clutter, i.e. maintain good housekeeping standards throughout the premises;

***(ii)*** Ensure that all passageways / corridors utilised as emergency evacuation routes are kept clear and unobstructed at all times, i.e. no materials are to be placed or stored in or across any such circulation routes;

***(iii)*** All emergency evacuation exit / doors are maintained secured but unlocked when the premises or a portion thereof the building is occupied;

***(iv)*** The propping open of fire rated door sets or of emergency evacuations doors is strictly prohibited never be propped open;

***(v)*** Scheduled and random inspections of fire extinguishers (i.e. the location, accessibility and condition thereof) and the emergency evacuation routes is carried out by the E.H.S. Manager, with formal records thereof maintained;

***(vi)*** Operators and staff will be trained on fire safety matters {i.e. Fire Safety Awareness, Safe Use of Fire Extinguishers and Hose-Reels, Fire Warden / Marshall training, etc.} to a regular schedule, with training records thereon retained in the Main Office for review by authorised persons on request;

***(vii)*** Do not store combustible materials of any kind in electrical, mechanical / plant or communication equipment rooms;

***(viii)*** Regular maintenance is carried out as part of an ongoing Preventative Maintenance Programme (PPM) for all mechanical, mobile and production equipment and formal records thereof are maintained on file;

***(ix)*** Follow proper storage and handling procedures as directed by the product manufacturers;

***(x)*** Do not re-fuel gasoline / diesel-powered equipment while it is hot;

***(xi)*** Ensure that open flames are not permitted in any setting, except for supervised training drills or maintenance by third party contractors under appropriate Hot Work Permit-To-Work systems;

***(xii)*** Identify all potential heat sources and ensure that the areas about are maintained free and clear of materials with ample space around any heat source; and

***(xiii)*** Instruct external third party competent Fire Safety Consultants to carry out regular reviews of fire safety conditions and procedures on site.

## *5.2. Manage Common Causes of Fire.*

Common sources of ignition include smoking materials, electrical faults, cooking, arson, hot processes, naked flames as a result of Hot Works (cutting, welding, brazing, etc.), spontaneous combustion, etc.

### *(i) Arson:*

The key pillars of arson prevention are the presence of robust perimeter protection (2.5m high metal security fencing), CCTV (at present approximately 31 units distributed about the premises) and security measures, including the presence of P.S.A. Licenced security personnel on site outside of opening hours.

The main site entrance from the public roadway is locked at night and the site is patrolled by security guard dogs under the control of the security operative. Day time access is controlled to the main site via barriers which are lifted when access has been granted, with further access to the offices controlled by swipe / mag-lock doors.

Access for small loads is at Customer Reception which is supervised during opening hours. All buildings are secured at night prior to the dogs being released. The site is also monitored by CCTV units at all time, with notifications of activity to the central monitoring station and to the directors' / key persons' mobile phones.

### *5.3. Plant & Equipment.*

***(i)*** The Facilities Manager will be responsible for maintaining equipment to prevent or control potential sources of ignition or fires therefrom as well as the proper mandated testing and maintenance thereof. All plant and equipment is serviced and maintained as part of the ongoing Planned Preventative Maintenance (PPM) programme and formal records thereof are maintained on file.

***(ii)*** Details of the available fire suppression systems and manual fire-fighting equipment are detailed in *Appendix X* {Fire Inspection / Drill / Evacuation Document} and *Appendix XIII* {Fire-Fighting Points}.

***(iii)*** The maintenance and inspection of all fire extinguisher and suppression systems under annual contract, and of the associated records, is the responsibility of the Facilities Manager.

***(iv)*** A copy of the annual and weekly confirmation certification for each item of plant and equipment, and all in-house inspections by the E.H.S. Manager, muse be kept with the Fire Register files for review by authorised persons on request.

***(v)*** The plant and equipment in use on the premises and their function are listed in the table in *Section 2.10* earlier in this document

***(vi)*** Only trained competent (and ticketed, if necessary) personnel are permitted to use / operate / drive any plant or equipment at any time.

***(vii)*** Appropriate fire extinguishers are installed in each item of mobile plant / vehicles;

***(viii)*** When not in immediate operation, all mobile plant must be parked well away from any combustible waste.

***(ix)*** The following table details the plant & equipment used on site during the site waste operations.
***{****Note that only trained / competent, and where necessary ticketed, personnel are permitted to use / operate or drive the plant or equipment at any time}.*

| ***Description of Plant / Equipment.*** | ***Number of:*** | ***Function of Plant / Equipment.*** |
|---|---|---|
| ***Weighbridge.*** | ***1.*** | ***Evaluate & weigh loads in and out.*** |
| ***Telehandler.*** | ***1.*** | ***Loading / Unloading / Moving / Sorting.*** |

| | | |
|---|---|---|
| ***360° Excavators.*** | ***5.*** | ***Loading / Unloading / Moving / Sorting.*** |
| ***Baler.*** | ***1.*** | ***Baling of Metal for Export.*** |
| ***Pre-Shredder.*** | ***1.*** | ***Segregate Waste prior to Shredder.*** |
| ***Shredder.*** | ***1.*** | ***Reduce Size of Mixed Waste.*** |
| ***Forklift Trucks.*** | ***5.*** | ***Loading / Unloading / Moving / Sorting.*** |
| ***H.G.V.'s.*** | ***7.*** | ***Movement of Waste to / from the Premises.*** |
| | | |

### *5.4. Electrical Faults {including damaged or exposed Electrical Cables}.*

***(i)*** Any new or replaced elements of the existing electrical installation will be designed, installed and certified by a Registered Electrical Contractor (R.E.C.) in accordance with the requirements of *I.S.10101: 2020 – National Rules for Electrical Installations,* with at least Ingress Protection (IP65) Level 6 Solids Objects (Dust), Level 5 Protection against Water.

***(ii)*** Appropriate confirmation certification will be available for all new installation work and a copy thereof will be retained in thee Fire Register files.

***(iii)*** The original / existing electrical installations about the premises were installed to the requirements of the previous version of the National Rules for Electrical Installations. Periodic inspections and testing of the various electrical installations must be carried out by a Registered Electrical Contractor (R.E.C.), with follow-up Periodic Inspection Reports (P.I.R.) issued at least every three years. Annual reports on any inspections and testing should also be provided as required, as well as the required certification detailed in *I.S.10101: 2020 – National Rules for Electrical Installations*.

The following basic measures are also essential to minimise the risk of fire as a result of any faulty electrical equipment:

***(i)*** Do not overload electrical outlets at any time;
***(ii)*** Maintain free and clear access to all electrical panels and do not store materials (whether combustible or non-combustible) within at least 1m thereof;
***(iii)*** All cupboards / enclosures about electrical panels along emergency evacuation routes should have a 60minute fire resistance rating;
***(iv)*** All electrical cabinets should be vacuumed to a regular schedule to prevent the accumulation of dust, etc. therein;
***(v)*** All portable electrical equipment should be checked and tested as part of a Portable Appliance Testing (P.A.T.) programmes at least on an annual basis for electrical safety of users, including a visual examination of any frayed or damaged cables, etc. {Formal records thereof will be retained in the Fire Register files};
***(vi)*** The use of extension cords / leads should be prohibited other than for temporary use following a formal Risk Assessment of the specific requirements of the situation; connections, etc.;
***(vii)*** Small electrical items / coffee makers shall not be placed on combustible surfaces (plastic or cloth mats, wooden counte-rtops, etc.) and all should be regularly P.A.T. tested to a specific schedule.

### *5.5. Discarded Smoking Materials.*

Smoking is strictly prohibited throughout the premises at all times and clear signage to this effect has been erected about the premises.

### *5.6. Cooking.*

There is no cooking on the premises at any time.

### *5.7. Hot Works.*

***(i)*** Standard Operating Procedures are in place in regard to Hot Works anywhere on the premises. The relevant contractor carrying out any such works will liaise in detail with the E.H.S. Manager prior to the commencement of works and produce a suitable agreed R.A.M.S. / Method Statement on the works including full details of the fire safety measures governing all such hot works. The contents thereof must be approved by the E.H.S. Manager prior to the commencement of any work on the premises.

***(ii)*** A formal Hot Works Permit-To-Work must be completed and issued by the relevant contractor, and approved by the E.H.S. Manager of St. Margaret's Recycling & Transfer Centre Ltd, prior to every such work and the parameters thereof must be fully and closely followed at all times. The Hot Works Permit-To-Work will specific the applicable safety measures to be applied at

all times, including requirements for the wearing of suitable PPE, the carrying out of a fire watch during and after the works and at the end of the working day, the presence and availability of suitable fire extinguishers, etc.

***(iii)*** Clear signage has been erected about the premises warning of the hazards of any type of Hot Works.

***(iv)*** No flammable substances will be allowed in or near any areas where any cutting or welding operations are likely to occur.

### *5.8. Industrial Heaters.*

There are no industrial heaters on the premises at present and unlikely to be.

### *5.9. Hot Exhausts.*

***(i)*** Random visual inspections / fire watches of all plant and equipment, including mobile plant / vehicles, are to be carried out during the day and during the final inspection at the end of each day prior to the closure of the premises by the relevant Line Manager and / or the E.H.S. Manager.

***(ii)*** All plant and equipment is regularly serviced and maintained and the condition (physical and operational) of the exhaust thereon are checked and reviewed.

### *5.10. Ignition Sources.*

***(i)*** Potential ignition sources include naked flames from Hot Works, electrical faults, hot surfaces / processes, arson, spontaneous combustion, etc. The issues associated with each of these are dealt with in the appropriate section below.

***(ii)*** In the event that there are any ignition sources in place (whether from naked flames, space heaters, furnaces, incinerators, other sources of ignition), they must always be located at least 6m away from all combustible and flammable waste / materials. This will be checked on an ongoing basis as part of the daily and end-of-day fire watch inspections.

### *5.11. Batteries.*

***(i)*** Batteries for disposal / recycling are stored in a designated storage area under cover which is fitted with a suitable automatic fire suppression system. Protocols in respect to storage include consideration of Manufacturer's Recommendations and Instructions. In addition, any damaged batteries are stored separately away from the undamaged ones.

***(ii)*** Batteries have been removed for all End-Of-Live Vehicles (E.L.V.) prior to arriving at these premises.

***(iii)*** Batteries for disposal / recycling are removed off premises to a regular schedule.

***(iv)*** Separate arrangements will be put in place to store lithium batteries and Li-ion batteries from electric vehicles in a separate location from other batteries so that they cannot come into contact with any liquids or be damaged.

Should the requirement arise for any reason and, if damaged, lithium and Li-ion batteries will be stored in a waterproof container filled with sand or similar inert material and well away from any buildings or other combustible materials.

### *5.12. Leaks & Spillages.*

***(i)*** The end-of-live vehicles are checked on arrival to ascertain if there are any fuels or combustible liquids / oils therein. If identified the particular materials are drained to suitable containers for onward recycling, as detailed above in Section 2.9..

***(ii)*** In the event of any leaks or spillages, the area is designed to contain such spillage which is immediately cleaned up to prevent transfer / trailing thereof by mobile vehicles or persons about the premises.

***(iii)*** Mobile vehicles on the premises are serviced to a regular schedule. In the event of any leakage of combustible liquids noted the vehicle is removed from operation and parked in a designated quarantine area until the leak is repaired without undue delay.

***(iv)*** All oily rags used for wipe-down and clean up purposes are placed in a covered metal container and disposed of properly and regularly, which also reduces any risk of spontaneous combustion arising therefrom.

***(v)*** Smaller quantities of flammable and combustible liquids are stored in suitable approved storage containers and cabinets and larger quantities in suitable bunded container tanks.

### *5.13. Build-up of loose Combustible Waste, Dust & Fluff.*

***(i)*** Accumulations of loose combustible waste, dust & fluff will be swept up and removed on an ongoing basis. Daily visual inspections of the relevant areas will be carried out and, if not already noted by the operator, appropriate instructions for clean-up will be given thereto.

***(ii)*** Good housekeeping standards are essential and critical to the efficient operation of these premises.

### *5.14. Reactions between Wastes.*

***(i)*** There are no recorded chemical or biological reactions in materials processed on these premises and no expectation of same.

***(ii)*** In the event that there may be a reaction between any waste materials on these premises a quarantine area therefor will be set up.

### *5.15. Waste Acceptance & Deposited Hot Loads.*

***(i)*** No hot loads or loads with elevated temperatures are accepted at these premises.

***(ii)*** When loads arrive, they are checked to ensure that the contents thereof are within the acceptance parameters of these premises, including inspecting for signs of heating (e.g. steam or smoke emissions, batteries (and in particular lithium-ion batteries), oils or other contaminants or rags soaked in oils or chemicals. If any such situation is noted the load is not accepted and is turned away.

### *5.16. Hot & Dry Weather.*

***(i)*** The storage piles are constantly sprayed with a water mist as a dust reduction measure which has the additional effect of preventing a rise in temperature. Storage times are also minimised to enable fresh materials to come through the premises.

***(ii)*** Ongoing efforts are being made to ensure that there are little or no reflective surfaces about the premises.

***(iii)*** In the event of the materials resting for extra-long periods on the premises, a rotation policy will be applied, the frequency of which will be determined by temperature monitoring, the size and height of the stockpile, the materials therein and whether there is any risk of spontaneous combustion conditions developing.

### *5.17. Prevent Spontaneous Combustion (Self-Combustion).*

***(i)*** Some materials can spontaneously combust, or self-combust, under certain conditions. Spontaneous Combustion **(s**elf-combustion) occurs when a material which can self-heat generates heat at a faster rate than it can be lost to the environment. The temperature continues to rise until the auto-ignition temperature is reached and the material then self-combusts or spontaneously ignites.

***(ii)*** Where there is any risk of spontaneous combustion conditions developing, a rotation policy for the stockpiles and continuous temperature monitoring will be applied, the frequency of which will be determined by the temperature monitoring, the size and height of the stockpile and the materials therein.

Where there is a potential risk of spontaneous combustion (self-combustion), the regular rotation policy will ensure that the waste remains cold and that any localised warming is dissipated quickly.

***(iii)*** To help prevent spontaneous or self-combustion, a maximum storage time for all materials on the premises is detailed to control and monitor this potential hazard.

***(iv)*** The storage of all waste on the premises is recorded from arrival to departure and where necessary temperature monitoring is utilised in addition to good and regular stock rotation, which depends on the materials and the temperature conditions.

***(v)*** All stock on the premises longer than a week is rotated, whether it requires to be or not. It is quite seldom that any specific materials are retained on the premises for more than 3 – 4 weeks at most (whether as a result of market conditions, strikes or seasonal variations) whether combustible or non-combustible wastes.

***(vi)*** The usual policy here is that materials come and go on the principle of 'first in, first out'.

***(vii)*** During planned and un-planned shutdowns of the premises, it is policy that all materials on the premises will be rotated on a weekly basis with temperature monitoring using a calibrated probe (with formal records of the result retained).

***(viii)*** The heat generated in the materials from shredding, chipping or producing crumb is allowed dissipate naturally before the materials are placed in stacks / piles for storage.

***(ix)*** Alarm triggers in relation to temperature and possible spontaneous (self-) combustion will include temperature, rates of temperature change over time, visual signs of heating, etc. The operators / staff will be advised and trained in what to look for and advised to raise any queries of concern in this regard without undue delays.

## *5.18. Waste Bale Storage.*

***(i)*** Baling here basically consists of baling of the E.L.V. metal for export or tyres with the stacks thereof being for short-term storage and to await collection thereof once or twice a week at least.

***(ii)*** All E.L.V.'s are fully de-polluted before being baled.

***(iii)*** Measures to enable storage of materials in baled form includes managing the stacks, rotating the materials therein regularly, minimise the stack sizes and height, store the materials in their largest form to minimise the risk of spontaneous / self-combustion and to limit the scale of any fire that may break out.

***(iv)*** Treating waste to reduce particle size can increase the risk of fire due to spontaneous / self-combustion. Therefore to reduce the risk of spontaneous / self-combustion, store the waste material in its largest form for as long as practicably possible before treating and moving it off premises.

***(v)*** For all waste piles, the maximum height allowed is 4m.

***(vi)*** When measuring height, you must use the longest measurement between the base of the pile and the top. This is to allow for any uneven ground beneath the waste. For all waste piles, the maximum length or width allowed (whichever is the longest) is 20m.

***(vii)*** If the waste piles contain a mixture of combustible wastes, the maximum limits based on the type of waste that makes up most of a mixed pile must be evaluated.

***(viii)*** If storing waste within a building, the design, access and layout of a building needs to be carefully considered so a fire can be extinguished easily and quickly by the Emergency / Fire Services.

The majority of bulk waste at these premises is in the open. The applicable maximum stockpile sizes are as follows:

| ***MAXIMUM PILE SIZES.*** | | | |
|---|---|---|---|
| ***WASTE TYPE.*** | ***Loose & more than 150mm.*** | ***30mm to 150mm or baled.*** | ***Less than 30mm.*** |
| ***Tyres & Rubber.*** | ***450m$^3$.*** | ***300m$^3$.*** | ***300m$^3$.*** |
| ***Wood.*** | ***750m$^3$.*** | ***450m$^3$.*** | ***300m$^3$.*** |
| | | | |

| | | | |
|---|---|---|---|
| ***Compost & Green Waste (excluding during the Active Composting Process).*** | ***750m³.*** | ***450m³.*** | ***450m³.*** |
| ***R.D.F. & S.R.F.*** | ***450m³.*** | ***450m³.*** | ***450m³.*** |
| ***Plastics.*** | ***750m³.*** | ***450m³.*** | ***300m³.*** |
| ***Paper & Cardboard.*** | ***750m³.*** | ***750m³.*** | ***450m³.*** |
| ***Textiles.*** | ***750m³.*** | ***750m³.*** | ***400m³.*** |
| ***W.E.E.E. containing Plastics, including Fridges, Computers & Televisions.*** | ***450m³.*** | ***450m³.*** | ***450m³.*** |
| ***Metals other than W.E.E.E. (including crushed E.L.V.'s, which are classed as 'Baled' Waste for the Purpose of this table - for whole E.L.V.'s see the Section 'Whole End-Of-Life Vehicles'.*** | ***750m³.*** | ***450m³.*** | ***450m³.*** |
| ***Fragmentizer Fluff.*** | ***450m³.*** | ***450m³.*** | ***450m³.*** |
| | | | |

***(ix)*** Whole E.L.V.'s, when stacked, must comply with the following conditions i.e.

- each vehicle must be accessible from at least one side (to allow active fire-fighting and so unburnt vehicles can be accessed and moved to prevent the fire spreading);
- any row must be limited to a depth of 2 vehicles and no more than 3 vehicles high (whether on racking or free-standing, so the stack can remain stable during a fire); and
- a separation distance of 6m must be maintained between rows / blocks of vehicles.

The quantities of stacked whole E.L.V.'S are minimal at these premises at any time.

***(x)*** If waste is stored in containers that can be moved, the maximum pile size requirements do not apply. Each container must be accessible from at least one side so a fire can be extinguished.
{*Examples of these types of containers include skips, roll-on roll-off skips, or shipping containers}.*

If there is a fire in a container, it must be possible to move the other containers away as soon as is reasonably practicable to prevent the fire spreading. There will be only a small number of containers on these premises at any time.

***(xi)*** The two main methods to prevent a fire from spreading are:

- the maintenance of *Minimum Separation Distances* between stacks / piles / adjacent buildings / other combustible or flammable materials (usually a minimum of 6m) {to minimise the risk of fire spread between and to assist in enabling the Emergency / Fire Services to gain clear access to all sides for fire-fighting purposes}; or
- the erection of *Fire Walls & Bays* {which can resist fire (both radiative heat and flaming) and provide a fire resistance period of at least 120 minutes to allow wastes to be isolated and to enable a fire to be extinguished within 4 hours and thereby enable a reduction in separation distances}.

Sketches in *Appendix 1 (Pages 97 - 100*) of the Waste Industry Safety & Health Forum Guidance - *Waste 28 - Reducing Fire Risk at Waste Management Sites* - can be utilised as necessary to select and confirm the appropriate separation distances required.

***(xii)*** A quarantine area is a designated area to place fire affected waste to ensure that it is fully extinguished or to move unburnt wastes into to isolate and prevent them catching fire.

The designated quarantine area is within the boundary of the site for which the permit has been granted and should be large enough to hold at least 50% of the volume of the largest pile / stack, row or block of E.L.V.'s or containers on the premises and have a separation distance of at least 6m around the quarantined waste (which can be reduced if concrete bunkers / walls are used). ***The current quarantine area is signposted within the large open sided building and adjacent to the tyre and battery storage.***

***5.19.*** **External Fire Spread:**

***(i)*** The office accommodation is within 3m of the Western elevation and there are no un-protected openings.

***(ii)*** The main building and the hammer mill are located on the Southern elevation within 3m of the boundary fence and once again there are no unprotected openings.

The dust accumulation from the hammer mill does collect on the nearby fencing / foliage and this requires regular attention and wash-down as part of the management control therefor.

Consideration is currently being given to water spray projection along this elevation.

***(iii)*** Stockpiles will not be stored on the boundary line and appropriate separation distances are applied.

***(iv)*** Where concrete walls / barriers are utilised, the fire resistance rating thereof is at least 90minutes with much of it being 120minutes fire resistance rating.

***(v)*** The boundary line of the premises is appropriately managed to control any possibility of foliage spreading into the neighbouring fields.

***(vi)*** Containment of fire water run-off is achieved via bunds and storage lagoons.

***5.20.*** **Firewater Retention.**

Containment of fire water run-off is achieved via bunds and storage lagoons.

***5.21.*** **Detecting Fires.**

***(i)*** The primary means of fire detection during working hours is a combination of operator / staff awareness and the use of the CCTV units (with visual flame detection and / or spark, infrared and ultraviolet detection incorporated) which can detect significant thermal increases in stacks / piles (especially outside of working hours) and buildings and alert the remote alarm monitoring centre (A.M.C.).

***(ii)*** There is also automatic smoke and heat detection and suppression systems installed within the various buildings about the premises, which will activate a fire alarm with the remote alarm monitoring centre (A.M.C.) and activate an early response thereto.

***(iii)*** The confirmation Certificates for the Design, Installation, Commissioning and Servicing / Testing of the various automatic fire detection and alarm systems on the premises have been provided by the competent third party installers in accordance with the requirements of the relevant Irish Standard {*I.S. 3218: 2013 + Amendment No. 1: 2019*} therefor. A copy of these certificates are retained in the Fire Register files for review by authorised persons on request.

***(iv)*** A similar situation applies for the installed automatic fire suppression system. A copy of the confirmation Certificates for the Design, Installation, Commissioning and Servicing / Testing therefor are retained in the Fire Register files for review by authorised persons on request.

***(v)*** All automatic fire detection and alarm systems and automatic fire suppression systems are serviced and maintained on a quarterly basis by competent third party contractors and a Certificate of Servicing / Testing for each system is issued thereafter for each system, a copy of which is retained in the Fire Register files for review by authorised persons on request.

## ***6.0. FIRE-FIGHTING TECHNIQUES.***

***(i) Access & Facilities for the Emergency / Fire Services:***

Basis of compliance is *Section 5, T.G.D. B (2006) (Reprint 2020*), Technical Guidance Note *TGN7.01 – Reducing Fire Risk at Sites Storing Combustible Materials* and Guidance Note: *Fire Safety at Non-Hazardous Waste Transfer Stations*.

St. Margaret's Recycling & Transfer Centre Ltd has a Standard Operating Procedure (S.O.P.) in place in respect to the actions required in the event of fire, which utilises trained personnel using fire-fighting equipment provided i.e. hand-held extinguishers and hose reels fed from the various hydrants about the premises.

The strategy is simply to control and delay the fire until the local Emergency / Fire Services arrive and take control of the situation.

***(ii)*** For Emergency / Fire Service operations to be successful, they must be able to access the site and fight the fire from as many avenues as possible. Therefore an alternative access has been identified to the south eastern elevation which will greatly enhance fire service intervention.

***(iii)*** There must be enough water available for fire-fighting purposes so as to manage a reasonable worst case scenario. This could a combination of water in storage tanks or lagoons on site and / or access to hydrants or a mains water supply.

The minimum reserves of water required for 4 hours operation for fire-fighting purposes have been determined by means of a Fire Safety Assessment as 960,000 litres.

If measures such as creating a fire break are in place, the fire-fighting water requirements for a 300 $m^3$ pile of combustible material is at least 2,000 litres / minute for a minimum of 3 hours, which equates to a water supply of 360 000litres in total and which may be reduced further if an automatic infill or re-circulation system is present.

If storing E.L.V.'s, the requirement will be 1800 litres of water to extinguish each vehicle.

***(iv)*** The current reserves of fire-fighting water reportedly consist of the following:

> 4 industrial sized water storage tanks, each with a reported capacity of 32,000 litres and 2 mobile water storage tanks with reported capacities of 10,000 and 20,000 litres respectively. This gives a combined water storage availability of 158,000 litres which, if maintained to the reported capacities, equates to 44% of the required total of 360,000 litres. Therefore, on a pro rata basis, stack sizes should not exceed 44% of 300$m^3$ i.e.132$m^3$.

It is proposed to augment the static supply with a hydrant supply to be provided by Irish Water from a local water supply. This will increase the capacity necessary to achieve the necessary reserve capacity.

The provision of hydrants therefor is in accordance with the requirements of *Sub-Section 5.1.7 - Diagram 30 of T.G.D. B (2006) (Reprint 2020)*, and. *B.S. 750: 2012 - Specification for Underground Fire Hydrants & Surface Box Frames & Covers* {recently updated to *B.S. 750:2023 - Underground Fire Hydrants. Surface Box Frames & Covers*}.

***(v)*** It is noted the current above ground static supply does not meet the standard for the provision of static water supply as yet. As stated above it is intended to rectify this at the earliest date in conjunction with Irish Water.

***(vi)*** Additional measures to assist fire-fighting operations include the management of stacks in accordance with the requirements of *TGN7 / 01 Section 8* and the spacing between stockpiles in accordance with the requirements of *Figure 1, Table's 1 & 2* of *TGN7 / 01*.

In addition, the robust segregation of stockpiles, protection from wind and improved definition of applicable spacing are all measures being implemented to provide increased prevention of fire spread between the stockpiles.

The increase in stock rotation periods of fragmentiser waste will also assist in reducing and minimising the applicable fire load.

***(vii)*** Stockpiles are no longer stored against buildings and fire-walls are used to enclose the fragmentiser.

## 7.0. EMERGENCY INCIDENT MANAGEMENT / CONTINGENCY PLANNING.

### 7.1. Assessment of Situation / Major Emergency Planning.

The decision to declare a Major Emergency Incident will be taken by the Fire Officer / Incident Commander who will take charge on arrival to the site and who will carry out an assessment having liaised with the Managing Director / Fire Safety Manager.

### 7.2. Major Incident.

One of the first actions to be taken, after calling the Emergency / Fire Services, will be to notify neighbouring properties.

### 7.3. Fire Safety Manager.

The Fire Safety Manager is the person who finds themselves in charge of an emergency in any premises which, in an emergency, is a very delicate, dynamic place and time controlled space. Their immediate actions and those of other team members will be vital to the outcome of the emergency. This will usually be the Managing Director who lives within 1km of the premises.

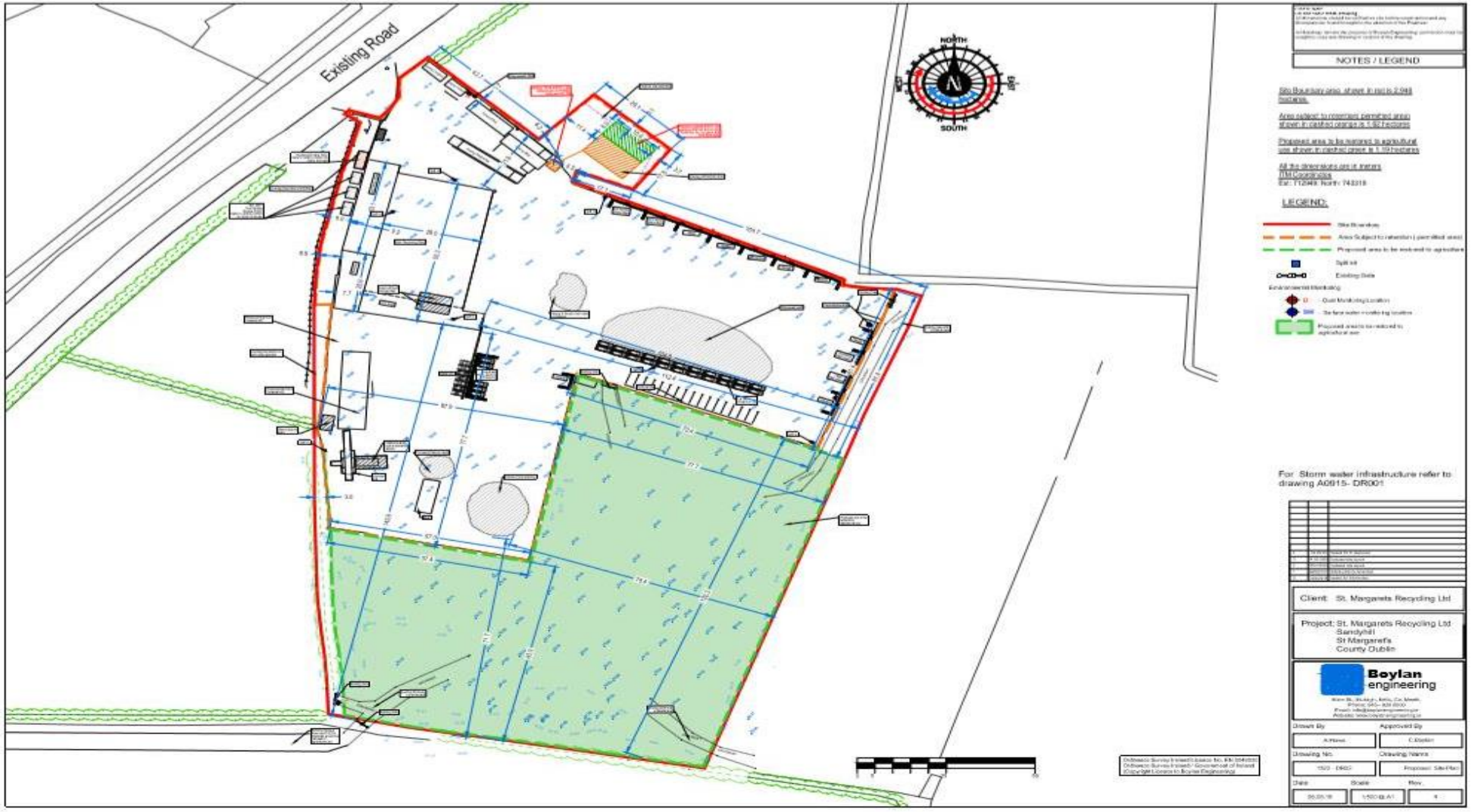
Based on existing Fire Safety Strategies, the Person-In-Charge will be the Emergency Incident Manager (E.I.M.) who will find themselves in charge of a disparate team who have come together in this unique once in a lifetime event. The E.I.M. has to assume all the emergency team members have received adequate training, have a good knowledge of the building / premises and of Emergency Incident Protocols.

The knowledge of the Fire Safety Manager has to be superior and their leadership qualities and management skills have to be excellent in an emergency situation. These attributes do not arrive overnight but are honed over time with previous experiences and training. Fire is usually a once in a lifetime event and is not a normal day-to-day activity. The training of staff is to provide them with the necessary tools and to prepare them for that once in a lifetime event for which we prepare but may never happen.

The Fire Safety Manager's primary duty is to ensure that all persons are removed to safety as soon as practicable, and to brief the Emergency / Fire Services Incident Commander on this / her arrival on site. On arrival the Incident Commander takes over and manages the emergency situation.

After fire has been extinguished and the Emergency / Fire Services have vacated the site, it will be necessary to clean up and decontaminate the site to make it operational again.

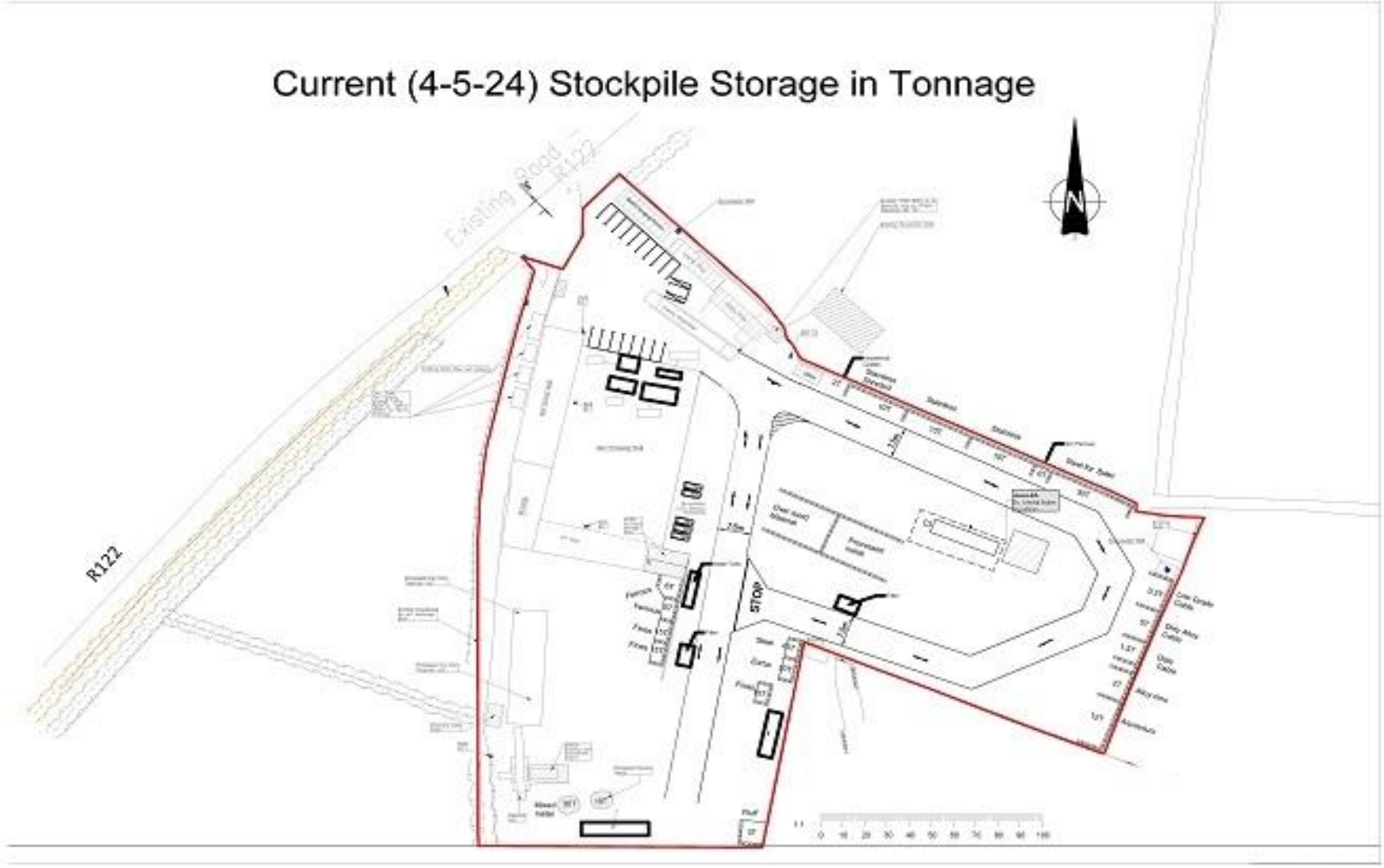
## ***APPENDIX I: SITE LAYOUT PLAN.***



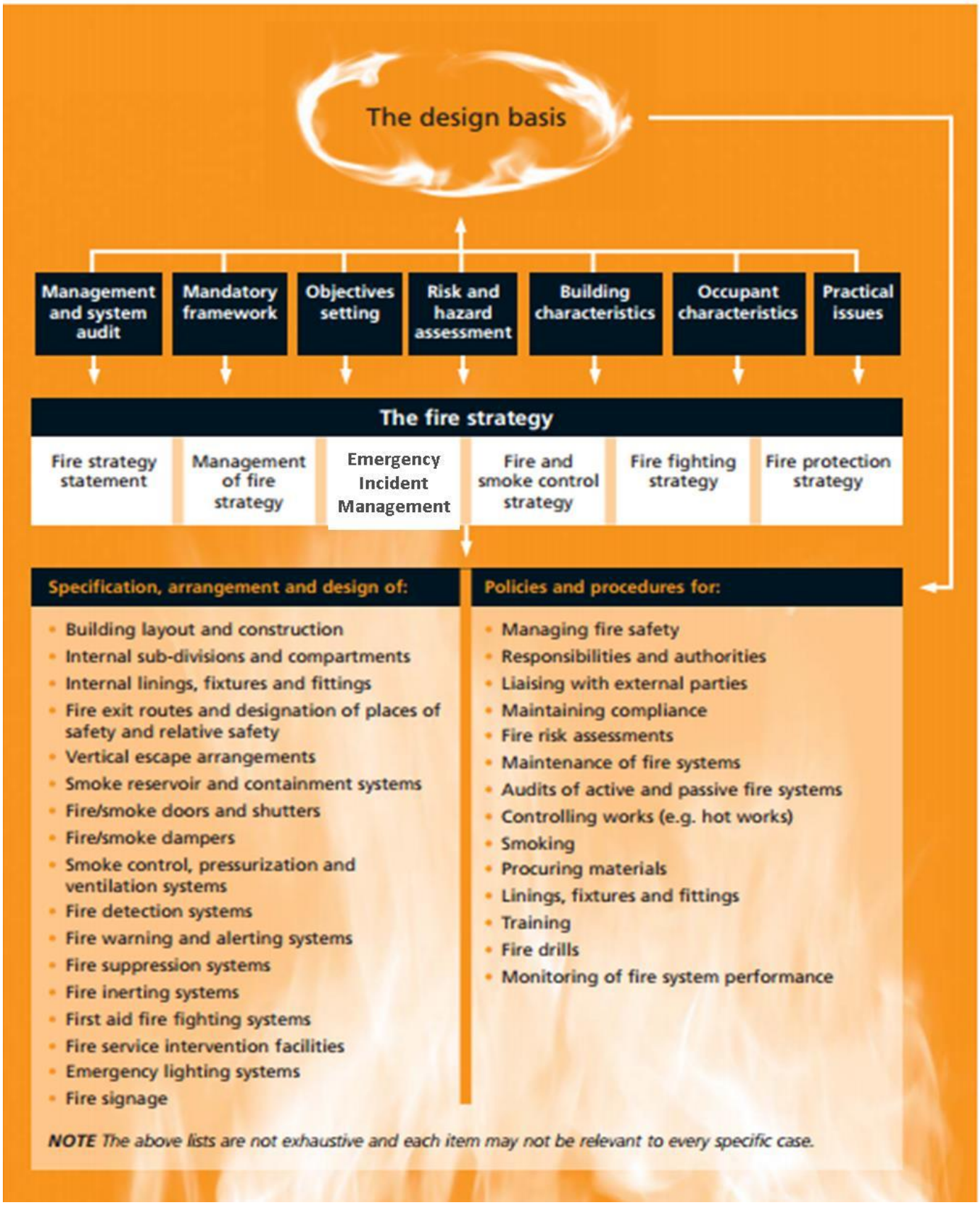
***APPENDIX II:*** ***SITE LAYOUT {as at 13/5/2024}.***

## ***APPENDIX III:*** ***ROADS LAYOUT FOR PERMIT REVIEW.***

## ***APPENDIX IV:*** ***CURRENT STOCKPILE STORAGE IN TONNAGE {as at 4/5/2024}.***



## ***APPENDIX V: DESIGN BASIS FOR THE FIRE PREVENTION PLAN.***



## ***APPENDIX VI: STAFF TRAINING PLANS.***

It is the policy of St Margaret's Recycling & Transfer Centre Ltd to provide new staff members with the earliest possible fire safety information prior to commencing their duties. This will be achieved at induction.

Induction training takes two forms viz. Orientation Training and Induction Training.

No new staff member will commence their duties without receiving Orientation Training, which will be provided by a member of the Fire Safety Management Committee. Orientation is based on the buddy system, in the event of an emergency; the new staff member will be assigned to a regular more experienced and competent staff member.

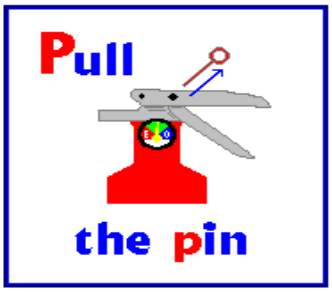
During the Orientation Training, the following information, in addition to the usual HR and safety range of information, will be delivered:

- ***(i)*** The layout of the facility will be given and a tour thereof indicating all of the emergency evacuation routes, location of fire-fighting and emergency equipment, etc.;
- ***(ii)*** The emergency signals for the facility will be explained and demonstrated.
- ***(iii)*** The required actions to be taken in the event of a fire or emergency;
- ***(iv)*** Instructions on how and when to raise the alarm and what to look out for during ongoing operations;
- ***(v)*** Details of the Person(s)-In-Charge;
- ***(vi)*** Details of the Fire Prevention Plan, including the method of access to a copy thereof as and when required.

Induction fire safety training will be provided once per month. It is a condition of employment that all members of staff attend the course and completes the training assessment. Induction training will cover all of the fire safety aspects necessary for new staff members to function effectively in the event of an emergency.

In addition all staff members will receive formal training on Fire Safety Awareness, the Safe Use of Fire Extinguishers & Fire-Fighting Equipment and Fire Warden / Fire Marshal training.

## *APPENDIX VII: P.A.S.S. METHOD FOR THE SAFE USE OF A FIRE EXTINGUISHER.*




***Pull the pin. This will allow you to squeeze the handle in order to discharge the extinguisher.***

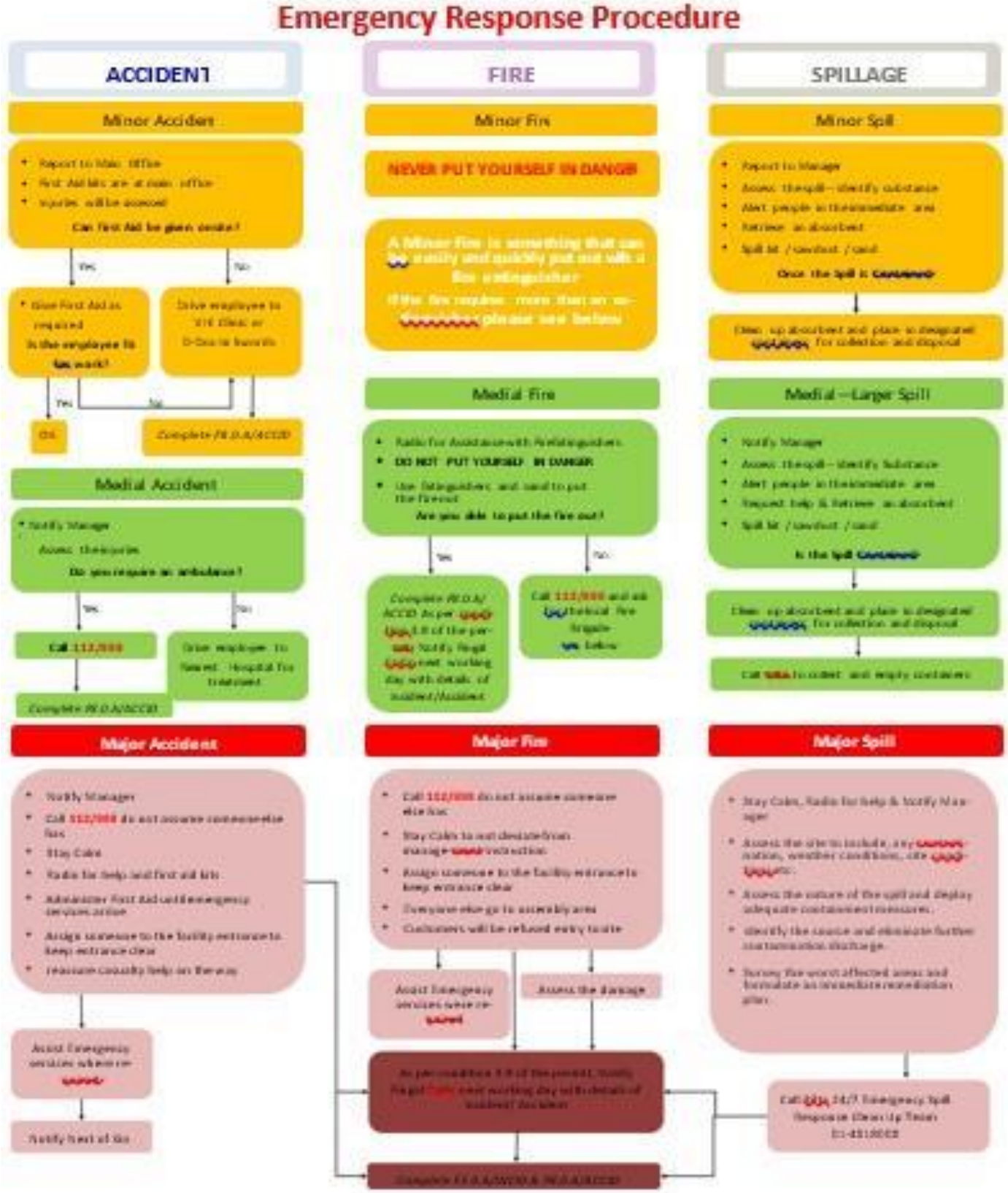
***Aim at the base of the fire. Aiming at the middle will do no good as the agent will pass through the flames.***


***Squeeze the handle. This will release the pressurized extinguishing agent.***


***Sweep from side to side. Cover the entire area that is on fire. Continue until fire is extinguished. Keep an eye on the area for re-igniting.***

## ***APPENDIX VIII:*** EMERGENCY RESPONSE PROCEDURE {E.R.P.}.

| | | |
|---|---|---|
| DOCUMENT REF: P&O.F/ERP | St. Margarets Metal Recycling | St. Margaret's Recycling & Transfer Centre Ltd |
| DOCUMENT TITLE: Emergency Response Procedure | | Seatbill, St. Margarets, Co. Dublin, K67 EW7 |



## ***APPENDIX IX:*** **FIRE EMERGENCY PLAN – GENERAL.**

NEVER PUT YOURSELF IN DANGER

# FIRE PLAN

NEVER PUT YOURSELF IN DANGER

A Minor Fire is something that can be easily and quickly put out with a fire extinguisher If the fire requires more than an extinguisher please see below

**ON DISCOVERING A SMALL / SMOULDERING FIRE**

- Fight with local extinguishers and sand if possible. Notify the site Agent immediately
- If unable to extinguish – Call 112/999 on nearest available phone and give clear instructions
- Evacuate the area and buildings and proceed to the assembly point (facility entrance) – Radio all staff to assembly point and sound the alarm
- Do not put yourself in danger and Do Not Deviate from management instruction

**SITE MANAGEMENT**

On being informed of a fire the Site Agent or his representative must:

- Call the emergency services on 112/999 do not assume someone else has done so and ensure evacuation of the buildings and site
- Fire Warden shall isolate surface water valve to prevent contamination
- Proceed to the assembly point (facility entrance) and await the Fire Brigade
- Ensure facility entrance is clear from traffic and weighbridge gate is open

**PERSON TO TAKE CHARGE**

- Mr. Brian McDonnell 086 265 4884
- Outside Normal working hours: As Above

**REMEMBER!** Dial **112 / 999,**

***Ask for Fire Services and give instructions***

ST. MARGARETS RECYCLING & TRANSFER CENTRE LTD

ST. MARGARET'S ROAD, R122, K67 EW73

NOTE: Take EXTRA care when using power tools (i.e., [illegible] / welders)

Take time to look at your surroundings before starting a power tool, if you think there is a material close buy which could be flammable then DO NOT start your power tool and remove the material from the area in which you are working

## ***APPENDIX X:*** EVACUATION PROCEDURES – Managers / Operatives / Staff.

| A. | ***MANAGERS:*** |
|---|---|
| **IF YOU DISCOVER AN EMERGENCY FIRE or SERIOUS ACCIDENT:** | |
| ***1.*** | ***Managers should immediately implement the Emergency Response Plan (E.R.P.).*** |
| ***2.*** | ***Contact the Emergency Services / Fire Brigade on 112 or 999. Do not assume someone else has unless you are otherwise advised.*** |
| ***3.*** | ***Get all staff to evacuate immediately to the designated Assembly Area (by the front facility entrance).*** |
| ***4.*** | ***Advise any waiting vehicles on the weighbridge to clear the weighbridge to leave access for emergency vehicles, if necessary.*** |
| ***5.*** | ***Bring the Visitor Book, the Fire Inspection / Drill / Evacuation Document and the Emergency Response Plan (E.R.P.) with you. Do not bring anything else.*** |
| ***6.*** | ***Go to the designated Assembly Area yourself.*** |
| ***7.*** | ***Nominate one person to manage traffic out of the site and keep the exits and road into the premises clear and unobstructed.*** |
| ***8.*** | ***Complete the Role Call at the designated Assembly Point to ensure all the staff and visitors are present and safe.*** |
| ***9.*** | ***Do not permit anyone to return to the buildings or the site until the ALL CLEAR is given by the Emergency Services Coordinator or the Management.*** |
| ***DO NOT PANIC OR DEVIATE FROM THESE INSTRUCTIONS.*** | |

| B. | OPERATIVES / STAFF: |
|---|---|
| **IF YOU DISCOVER AN EMERGENCY FIRE or SERIOUS ACCIDENT:** | |
| *1.* | *Contact the Emergency Services / Fire Brigade on 112 or 999. Do not assume someone else has unless you are otherwise advised.* |
| *2.* | *Warn anyone else in your sight to evacuate immediately to the designated Assembly Area (by the front facility entrance).* |
| *3.* | *Warn the drivers / operators of any lorries / vehicles on site to switch off their engine and walk to the designated Assembly Area (by the front facility entrance).* |
| *4.* | *Do not go to the designated Assembly Area in your lorry / vehicle as this will cause congestion and possible further unnecessary risk. Switch off your engine and walk to the Assembly Area without delay.* |
| *5.* | *Bring the Visitor Book, the Fire Inspection / Drill / Evacuation Document and the Emergency Response Plan (E.R.P.) with you. Do not bring anything else.* |
| *6.* | *Follow the instructions given to you by the Manager-In-Charge and do not leave the Assembly Area until you have been instructed to do so by either the Manager-In-Charge or the Emergency / Fire Services Coordinator.* |
| *7.* | *Always ensure that you have informed the Manager-In-Charge that you are leaving or relocating to another location.* |
| ***DO NOT PANIC OR DEVIATE FROM THESE INSTRUCTIONS.*** | |

## *APPENDIX XI: WEEKLY INSPECTION RECORD.*

| *MONTH:* | | *WEEK No.* | *1.* | *2.* | *3.* | *4.* | *WEATHER:* | *Hot.* | *Dry.* | *Wet.* | *Calm.* | *Windy.* | *Bad.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| ***MAIN ENTRANCE:*** | | | |
| *Entrance clear of debris / rubbish / fly tipping, etc.?* | | *Main electric gate working properly?* | |
| *Facility signs at entrance all intact & correct?* | | *Is the barrier operational?* | |
| *It the weighbridge & weighbridge clock working?* | | *Is the yard lighting working properly?* | |
| *Do any nearby trees / hedging need to be cut?* | | *Is the interceptor working correctly?* | |
| ***OFFICES:*** | | | |
| *Is the automatic fire detection & alarm system operating correctly?* | | *Are both combination door locks working properly?* | |
| *Are the panic / emergency buttons in order?* | | *Is the intruder alarm working properly?* | |
| *Are the computers & software working?* | | *Are the CCTV units fully operational?* | |
| *Are the canteen / tea room appliances in order?* | | *Are all toilets fully functional?* | |
| *Is the heating in operational order?* | | *Is all internal lighting working?* | |
| ***NON-FERROUS SHED:*** | | | |
| *Are all scales in working order?* | | *Is (are) the printer(s) in working order?* | |
| *Are fire extinguishers in place & operational?* | | *Are the floor areas clear & tidy?* | |
| *Are all non-ferrous materials in tonne bags?* | | *Are the CCTV units (2off) in working order?* | |
| ***MAIN PRODUCTION SHED:*** | | | |
| *Are all batteries stored in a wrapped pallet or in a bunded box?* | | *Does a shipment need to be organised (e.g. for pallet removal, etc.)?* | |
| *Are all tyres stacked in a safe manner?* | | *Do tyres need to be collected for removal?* | |
| *Are fire extinguishers in place & operational?* | | *Are the floor areas clear & tidy?* | |

| | | | |
|---|---|---|---|
| ***DE-POLLUTION AREA:*** | | | |
| ***Are the floor areas clear & tidy?*** | | ***Are all hoses inside bunds?*** | |
| ***Are fire extinguishers in place & operational?*** | | ***Do any of the tanks need to be emptied?*** | |
| ***BACK YARD:*** | | | |
| ***Are there any major cracks or fissures visible?*** | | ***Are fire extinguishers in place & operational?*** | |
| ***Is the Kobelo unit operating correctly & well?*** | | ***Are the 2 x Sennebogen units operating correctly & well?*** | |
| ***Is the LeFort baler unit operating correctly & well?*** | | ***Are the ground areas clear & tidy?*** | |
| ***FRONT YARD:*** | | | |
| ***Are fire extinguishers in place & operational?*** | | ***Is the external fencing intact?*** | |
| ***Do any of the non-ferrous bays need to be emptied?*** | | ***Are the dog pens secure?*** | |
| ***Are the ground areas clear & tidy?*** | | | |

| ***COMMENTS:*** | |
|---|---|
| ***1.*** | |
| ***2.*** | |
| ***3.*** | |
| ***4.*** | |
| ***5.*** | |
| ***6.*** | |
| | |

## ***APPENDIX XII: FIRE INSPECTION / DRILL / EVACUATION DOCUMENT.***

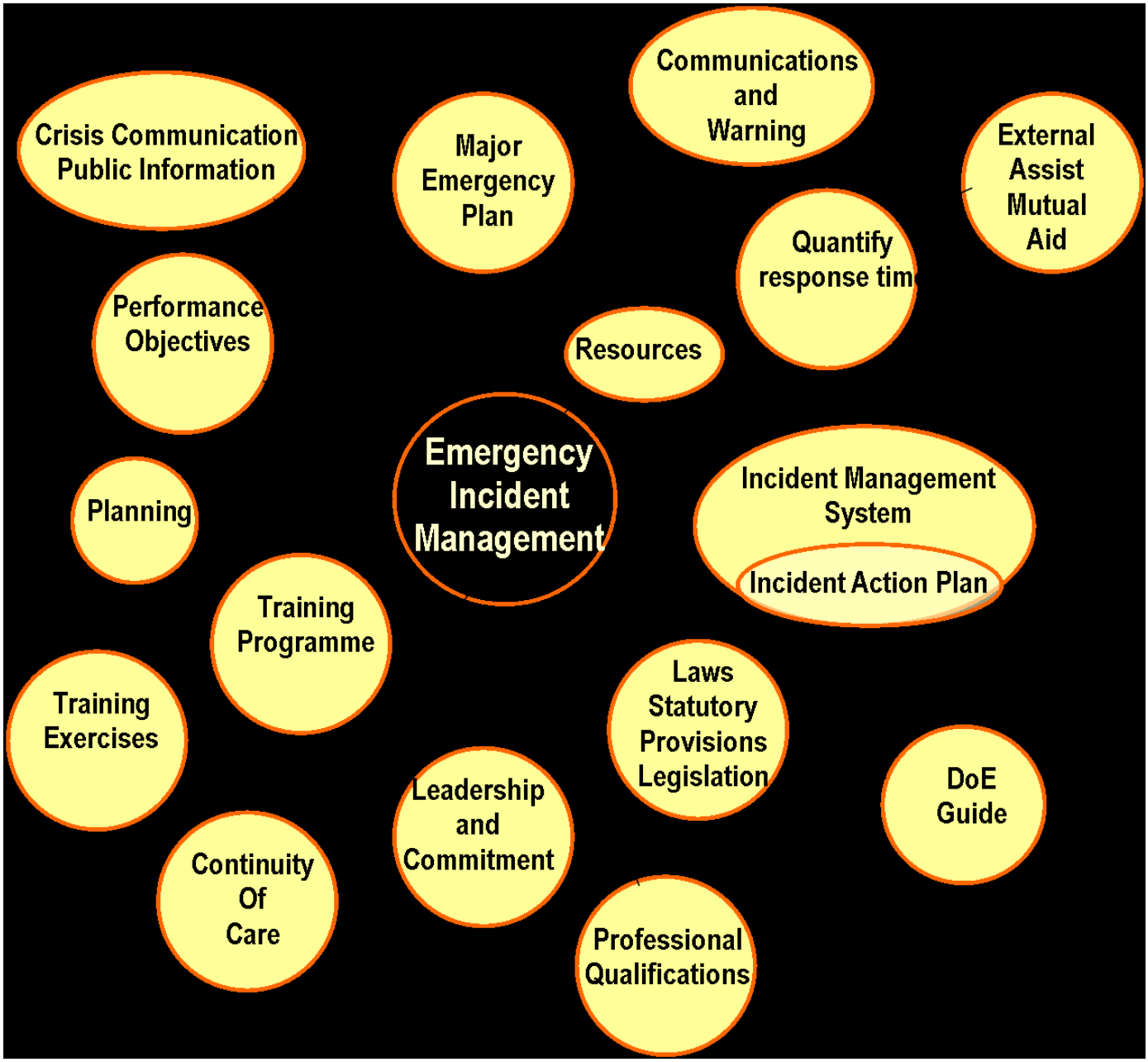
St. Margarets Metal Recycling

| Employee | Main Work Area | Nearest Fire Point to your work Area | Are the Extinguishers sealed | Are they accessable? YES / NO. | Fire Drill Roll Call. Absent. | Present. |
|---|---|---|---|---|---|---|
| **Brian McDonnell.** | Office / Yard. | **ALL.** | | | ☐ | ☐ |
| **Daryna Sobol.** | Office. | **1, 2.** | | | ☐ | ☐ |
| **Raluca Serban.** | Office. | **1, 2.** | | | ☐ | ☐ |
| **Gemma Rock.** | Office. | **1, 2.** | | | ☐ | ☐ |
| **Mary Hayden.** | Office. | **1, 2.** | | | ☐ | ☐ |
| **Caroline Kinahan.** | Office. | **1, 2.** | | | ☐ | ☐ |
| **Alan Reilly.** | Office / Yard. | **ALL.** | | | ☐ | ☐ |
| **Niall Farrell.** | Machine Operator / Back Yard. | **8, 15.** | | | ☐ | ☐ |
| **Viktor Dorzds.** | Non-Ferrous Shed / Open Shed / Yard. | **4, 5, 6, 7, 9.** | | | ☐ | ☐ |
| **JJ Harris.** | Machine Operator / Back Yard. | **8, 9, 15.** | | | ☐ | ☐ |
| **Adrian Martinas.** | De-Pollution. | **8, 9, 14.** | | | ☐ | ☐ |
| **Vasyl Semeshchuk.** | De-Pollution. | **8, 9, 14.** | | | ☐ | ☐ |
| **Janis Stasis.** | Non-Ferrous Shed / Open Shed. | **4, 5, 6, 7.** | | | ☐ | ☐ |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Artem Sliusar.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Nasari Kuksin.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Valentyn Kutsenko.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Oleksandre Lazarenko.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Vasyl Semeshchuk.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Fredir Nehaliuk.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Le Duc Duy.** | Open Shed. | **4, 6, 7, 10.** | | | ☐ | ☐ |
| **Sean Bruton.** | Driver. | **ALL.** | | | ☐ | ☐ |
| **James McDonnell,** | Driver. | **ALL.** | | | ☐ | ☐ |
| **Eddie O Connell,** | Driver. | **ALL.** | | | ☐ | ☐ |
| **Tom Ryan,** | Driver. | **All.** | | | ☐ | ☐ |
| **Fire Drill:** ☐ | **Fire Evacuation:** ☐ | **Fire Fighting Equipment Drill:** ☐ | | | ***Date :*** | ***Signature*** |

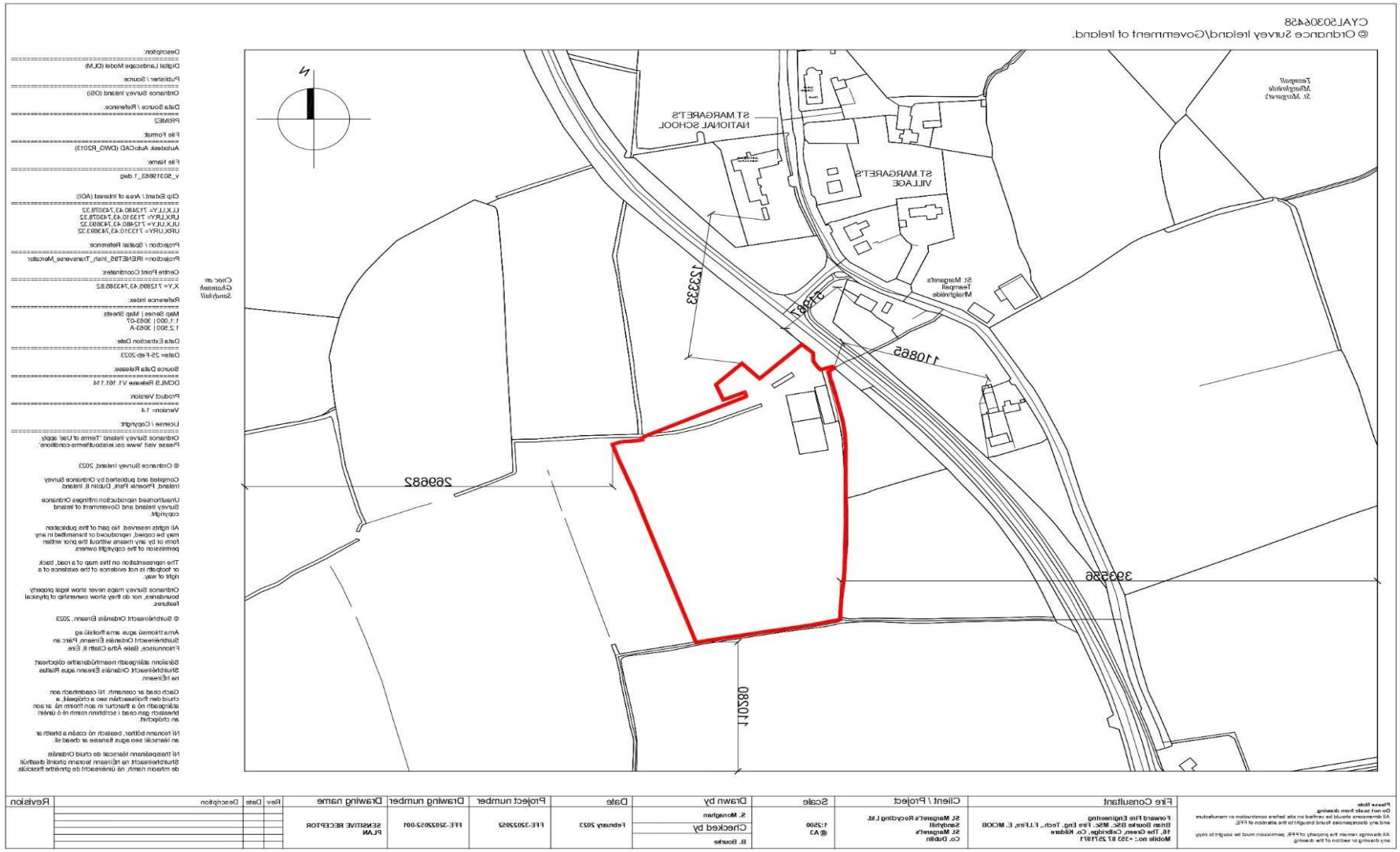
| **RECORD of FIRE DRILL.** | | | | **No.** | |
|---|---|---|---|---|---|
| ***TIME of FIRE DRILL:*** | | | ***DATE of FIRE DRILL:*** | | |
| ***NATURE of ALARM ACTIVATION:*** | ***Fire Alarm - Actual.*** | | ***Accidental Activation.*** | | |
| | ***Emergency Activation.*** | | ***Planned Fire Activation / Drill.*** | | |
| ***NATURE of EVACUATION:*** | ***Fire Drill.*** | | ***Bomb Threat.*** | | |
| | ***Fire Ignition.*** | | ***Telephone Threat*** | | |
| | ***Postal Threat.*** | | ***Uncontrolled Gas Release.*** | | |
| ***OBSERVATIONS:*** | **1.** | | | | |

## *APPENDIX XIII: EMERGENCY INCIDENT MANAGEMENT – OVERVIEW.*




Immediate Actions
Leadership
Emergency Incident Manager
Assign and Prioritise Tasks
Take Ownership and control of situation
Initiate Emergency Protoco[s and SOPs
Incident Assessment
Available Resources

## ***APPENDIX XIV:*** **SENSITIVE RECEPTOR PLAN.**

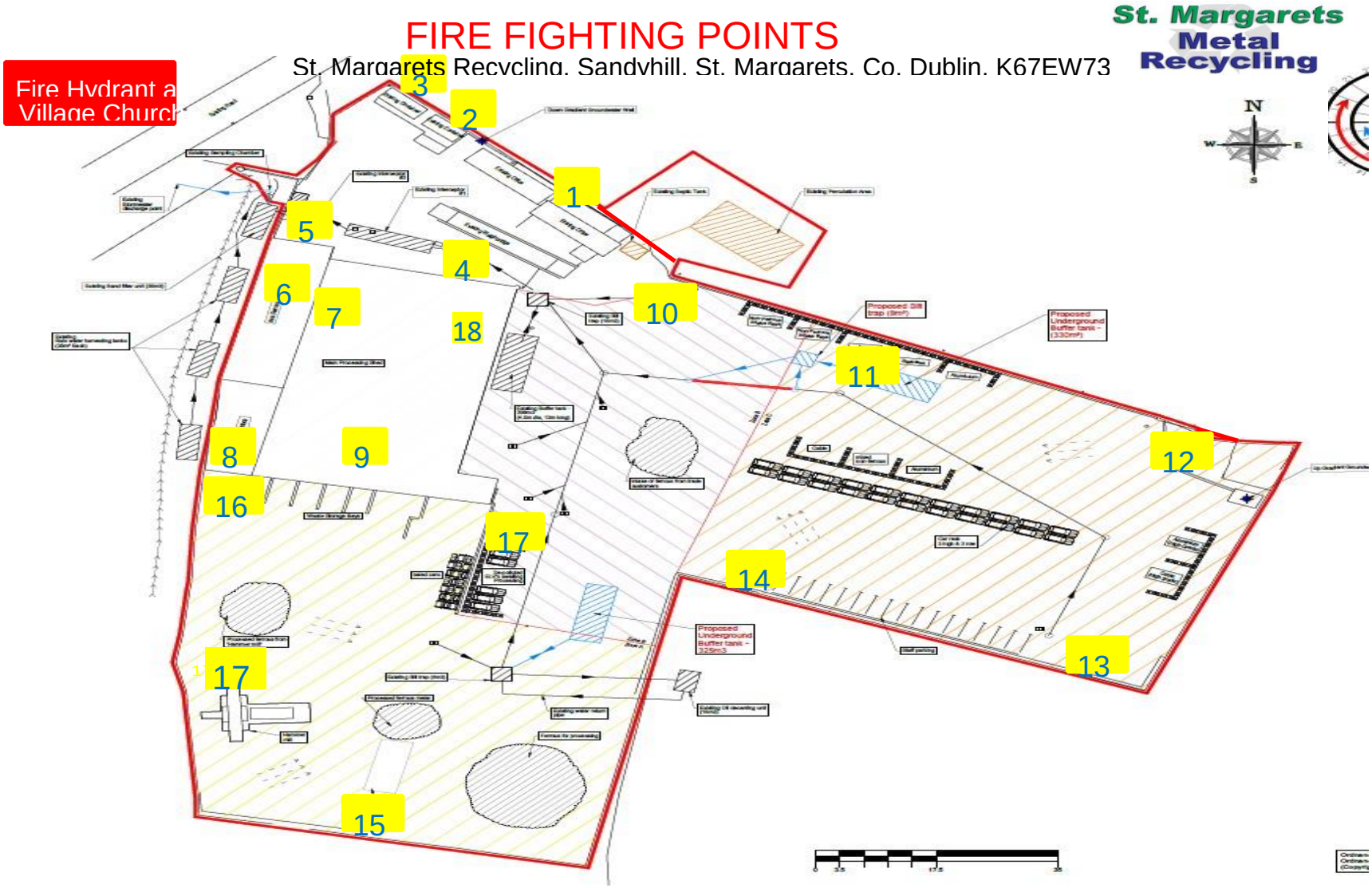


## ***APPENDIX XV:*** **FIRE FIGHTING POINTS.**

| No. | Area. | No. of Extinguishers. | No. | Area. | No. of Extinguishers. |
|---|---|---|---|---|---|
| 1. | Main Office. | 9. | 11. | Between Non-Ferrous Bays. | 2. |
| 2. | Drying Room. | 2. | 12. | Beside Dog Pens. | 2. |
| 3. | Canteen. | 2. | 13. | Staff Parking Top Corner. | 2 + 1 x 50kg. |
| 4. | Side of Weighbridge. | 2 + 1 x 50kg. | 14. | Staff Parking. | 2. |
| 5. | Front of Non-Ferrous Shed. | 2. | 15. | Behind Baler. | 2. |
| 6. | Inside Non-Ferrous Shed. | 2 + 1 x 50kg. | 16. | Outside Workshop. | 2. |
| 7. | Inside Open Shed back to back with Point 6. | 2 + 1 x 50kg. | 17. | Hammermill. | 13 + 1 x 50kg. |
| 8. | Workshop. | 2 + 1 x 50kg. | 18. | Lithium Battery Blanket & Fire Extinguisher. | 1 + 1. |
| 9. | De-Pollution Area. | 4 + 1 x 50kg. | 19. | Mobile Water Tanker. | 1. |
| 10. | Beside Toilets. | 2. | | | |

# FIRE FIGHTING POINTS

St. Margarets Recycling, Sandyhill, St. Margarets, Co. Dublin, K67EW73



## ***APPENDIX XVI: EMISSION PLAN – 2021.***

## ***APPENDIX XVII: HEAVY MOBILE PLANT & VEHICLES – GUIDANCE.***

***Most waste management sites use heavy mobile plant, such as loading shovels, grabs and telescopic handlers. This plant can lead a hard life and is inevitably ion direct contact with waste, much of which may be combustible. Other vehicles, such as visiting lorries, may also pose a risk.***

***Mobile plant can pose ignition risks to the wastes they come in contact with***:

***(i) Hot exhausts can ignite wastes trapped near them. Plant operators must be informed and instructed of this risk and ensure that all wastes are cleared from around exhausts and other hot parts of the plant / machines at the end of each shift.***

***(ii) Appropriate fire extinguishers must be fitted in each item of mobile plant and operators must be provided with appropriate training in the safe use of same.***

***(iii) It is advisable to install automatic fire extinguishing equipment under the bonnet of each plant engine and in other high-risk areas.***
*{Note that this may be a requirement of your Insurers and you should formally check with same}.*

***(iv) Ensure that all mobile plant is serviced and maintained well to a strict schedule, with close attention given to the electrical systems (which are often a source of fire ignition), with formal records thereof retained on file for review by authorised persons on request.***
*{Note that the schedule of maintenance suggested by the Manufacturers / Suppliers may not be sufficient in waste management conditions / use and consideration should be given to whether more frequent maintenance / servicing is required}.*

***(v) Mobile plant / equipment should be parked well away from waste stacks, waste left in reception / receiving areas or any other places where waste may be present.***
*{Ideally the mobile plant / equipment should be parked in a sterile / protected area e.g. in an empty block / building / bunker, behind a fire compartment wall, in the open well away from any waste materials , etc.}.*

***(vi) Mobile plant / equipment shovels, blades, etc. may produce sparks when being scraped along a concrete or metal floor / surface / wall. Operators must be made aware of this and be instructed to maintain awareness thereof at all times.***
*{For high-risk areas and materials, consideration should be given to utilising specialist coatings for the mobile plant / equipment shovels, blades, etc. to limit the generation of sparks from these sources}.*

***(vii) If the condition of the concrete in reception, storage and other areas is poor to the extent that the metal reinforcing bars or similar are exposed, then the risk of metal-on-metal contact and the production of higher energy sparks may well increase. It is essential therefor that the condition of the concrete surfaces are checked and assessed to a regular schedule and that operators are instructed to report same at all times.***

***(viii) The timely maintenance and repair of damaged concrete surfaces will assisting in mitigating any risks from this source.***

***(ix) If practical and possible, utilise non-flammable hydraulic oils. This is likely to be easier and as efficient for new plant / machines and more difficult for older types. Check the situation out with the Manufacturer / Supplier as appropriate. Record findings formally.***

## ***APPENDIX XVIII:*** ***HAMMER MILL STANDARD OPERATING PROCEDURE - Draft.***

| | | |
|---|---|---|
| ***DOCUMENT REF.:*** | ***PS.2.1 / HAM.*** | ***St. Margaret's Recycling & Transfer Centre Ltd, Sandyhill, St. Margaret's, Co. Dublin.*** |
| ***DOCUMENT TITLE:*** | ***Hammer Mill Operating Procedure.*** | |

### ***1.0. Purpose:***

This document describes the Standard Operating Procedure (S.O.P.) that will provide employees with a set of guidelines that have been developed to mitigate hazards associated with this work task, as identified through the work-place hazard identification process.

### ***2.0. Scope.***

This document covers the Standard Operating Practices during the use of the Hammer Mill, which is used to separate / breakdown materials prior to export.

### ***3.0. Responsibility.***

The Managing Director ultimately has overall responsibility the Standard Operating Procedures are followed safely and that the maintenance and service schedule of equipment is adhered to.

### ***4.0. Procedure.***

***4.1*** On site we use an American Pulveriser Hammer Mill to separate waste materials of scrap and aluminium. The following instructions must be followed to ensure the safe use of the machine:

- ***(i)*** The Hammer Mill must not be operated solo. At least two employees must be present when in use;
- ***(ii)*** Keep fingers and arms away from the hopper;
- ***(iii)*** Ensure valves are completely closed and any protection devices are secured;
- ***(iv)*** Carefully feed bundles of material into the hopper and feed only at the rate that the Hammer Mill can process material;
- ***(v)*** Follow proper procedures and use the right equipment, including safety glasses, heavy duty gloves and protective foot-wear;
- ***(vi)*** Ensure safety measures, such as caps or guards, are securely installed;
- ***(vii)*** On completion of use, turn off the motor, clean work areas, allow the motor to cool down and monitor.

***4.2.*** Scrap materials are selected after appropriate segregation and separation of materials that have been accepted to site.

***4.3.*** The Hammer Mill itself is fixed on a flat concrete pad.

***4.4.*** Material containing EWC 17 04 05 (iron and steel) and EWC 17 04 07 (mixed metal) is placed onto a conveyor using an excavator grab before being top fed through an in-line crusher into a fine in-feed hopper.

***4.5.*** Material is given shredder treatment through the spider and end disc cap crusher and swing hammers.

***4.6.*** Lighter fractions are separated through gyrating assembly screener line and passes out onto a stockpile which is diverted to a designated area for recovery / disposal off site.

***4.7.*** Appropriate operator supervision through operational panels and visual checks on materials passing through the in-line conveyor system.

***4.8.*** The unit shall be serviced through a preventative maintenance programme (PPM) in accordance with Manufacturer's Instructions.

***4.9.*** Where unplanned maintenance is required, enclosures on housing, covers and guarding shall be replaced for safety and prevention of diffuse emissions of noise, dust and spilled material.

***4.10.*** Processed metals such as Shredded 211 / Meatballs (17 04 05 EWC), Ali TT (17 040 07) is then stored in designated areas awaiting export from the site.

***4.11.*** Lighter fractions discharged from the process is further processed using a trammel to remove fines and remainder residue (19 10 04). The light fraction residue is then stored in designated areas awaiting export from site for disposal. Appropriate stockpile thresholds for fire safety shall be observed on stockpile volume.

| | | | | | | |
|---|---|---|---|---|---|---|
| ***Author:*** | ***Caroline Kinahan.*** | ***Version:*** | ***002.*** | ***Date:*** | ***4th February 2021.*** | ***WFP – FG – 13 – 0002 – 03.*** |

## ***APPENDIX XIX: REFERENCES / STATUTORY INSTRUMENTS / LEGISLATION.***

### *A: BUILDING REGULATIONS 1997 – 2021:*

***(i)*** The buildings are subject to the provisions of the Building Regulations 1997 – 2021 and the Fire Services Acts 1981 & 2003.

***(ii)*** For fire safety, the functional requirements of the Building Regulations, as espoused in *Technical Guidance Document B – Fire Safety (2006) (Reprint 2020),* are set out under the following headings, which will be expanded on when submitting Fire Safety Certificate submissions:

***Requirement B1*** - ***Means of Warning & Escape.***
***Requirement B2*** - ***Internal Fire Spread (Linings).***
***Requirement B3*** - ***Internal Fire Spread (Structure).***
***Requirement B4*** - ***External Fire Spread.***
***Requirement B5*** - ***Access & Facilities for the Fire Service.***

***(iii)*** The original Fire Safety Certificate for the premises was issued in March 1998 {*Register Reference No. FSC / 076 / 98}*.

***(iv)*** Guidance on compliance with the requirements of Part B of the Building Regulations is presented in *Technical Guidance Document B – Fire Safety (2006) (Reprint 2020),*which applies to applications under Part B Building Regulations.

### *B: FIRE SERVICES ACTS 1981 & 2003:*

***(i)*** The are the primary pieces of fire safety legislation in Ireland. Responsibility for compliance with fire safety in any premises rests with the "Responsible Person".

***(ii)*** In a Waste Recycling and Transfer facility, the duties and responsibilities of the Responsible Person lies with the operators and the Management Team for the Centre and has been delegated from the Managing Director thereto. At any particular time, the "Responsible Person(s)' will be the person(s) who has (have) control of part or all of the premises.

***(iii)*** Where building work and fire protection measures comply with the requirements of *Technical Guidance Document B – Fire Safety (2006) (Reprint 2020)* as prima facie evidence of compliance with the Building Regulations, additional physical measures should not normally be required under the fire safety exercise unless high-hazard materials or processes are introduced to the premises *(which will not be the case here).*

***(iv)*** The *Fire Services Acts 1981 & 2003* places specific duties on the "Responsible Person" such as carrying out a Fire Risk Assessment of the premises, providing first-aid fire-fighting equipment, training up employees in relation to Fire Safety Awareness, Safe Use of Fire Extinguishers and appropriate training for Fire Wardens and Fire Marshals.

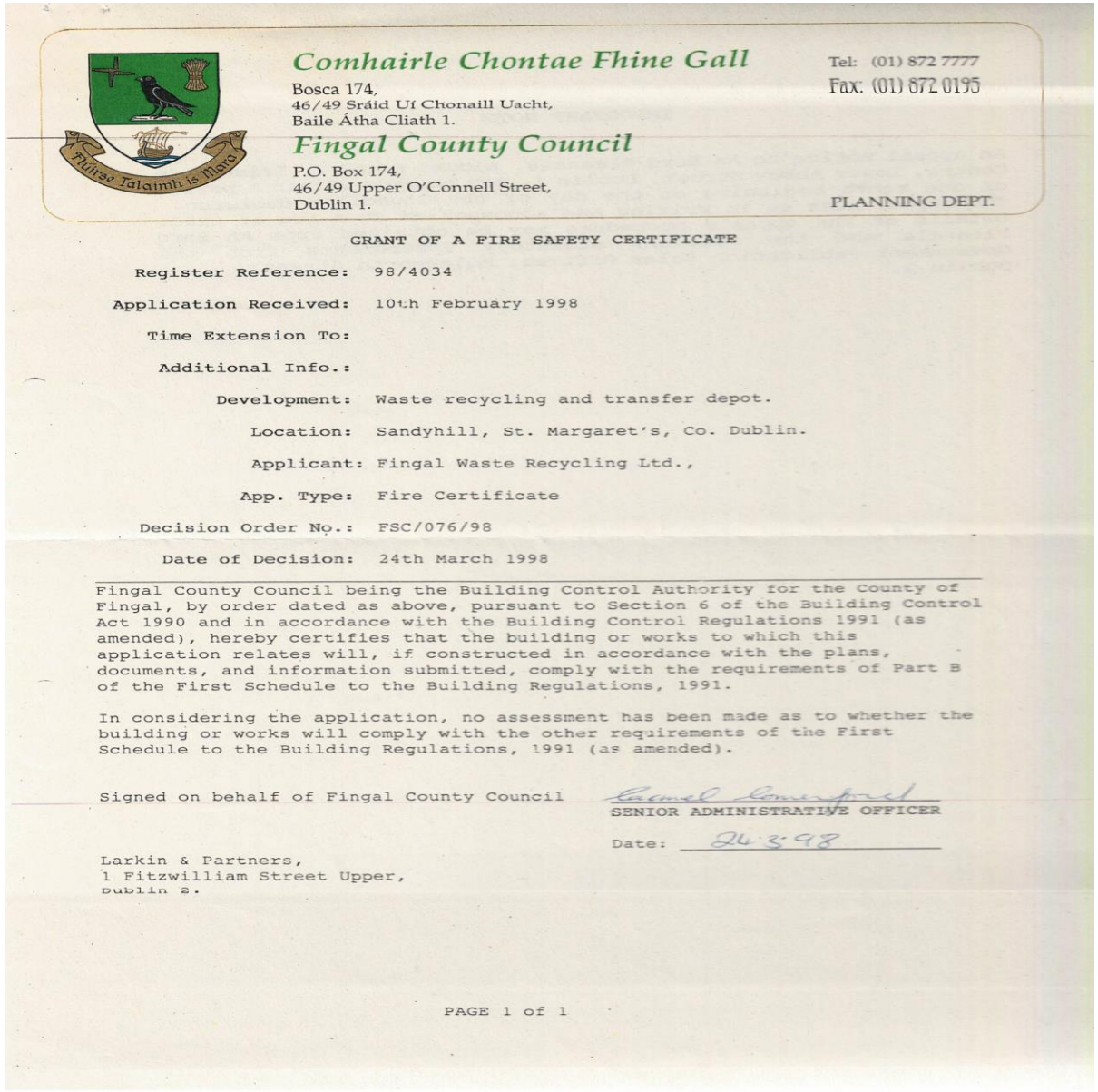
## *C: OTHER RELEVANT STATUTORY INSTRUMENTS / LEGISLATION.*

***(i)*** The Building Control Acts / Regulations 1990 – 2014.
***(ii)*** Safety, Health & Welfare at Work Act 2005.

## *D: INFORMATIVE REFERENCES.*

***(i)*** Technical Guidance Document J (T.G.D. J) **-** Heat Producing Appliances;
***(ii)*** B.S. 558: 2004 - Part 12 - Managing Fire Safety;
***(iii)*** C.I.B. Report – Publication 269: 2001 - Rational Fire Safety Engineering Approach to Fire Resistance of Buildings – W014: Fire;
***(iv)*** I.S. 3218: 2013 + Amendment No. 1: 2019 - Fire Detection & Fire Alarm Systems for Buildings – System Design, Installation, Commissioning, Servicing & Maintenance;
***(v)*** I.S. 3217: 2013 + Amendment No. 1:2017 - Emergency Lighting;
*{Note updated to I.S. 3217: 2023 – Emergency Lighting}.*
***(vi)*** I.S. 291:2015 + Amendment No. 1: 2022 - Selection, Com missioning, Installation, Inspection & Maintenance of Portable Fire Extinguishers;
***(vii)*** WASTE 28 (Waste Industry Safety & Healthy Forum – W.I.S.H.) - Reducing Fire Risk at Waste Management Sites (Issued in March 2020).
***(viii)*** Fire Safety Guide for Building Owners and Operators (2023) - DoHLG.
***(ix)*** Fire Safety at Non-Hazardous Waste Transfer Stations – Guidance Note (2013) – E.P.A.
***(x)*** Risk Assessment –Generic - Non-Hazardous Waste Recycling-SR2022-No5-EPA.
***(xi)*** Technical Guidance note (TGN 7.01) - Reducing Risks at Sites storing Combustible Materials (March 2015, Vers. 2-Withdrawn 2016) - Environment Agency;
***(xii)*** I.S.10101: 2020 – National Rules for Electrical Installations.
***(xii)*** European Union (End-of-Life Vehicles) Regulations 2014.

## ***APPENDIX XX: ORIGINAL GRANT OF FIRE SAFETY CERTIFICATE – Copy.***



Comhairle Chontae Fhine Gall
Bosca 174,
46/49 Sráid Uí Chonaill Uacht,
Baile Átha Cliath 1.
Fingal County Council
P.O. Box 174,
46/49 Upper O'Connell Street,
Dublin 1.

Tel: (01) 872 7777
Fax. (01) 872 0195

PLANNING DEPT.

GRANT OF A FIRE SAFETY CERTIFICATE

Register Reference: 98/4034

Application Received: 10th February 1998

Time Extension To:

Additional Info.:

Development: Waste recycling and transfer depot.

Location: Sandyhill, St. Margaret's, Co. Dublin.

Applicant: Fingal Waste Recycling Ltd.,

App. Type: Fire Certificate

Decision Order No.: FSC/076/98

Date of Decision: 24th March 1998

Fingal County Council being the Building Control Authority for the County of Fingal, by order dated as above, pursuant to Section 6 of the Building Control Act 1990 and in accordance with the Building Control Regulations 1991 (as amended), hereby certifies that the building or works to which this application relates will, if constructed in accordance with the plans, documents, and information submitted, comply with the requirements of Part B of the First Schedule to the Building Regulations, 1991.

In considering the application, no assessment has been made as to whether the building or works will comply with the other requirements of the First Schedule to the Building Regulations, 1991 (as amended).

Signed on behalf of Fingal County Council

SENIOR ADMINISTRATIVE OFFICER

Date: 24.3.98

Larkin & Partners,
1 Fitzwilliam Street Upper,
Dublin 2.

PAGE 1 of 1

## ***APPENDIX XXI:*** ***FIRE PROTECTION / SUPPRESSION SYSTEMS – PLANS, DESCRIPTIONS, LOCATIONS, etc.***

### *(a) AUTOMATIC FIRE DETECTION & ALARM SYSTEM – PRODUCTION BUILDINGS & YARD:*

1 x 2 Zone Fire Alarm Control Panel 4 x Manual Call Points.
10 x Smoke Detectors c/w 2 x Sounder Devices.
3 x Visual Sounder Beacons.

The automatic fire detection & alarm system has reportedly been installed to the requirements of *I.S. 3218: 2013 + Amendment No. 1: 2019 – Fire Detection & Fire Alarm Systems for Buildings – System Design, Installation, Commissioning, Servicing & Maintenance.*

The permanent production buildings have a manual alarm system only because of the openness of the areas.

### *(b) AUTOMATIC FIRE DETECTION & ALARM SYSTEM – OFFICES / PORTACABINS / T.A.U.'S:*

1 x 2 Zone Fire Alarm Control Panel 2 x Sounder Devices.
7 x Smoke Detectors c/w 1 x Sounder Devices.

### *(c) FIRE EXTINGUISHERS / FIREFIGHTING EQUIPMENT:*

61 off – Multiple Size / Type Handheld.

***Note:*** As a Place of Work it should be possible to provide an alarm – audible and visual - throughout the site. The hammer-mill area has a particularly high background sound level when operational. Specialist advice should be sought in relation to the noise levels, the associated health & safety implications thereof and to ensure the alarm can be raised and heard in all areas thereof.

Plans are well advanced in relation to installing Heat Detection C.C.T.V. throughout the site.

Fire-fighting water storage arrangements consist of 4 x 32000litre industrial metal tanks, with automatic feed off the public mains and from wells on site. There is also a mobile tractor unit with 2600litre capacity with rain / cannon water gun capabilities constantly available for deployment. There are also two mobile water storage tanks with reported capacities of 10,000 and 20,000 litres respectively available for deployment.

1 x Specialist Lithium Fire blanket.

ESC Environmental Ltd

# Hedgerow Survey
# for
# Proposed Development
# At
# St Margarets Recycling Ltd,
# Co. Dublin

Reference: 2534 St Margarets Hedgerow Survey

ESC Environmental Ltd
Company Register Number: 687386
W: www.escenvironmental.ie
E: info@ escenvironmental.ie
Tobernania Ballintogher
County Sligo
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M: 086 308 0356

| Document Control | |
|---|---|
| Organisation | ESC Environmental Ltd. |
| Project Name | St Margarets Hedgerow Survey |
| Report Title | Hedgerow Survey |
| Author(s) | Peter McCormick |
| Draft version/final | 16/05/2025 |
| Document reference | 2534 St Margarets Hedgerow Survey |
| Site Address | Sandyhill St, Sandyhill, St Margaret's, Co. Dublin |

# Contents

# 1 Introduction

On behalf of St Margarets Recycling and Transfer Station Ltd, ESC Environmental Ltd have prepared a Hedgerow Survey Report to identify hedgerows at risk from the proposed project and provide management to conserve the existing environment. The project consists of an application to continue with the ongoing use of the Waste Recycling and Transfer facility at St Margarets, and the rewilding of an area to the south of the site.

## *1.1 Description of the Proposed Development*

The proposed development can be summarised as the following:

1. *The on-going use of the existing metal processing and transfer facility with waste throughput at the facility to accept up to 21,900 tonnes per annum (in line with waste permit) for the bulking, transfer and recycling of metals, construction & demolition waste, bulky/skip waste, batteries, wood waste, glass, other non-biodegradable non-hazardous wastes, and an Authorised Treatment Facility for end-of-life vehicles.*
2. *The restoration of the 1.1 ha of compacted hardcore surfaced lands to grassland or wildflower meadow, and to include agricultural haul roads/tracks to serve adjacent agricultural lands, in compliance with conditions 3 and 6 of F13A/0409. These lands were included in an enlarged site area, comprising 2.93 ha under F13A/0409 and F20A/0409.*
3. *Permission for upgrades to the underground surface water attenuation tank comprising c.675 cubic metres, and an above ground overflow connected to same comprising 1500 sqm*
4. *Enhancement of car parking provision, including installation of 2no. EV charging point and*
5. *Alterations to site boundary arrangements, including replacement of existing internal boundary comprising stacked steel containers with 3m high concrete panel and steel post wall, augmentation of dust netting where applicable, etc.*

This report is to determine the significance of the hedgerows surrounding the development site, specify how the hedgerows will be protected during site set up and construction, and to assess the hedgerows positions in a landscape plan.

## *1.2 Site Description*

The subject lands are located at Sandyhill, St. Margaret's, on the east side of the R122 (Finglas - Balbriggan Regional Road), on a site located directly south of the main settlement known as St. Margaret's. To the south are lands that support the main southern runway to Dublin Airport with the M50 located further south of the subject site. The surrounding area is comprised primarily of greenfield agricultural lands with clusters of housing and commercial developments located along the R122 road both to the north and south of the application site.

The subject lands comprise an existing waste transfer and recycling centre that has been in existence since 1997 (albeit in different ownership) on circa 1.6 ha of lands. The site functions as an Authorised Treatment Facility (ATF) for end-of-life vehicles (ELVs), and waste recovery and recycling facility which is permitted to accept waste metals, C & D waste material and batteries (up to 21,900 tonnes per annum). It is understood that since 1998 it has operated at this level, with the exception of those years between 2019 and 2023 where the waste intake exceeded this tonnage. (From an AA perspective this exceedance is considered in the remedial NIS). The site comprises concrete hardstanding entrance laneway and public parking area in the northwestern corner; hardstanding for the storage of cars awaiting depollution, covered waste processing shed, site offices, welfare facilities and a weighbridge at the entrance and secure perimeter fencing.

The outline of the proposed development is shown in Figure 1. The total site outline is in Red and the proposed rewilding area is outlined in Green.


**Figure 1: Proposed Development Outline**

## *1.3 Purpose of the Hedgerow Survey*

The purpose of this report is to provide supporting information to the competent authority, in this case An Bord Pleanála, to carry out an assessment of the Hedgerows in the vicinity.

The aim of this report is to assess the health of the hedgerows surrounding the site, and the to determine conservation strategies to ensure that no degradation of the hedgerows in the vicinity occurs due to the proposed project.

### 1.3.1 Evidence of Technical Competence and Experience

Peter McCormick carried out the site surveys for this project and prepared the report, and it was technically reviewed by Leo Cosgrove and Martijn Leenheer.

Leo Cosgrove has worked in environmental and ecological consultancy since 2013 and holds a BSc (Hons) Environmental Science. Since 2013 Leo has been involved in a wide range of projects and plans throughout Ireland including mammal surveys, appropriate assessments, habitat surveys, and Environmental Impact Assessments.

Peter McCormick has 7 years of experience working in environmental and ecological consultancy and holds a BSc (Hons) in Environmental Science from Sligo Institute of Technology. Peter has broad experience in the environmental management and ecological field and is responsible for ecological studies at ESC Environmental. He has focuses on Appropriate Assessments, Mammal Risk Assessments, Invasive Species Monitoring Plans and other Ecological services.

Martijn Leenheer has 10 years of experience in the environmental field and he coordinates teams of multi-disciplinary experts for a range of projects and outputs including Appropriate Assessments, Ecological Impact Assessments (EcIA) and ecology reporting in support of planning applications for large commercial and residential facilities.

# 2 Methodology

The methodology for the Hedgerow Survey was adopted from the guidance document "Hedgerow Appraisal System, Best Practise Guidance on Hedgerow Surveying, Data Collation and Appraisal" (Foulkes et al, 2013).

The guidance is for large scale surveys which would consist of surveying an entire county. The methodology employed was altered from the guidance by assessing the hedgerows in closest proximity to the project instead of using a semi-random sample selection, as this will assess the most important hedgerows to the project.

The objective of the methodology is to record the extent (i.e. quantitative survey), and floristic composition, context, physical structure, condition, and management of hedgerows (i.e. qualitative survey) in the locality.

## *2.1 Hedgerow Definition*

Murray and Foulkes (2006) define hedges or hedgerows as:

> *"Linear strips (4m wide or less) of woody plants with a shrubby growth form that cover more than 25% of the length of a field or property boundary that have been deliberately established or managed. They often have associated banks, walls, ditches (drains), or trees*".

Hedges that have developed into lines of trees which no longer display a shrubby growth form (remnant hedgerows) are also considered for recording purposes.

In order to maintain consistency with other habitat surveys in the Republic of Ireland, it is proposed that hedgerows meeting the following definition of Fossitt (2000) are also recorded (abbreviated):

> Hedgerows WL1: *Linear strips of shrubs, often with occasional trees, that typically form field or property boundaries. Dimensions of hedgerows are taken here as being mainly less than 5m high and 4m wide. When wider or taller than this, or dominated by trees, the habitat should be considered as a narrow strip of scrub or woodland, or as a* treeline - WL2. *Some hedgerows may be overgrown or fragmented if management has been neglected, but they should still be considered in this category unless they have changed beyond recognition. Linear strips of low scrub are included in this category if they occur as field boundaries.*

Treelines are appraised as part of the survey and are defined as the following:

> Treelines WL2: *A treeline is a narrow row or single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees. Most treelines are planted and trees are often regularly spaced. They commonly comprise a high proportion of non-native 57 species such as Beech (Fagus sylvatica), Horse Chestnut (Aesculus hippocastanum), Sycamore (Acer pseudoplatanus), limes (Tilia spp.), some poplars (Populus spp.) and conifers. Trees may occur on level ground or on banks of earth. The presence or absence of hedgerow or scrub at the base should be noted. If treelines are greater than 4 m wide at the base they should be considered as narrow stretches of woodland.*

## *2.2 Sampling Method*

The sampling method in the Guidance document suggests a semi-random selection of the hedgerows analysed to sample approximately 1% of the total area of the given region. Due to the localised nature of the project, only the hedgerows and treelines in the immediate vicinity of the project are assessed instead, as hedgerows and treelines not in the immediate vicinity of the site have any potential to be impacted by the project.

Hedges bordering curtilage (as defined in Fossitt (2000) – BL3) are only recorded if they also border agricultural land. This is to avoid skewing the sample with garden hedges that do not border a field or property boundary and are not agricultural hedges. Hedges that are within afforested land are not recorded for the purposes of this survey, as they fall into different habitat categories.

## *2.3 Hedgerow Appraisal*

The appraisal system is intended to identify hedgerows significance and condition and to provide a means of condition assessment for hedgerows based on the data recorded using the methodology outlined below.

### 2.3.1 Hedgerow Significance

The system is based on ranking the significance of hedges on a scale of 0-4 (0 being lowest) in five categories: Historical Significance, Species Diversity Significance, Structure, Construction and Associated Features, Habitat Connectivity Significance and Landscape Significance. A score of 4 in any category indicates a hedge of high significance (Heritage Hedgerow). Hedges can also be considered of high significance (Heritage Hedgerows) if they record a cumulative score of 6 or greater in the Historical, Species Diversity or Structural Categories, or a cumulative score of 16 or greater over the five categories. These hedges should be considered as high priority in terms of retention, management action, etc. Hedges recording lower scores may still be of value depending on the context.

### 2.3.2 Condition Assessment

Hedgerows are ranked from 0-3 (0- unfavourable to 3- highly favourable) in 3 categories representing the Structural Variables, Continuity and other Negative Indicators. The higher the recorded score, the more favourable the condition. A score of 0 in any category represents a hedgerow in Unfavourable Condition.

# 3 Scope

## *3.1 Study Area*

The hedgerows studied as part of the survey are indicated in Figure 2.

## *3.2 Desk Study*

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. The majority of the recording for the survey is carried out in the field but a certain amount of desk study will be necessary to ascertain specific details relating to Historical Significance and Landscape Designation. The desktop study includes an in depth study of aerial photography, OS maps, and historical map sources.

## *3.3 Field Survey*

The field survey was carried out on the 13$^{th}$May 2025 which is the start of the optimum time of year for hedgerow surveys. The results of the survey were recorded in the data form provided as part of the Guidance Documents and are included in Appendix 3.

## *3.4 Limitations of Study*

In the commencement of this report, the surveyor was instructed to carry out the survey according to the document "Hedgerow Appraisal System" by Foulkes et al (2013). This guidance is suited to a much larger area than designated for this study. The Hedgerow Appraisal System is designed for Countywide or Regionwide survey, and the method had to be adapted to a smaller scale.

The adaption of the sampling method led to a significant amount of irrelevant hedgerows being included in the survey as there is no potential for impact on hedgerows which do not immediately border the development.

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**Figure 2: Hedgerows Surveyed**

# 4 Results of Survey

A total of 10 hedgerows surrounding the St Margarets facility were surveyed. All of these hedgerows were surveyed in two lengths of 30m each. Hedgerow 7 was an exception to this due to the overall length of the hedge only supporting one 30m length.

## *4.1 Results Excluded*

The 10 hedgerows to be included in the survey were determined using a combination of knowledge of the site and the desktop study. The field survey determined that Hedgerow 1A and 1B, 6A and 6B, and 8A and 8B are to be excluded from the final reporting as they do not meet the definition of a hedgerow. These areas are 6-7m wide and are considered thin strips of woodland. The survey determined that these areas are a habitat of (Mixed) Broadleaf Woodland (WD1) classified according to "A Guide to Habitats in Ireland" (Fossit, 2000).

## *4.2 Significance*

### 4.2.1 Historical Significance

The historical significance was determined from the following table:

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Historical Significance** | **Low Significance** | **Slightly Significant** | **Moderately Significant** | **Significant** | **Highly Significant** |
| Period of Establishment (B,B1,B2,B3,B4,F,W) | Recently Established (0-25 years) | Internal Field Boundary | Roadside / Rail / Canal Boundary: Farm Boundary, March ditch*, Mearing* *old terms for farm boundaries | Boundary appears on 1st Edition O.S. | Townland Parish / County Boundary: Area shown as, or connected to, woodland on 1st Edition O.S. map: Connects to feature recorded on Sites and Monuments Record |
| | | | | Non-linear (excluding roadside) | |
| | | Past evidence of laying or coppicing | | | |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Historical Significance | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

The historical significance of the hedgerows surveyed is relatively high, with the hedgerows between 02A and 04B being townland boundaries and are indicated on historical maps. The later hedgerows to be surveyed were planted at a later date along less historical boundaries.

### 4.2.2 Species Diversity Significance

The species diversity significance was determined from the following table:

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Species Diversity Significance** | **Low Significance** | **Slightly Significant** | **Moderately Significant** | **Significant** | **Highly Significant** |
| Tree / Shrub / Climber Species Count (Floristic) (All species) | (1-3 species / 30m strip) | (4/5 species / 30m strip) | (6/7 species / 30m strip) | (8/9 species / 30m strip) | (10+ species / 30m strip) |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Species Diversity Significance | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 |

There is moderate species diversity across the hedgerows surveyed. The most prominent species are Hawthorn (*Crataegus monogyna*) and European Ash (*Fraxinus excelsior)* with ground flora consisting of Blackberry (*Rubus fruticosa)*, Nettles (*Urtica dioica)* and occasional Creeping Thistle (*Cirsium arvense)* present.

### 4.2.3 Structure, Construction and Associated Features

The structural significance was determined from the following table:

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Structure, Construction & Associated Features** | **Low Significance** | **Slightly Significant** | **Moderately Significant** | **Significant** | **Highly Significant** |
| Wall / Bank (G1,G2,G3,H) | None | Wall / Bank < 0.5m (height / depth) | Wall / Bank 0.5 - 1m | Wall / Bank > 1m | Double Ditch |
| Drain / Ditch (B,I,I1) | | | Dry Ditch | Wet Ditch / Drain | Stream / River |
| Other (Target Notes) | | | Badger Set | | |
| Other (G3) | | | Green Lane | | |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Structure Significance | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 |

The overall hedgerow structure contains little variety in the region. Most surveyed hedgerows have a dry drainage ditch present, with two having banks present. There are no other structures of significance in the hedgerows surveyed. The bank which is recorded at 03A is significant as it is over 2m high, and is the only hedgerow on the boundary of the rewilding works to be carried out.

### 4.2.4 Habitat Connectivity Significance

The habitat connectivity significance was determined from the following table:

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Habitat Connectivity Significance** | **Low Significance** | **Slightly Significant** | **Moderately Significant** | **Significant** | **Highly Significant** |
| (C1,C2,D1,D2,D3) | No connection with other semi-natural habitat | Single link with semi-natural habitat including hedgerow | Multiple links with semi-natural habitats, including other hedgerows | Link with woodland / forest habitat | Link with designated area, particularly woodland |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Habitat Connectivity Significance | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 2 | 2 |

There is low habitat connectivity in the hedgerows, with most linking to other hedgerows and no other semi-natural habitats. The hedgerows which scored higher than 2 were connected to the narrow strip of woodland which was initially defined as references 01, 06, and 08.

### 4.2.5 Landscape Significance

The landscape significance was determined from the following table:

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Landscape Significance** | **Low Significance** | **Slightly Significant** | **Moderately Significant** | **Significant** | **Highly Significant** |
| (J, P,Q, Desk study) | | Wind shaped | Mature Hedgerow Trees | | Area covered by Landscape designation (Landscape Conservation Order, TPO, Amenity Area Order) |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landscape Significance | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |

The assessment of the landscape significance indicated that the significance of the identified hedgerows is low, with none scoring higher than "Moderately Significant".

### 4.2.6 Total Significance

Hedges can also be considered of high significance (Heritage Hedgerows) if they record a cumulative score of 6 or greater in the Historical, Species Diversity or Structural Categories, or a cumulative score of 16 or greater over the five categories. The total significance is indicated below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Historical, Species Diversity and Structural Categories | 9 | 9 | 10 | 9 | 8 | 8 | 5 | 5 | 4 | 4 | 4 | 5 | 5 |
| All five Categories | 12 | 12 | 13 | 12 | 13 | 13 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Heritage Hedgerow | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | X | X |

The total significance of the hedgerows surveyed was influenced mainly by the historical significance. The most significant hedgerows in the area are the hedgerows designated 02, 03, and 04. These have good structure, historical significance, and good ecological variety which contributes to biodiversity in the region.

## *4.3 Condition*

The factors determining the overall condition of the hedgerows are shown below.

### 4.3.1 Structural

The structural condition was determined from the following table:

| Structural Variables | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| Dimensions | **Unfavourable** | **Adequate** | **Favourable** | **Highly favourable** |
| Height (K) | <1.5m | 1.5 – 2.5m | 2.5 – 4m | >4m |
| Width (L) | <1m | 1 – 2m | 2- 3m | >3m |
| Profile (J,J1) | Remnant; Derelict; | Wind shaped; Losing Base Structure | Boxed / A-shaped; Straight sided | Overgrown; Top heavy/ undercut; Outgrowths at base |
| Basal density / porosity to light of woody shrubs? (N) | Open | Semi-translucent | Semi-opaque | Opaque / Dense |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Structure Condition | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 1 | 1 | 2 | 2 |

The structural condition of the hedgerows is overall good, with the exception of 07A which is a remnant hedge present as an internal field boundary, and does not receive much evident maintenance. All other hedges are in an Adequate to Highly Favourable structural condition.

### 4.3.2 Continuity

The continuity condition was determined from the following table:

| Continuity | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| | Unfavourable | Adequate | Favourable | Highly favourable |
| % gaps (M) | >10% | 5-10% | <5% | Continuous |
| Specific gaps (M1) | Individual Gap > 5m | Individual gap <5m | No gaps | No gaps |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuity Condition | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 2 | 3 | 3 |

All the hedges present are continuous with no sizable gaps present.

### 4.3.3 Negative Indicators

The negative indicators condition was determined from the following table:

| Negative Indicators/ Degradation / Issues affecting long-term viability | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| | Unfavourable | Adequate | Favourable | Highly favourable |
| Bank / Wall (O,O1) | >20% of the length of the hedge degraded | <20% of the length of the hedge degraded | Minor degradation | No degradation |
| % of canopy dominated by Ivy (Floristic) | >25% | | | |
| Unfavourable species composition (from list) (Floristic) | >10% of woody growth volume comprised of unfavourable species | | | |
| Ground Flora / Hedge Base (Y) | > 20% of ground layer showing evidence of Herbicide Use | | | |
| Ground Flora / Hedge Base (Y) | Contain Noxious weeds •/ > 20% Dominated by Nutrient Rich Species | | | |
| Ground Flora / Hedge Base (Y) | Presence of alien invasive species[ß] | | | |
| Degraded Margin (R2,R4) | Ploughing up to base of hedge shrubs or Poaching/erosion | | (grassy) margin (2 m or greater on one side of the hedge) | (grassy) margins (2 m or greater on both sides of the hedge) |

The results of the survey are in the table below:

| Hedgerow Ref | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 07A | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Negative Indicators Condition | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 1 | 0 | 2 | 2 | 3 | 3 |

Overall, the hedges present have a favourable condition in reference to negative indicators present. There was some noxious plants noted in 05A, and 04A and 07A had a dominance of English Ivy across the woody structures present in the hedge.

# 5 Summary of Results

The overall hedge health and significance is good for the local region. The hedges to the south and west of the site are of higher significance than the hedges to the north or east. There are a number of "*Heritage Hedgerows*" present, which indicates high value hedges. The percentage of the hedgerows which are "*Heritage Hedgerows*" is higher than the national average of 39% which shows good quality hedgerows in the immediate area of the St Margarets facility.

# 6 Design Incorporation

Out of all the Hedgerows surveyed during the study, only hedges 03A and 05 bound any of the development work. Hedge 05 is situated all along the western boundary of the site. There is a steel wall separating the site from hedge 05B, and no works will be carried out beyond this wall, and so there is no need for design incorporation as this hedge is separate from the project.

The rewilding of the southern area of the site bounds Hedge 05A, and 03A is in a close proximity. The rewilding will consist of importing topsoil onto the site, and then spreading wildflower seeds. Hedgerow 03A is a heritage hedgerow and is to be retained as part of the rewilding. This hedgerow is separated from the development by a >2m high bank, which the hedgerow is partially situated on, and a 12m buffer between the hedge and the area to be rewilded. Due to this there is not much potential to incorporate this into the design.

Hedgerow 05A is located on the western boundary and will be adjacent to the rewilding area. This hedgerow will form the western boundary for this wildflower meadow, and will increase the biodiversity of the area.

# 7 Hedgerow Protection during Development

The only hedgerow which is directly adjacent to works is 05A. This hedgerow is on the western boundary of the rewilding area, and is of moderate significance to the greater area. As the construction of the rewilding area consists of the importation of soil, the risk to the hedgerow health is small.

The raising of the soil is to be kept below 1m from the current height as the dominant tree types, Hawthorne and Ash are vulnerable to changes in the soil hydrology with increases greater than 1m. The Root Protection Areas (RPA) for hedge 05A are to be calculated and marked, and no vehicles will enter this RPA and works should not be carried out within this area. Due to the nature of the rewilding development happening adjacent, no other protective works are deemed necessary.

# 8 Landscape Plan

Out of the hedgerows assessed, only 03A and 05A is near the development. There is a significant boundary between this hedgerow and the works being carried out, as there is a large embankment a 12m buffer between the hedge and any of the works to be carried out with rewilding. Due to this, hedgerow 03A is nor to be incorporated into the landscape plan as it is beyond the boundaries of the works.

The hedgerow 05A borders the proposed rewilding site on the west. This hedgerow will be incorporated as the boundary of the site, leading to new habitat connections between the hedgerow and the new wildflower meadow. The hedgerow will provide a natural boundary and increase biodiversity of the site.

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# Appendix 1 - Photos

**Hedgerow 01A**

**Hedgerow 01B**

**Hedgerow 02A**

**Hedgerow 02B**

**Hedgerow 03A**

**Hedgerow 03B**

**Hedgerow 04A**

**Hedgerow 04B**

**Hedgerow 05A**

**Hedgerow 05B**

**Hedgerow 06A**

**Hedgerow 06B**

**Hedgerow 07A**

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**Hedgerow 08A**

**Hedgerow 08B**

**Hedgerow 09A**

**Hedgerow 09B**

**Hedgerow 10A**

**Hedgerow 10B**

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# Appendix 2 – Recording Reference

## Appendix B: Hedgerow Manual data recording field sheets – explanatory notes

These notes are for field use to assist in finalising the survey field sheets available at www.heritagecouncil.ie/landscape/resources-links/ prior to submission to the National Hedgerow Database located in the NBDC.

**Note:** * denotes a data category derived from desk study, i.e. maps, documents, databases, etc.

| | | |
|---|---|---|
| | **Surveyor(s)** | Name(s), address & contact details |
| | **Date of Recording** | Date of field survey (day: month: year) |
| *D | **ID** | Unique identifier: 3 character OS hectad reference; 2 digit hedge number identifier; 1 alpha character *a* or *b* to indicate 30m strip, e.g. H13.01a |
| *D | **OS_Square** | 3 character OS hectad reference |
| *D | **Length** | Total length (m) of polyline |
| *D | **Start_node_to_start_of_1st_30m_strip_** | Distance in metres |
| *D | **End_of_1st_30m_to_start_of_2nd_30m__** | Distance in metres |
| *D | **End_of_2nd_30m_to_End_Node_** | Distance in metres |
| | | |
| | ***Context*** | |
| *D | **Corine** | CORINE Land Cover Classification |
| *D | **Soil Type** | This can be assessed using the appropriate layer on the NBDC website www.biodiversityireland.ie |
| | **GPS_Start_Point** | |
| | **GPS_End_Point** | |
| *D | **a1. Elevation_max.(m)** | Record maximum elevation of the hedge using GPS or Discovery Series contours. |
| *D | **a2. Elevation_min.(m)** | Record minimum elevation of the hedge using GPS or Discovery Series contours. |
| *D | **b1. Aspect_Side_1** | Using 16 major compass points deduce the aspect of each side based on a straight line drawn from one end of the hedge to the other. |
| *D | **b2. Aspect_Side_2** | See above. |
| | | |
| | **A._Adjacent Land Use (1)** | Record the type of farming carried out on lands adjacent to the hedge – record both sides of the hedge. |
| | a tillage | |
| | b dairy | |
| | c cattle | |
| | d sheep | |
| | e mixed stock | |
| | g equine | |
| | h other | |
| | I fodder | Meadow cut or left for making silage or hay |

| | | |
|---|---|---|
| | j curtilage | Fossitt BL3 and BC4 |
| | k amenity / golf course / playing field | |
| | l parkland / demesne | |
| | | |
| *D | **B. History (1)** | With reference to the 6 inch to one-mile OS Maps note if the hedge is a Townland, County or other boundary of historical significance. |
| | 1 internal farm boundary | |
| *D | 2 townland / parish, etc. boundary | |
| *D | 3 canal side boundary | |
| *D | 4 railway line boundary | |
| | 5 farm boundary | Townland boundaries, etc. should be assumed to be property boundaries. |
| | | |
| | **B1._History_Road_/_Stream (0,3)** | |
| *D | 1 road | |
| | 2 stream | Only record if it meets Fossitt watercourse definitions |
| | 3 recently established | Hedgerow up to c.25 years old |
| | | |
| *D | **B1a. Road Class (0,1)** | For roadside hedges only |
| | NP – National Primary | |
| | NS – National Secondary | |
| | R – Regional | |
| | L – Local | |
| | U – Unclassified | |
| | F – Farm Road or Track | |
| | | |
| | **B2. History Ordnance Survey (0,2)** | |
| *D | 1. Boundary present on 1st Edition OS Map | 6 inch to one-mile |
| *D | 2. Boundary present on 2nd Edition OS Map | 6 inch to one-mile |
| | | |
| | **B3. Sites and Monuments Record (0,1)** | |
| *D | 3. Boundary connects to feature on SMR | Sites and Monuments Record can be found at www.archaeology.ie |
| | | |
| | **B4. Old Woodland Link (0,2)** | |

| | | |
|---|---|---|
| *D | a Boundary connects to woodland on 1st edition OS | |
| | b Boundary shown as treeline on 1st edition OS | |
| | | |
| | **C._Adjacent Land Classification (1+) &** | Record the Fossitt (2000) habitat (to the greatest level of detail possible) for land on both sides of the hedge |
| | | |
| | **D._Habitat Link Classification (1+)** | This category is primarily applicable to the ends of the hedge. If the hedgerow links at any other point with any other listed habitat that is not recorded in C this should also be recorded. A 'link' is applicable only where the hedge physically borders or runs in to another habitat type. Where a break of 5 metres or less, such as a gateway, occurs between the hedge and the other habitat, treat this as being linked. Where the canopies of trees in the hedge and the other habitat meet (often over distances of 10m +), include as a link. Likewise, if a ditch continues past the hedge to link up with, for example, a watercourse, record as a link. |
| | a arable (BC) | |
| | b improved grassland (GA) | |
| | b1 neglected pasture (GA) | |
| | c semi-natural grassland (GS) | |
| | d non-native woodland (WD) | |
| | e semi-natural woodland / scrub (WN) | |
| | f scrub/transitional woodland (WS) | |
| | g curtilage/built land (BL) | |
| | g3 curtilage/built land (BL3) | BL3 Buildings and artificial surfaces |
| | h peatlands (P) | |
| | i lake/pond (FL) | |
| | j watercourse (FW) | |
| | k other (target note) | |
| | m hedgerow (WL1 or WL2) | |
| | n earthbank (BL2) | |
| | o re-colonising bare ground (ED3) | |
| | | |
| *D | **D3._Designated Site (0,1)** | Record if hedgerow is within or immediately adjacent to any designated site. |
| | 1 Annex 1 habitat | |
| | 2 designated site | NHA, SAC, SPA layers can be found at http://www.npws.ie/protectedsites/ and at http://maps.biodiversityireland.ie/Maps.aspx |

| | | |
|---|---|---|
| | 3 designated woodland | |
| | | |
| | **E._Boundary Function (1)** | This refers specifically to the functionality of the hedge line as a farm / field boundary. Does the same stock have simultaneous access to land on both sides of the hedge? An active boundary must be stockproof, irrespective of the condition of the hedge. A redundant boundary may not necessarily be redundant for shelter or other functions. |
| | 1 hedge redundant | |
| | 2 active boundary | |
| | | |
| | ***Construction*** | |
| | | |
| *D | **F._Outline (1)** | Assess whether the hedge runs in a straight line or has a more curved or irregular plan. This may best be noted from the map. |
| | a linear | |
| | b non-linear | |
| | | |
| | **G1._Linearity_of_Shrubs_ (1)** | |
| | 1 Single Line Hedge | where the linearity of the hedgerow stems is principally defined by a single line |
| | 2 Double Line Hedge | where the linearity of the hedgerow stems is principally defined by a two separate and distinct lines |
| | 3 Random Line | Where the hedgerow stems do not appear to follow any distinct linear pattern record |
| | | |
| | **G2._Bank,_Wall,_Shelf (1)** | |
| | 1 Bank | |
| | 2 Wall | |
| | 3 Shelf | |
| | 0 none of the above features | |
| | | |
| | **G3._Drain (1,2)** | |
| | a External Drain | Double Ditch should be recorded as a_a |
| | b Internal Drain | |
| | c Internal Path, Track-way, etc. | Where this category is recorded structural, management and floristic recording should be made on the hedge on the side of the lane nearest to the randomly selected point that identified the hedge |
| | 0 none of the above features | |

| | | |
|---|---|---|
| | | |
| | **G4._Boundary Classification (1)** | Fossitt classification of recorded feature |
| | 1 WL1 | Hedgerow |
| | 2 WL2 | Treeline |
| | | |
| | **H._Bank,Wall,Shelf_size__ (1)** | The height of these features should be estimated as the average along the length of the hedge. Record the height above the general ground level of the top of the earth or stone bank (also called ditch!). Take care not to record the bank height from the level of bottom of shallow drains. A stone-breasted bank, containing earth / clay, should not be confused with a stone wall. A shelf is where the ground level is different between the two sides of the hedge (often in roadside situations). The height of a shelf is the difference between the two levels. |
| | a < 0.5m | |
| | b 0.5 – 1 m | |
| | c > 1m | |
| | d not applicable | |
| | | |
| | **I Drain Size (1)** | Drains tend to be approximately square in cross section. The measurements denote width and depth of the drain. An assessment based on volume should be made for very wide, shallow drains or very deep, narrow drains. |
| | 1 not present | |
| | 2 small (<0.5m) | |
| | 3 medium (0.5 – 1m) | |
| | 4 large (>1m) | |
| | | |
| | **I1._Drain_Wet/Dry (0,1)** | |
| | a dry ditch / drain | |
| | b wet ditch / drain | |
| | | |
| | ***Structure/Condition*** | For structural attributes the recording should be taken as an average for the hedge length as a whole. With the exception of Category *M* this average should not include the gaps in the hedge. |
| | | |
| | **J Profile (1)** | The cross-sectional profile of the hedge |

| | | |
|---|---|---|
| | a remnant | The remains of what used to be a hedge, has no consistent profile. A remnant hedge is generally indicated by a (broken) line of mature or senescent plants in tree, rather than shrub form. Almost invariably has a high percentage of gaps, although may have bits of shrubby growth (including brambles) along its length. Once the remains of a hedge covers <25% of a boundary, it is no longer classed as remnant and is not recorded (including for extent). *For a remnant hedge only record categories A-J, M,O, R, and U-Y.* |
| | b relict (derelict) | Where shrubs and thorns of the hedge component have mostly grown up into trees, no longer displaying shrubby, dense growth form in the bottom 1-2 metres of the hedge. Plants have potential for rejuvenation. |
| | c boxed / A shape | Has been cut into some form of a box- or A -shape, even if the last one or two years growth since cutting does not give the impression of a straight, neat, clipped hedge. 'Boxed' does not necessarily mean cut down low, hedges can be cut quite high (up to around 2 metres or more). |
| | d overgrown/irregular | This type will have more of a base structure than type b. |
| | e. top heavy / undercut | Hedges that have been managed in the lower section and allowed to grow up and out on top. |
| | f straight sided | A hedge that has been completely breasted (side cut) but not topped |
| | g wind-shaped | Shaped by the effects of strong prevailing winds. |
| | | |
| | **J1._Profile_base_suffix (0,2)** | |
| | a losing basal structure | Where many of the shrubs of the hedge component do not display a horizontal mesh of branches in the lowest 1m; most of the lower portion of stems are visible (unless obscured by herbage/ground flora). |
| | b outgrowths at base | Where shrubs / scrub are spreading laterally in to the verge alongside the base over the majority of the length. This is most commonly seen where blackthorn, gorse or damson plants are suckering out from the base of the hedge. |
| | | |
| | **K Height (1)** | This is estimated as an average over the whole length of the hedge to best fit classes. Where there is a distinct tree layer the measurement is taken as the height of the woody shrub layer. For managed hedges – 'height' should be the height at the last trimming/cutting point; otherwise the recorded height category could vary dependent on the time of year the hedge is surveyed. |
| | 1 <1.5m | |
| | 2 1.5 – 2.5m | |
| | 3 2.5 – 4m | |
| | 4 4 - 5m | |
| | 5 5m+ | |
| | | |
| | **K1._Height_overhead_cables (0,1)** | |
| | a overhead wires/cables | |

| | | |
|---|---|---|
| | | |
| | **L Width (1)** | This is estimated as an average over the whole length of the hedge to best fit classes. |
| | a < 1m | |
| | b 1– 2m | |
| | c 2 – 3m | |
| | d 3 m+ | |
| | | |
| | **M.__%_of_Gaps_ (1)** | This is an assessment of the percentage of the length of the hedge that no longer has a cover of hedgerow shrubs. Gaps that are filled with brambles and /or non woody vegetation are still recorded as gaps |
| | 1 complete | |
| | 2 < 5 % gaps | |
| | 3 5 – 10 % gaps | |
| | 4 10 – 25 % | |
| | 5 25 – 50 % | |
| | 6 > 50 % | |
| | | |
| | **M1._Gaps_Specific_or_general (0,1)** | |
| | *a* general | Individual gaps < 5m |
| | *b* specific | Any individual gap >5m |
| | | |
| | **N Base Structure (1)** | Rampant growth of brambles and cleavers or other climbers in the base of the hedge can be deceptive regarding the density at the base of the hedge. Picture the density in winter when foliage is absent for a more accurate assessment of base structure. |
| | a open / translucent | Little or no horizontal mesh of branches of woody shrubs in the bottom metre. |
| | b scrawny, semi-translucent | More light/ vegetation than hedge growth. The horizontal mesh of branches or bushy growth of hedging shrubs at base of the hedge is unlikely to prevent movement of stock through the hedgerow. |
| | c semi-opaque | More hedge growth than light/ vegetation. |
| | d dense / opaque | Shrub growth and horizontal meshing of branches in the bottom metre, sufficiently dense to contain livestock. |
| | | |
| | **N1._Base_-_Vegetation (0,1)** | |
| | a vegetation | Record where the space in the lower 1m of the hedge is filled with growth of brambles or other herbage/ vegetation, etc. |

| | |
|---|---|
| | |
| **O._Bank_Degradation_Degree_ (1,2)** | |
| 1 not applicable | No bank, wall or shelf. |
| 2 none | |
| 3 severe | Degree of erosion or degradation - bare soil may be showing, root systems may be exposed. |
| 4 minor | |
| 5 drain blocked/waterlogged | |
| | |
| **O1._Bank_Degradation__Extent (1)** | |
| a general >10% | Damage occurs over >10% of the length of the hedge |
| b isolated | Damage occurs at up to 10% of the length of the hedge. |
| | |
| **P._Trees_Quantity (1)** | Should reflect where species have reached tree proportions (particularly for hawthorn) diameter at breast height (DBH >8cm). |
| a none | |
| b few up to 15% | |
| c scattered 15 – 30% | |
| d abundant 31-75% | |
| e line >75% | |
| | |
| **Q._Tree_Age_Composition (1)** | For the purpose of this survey, immature trees are defined as having a diameter at breast height (DBH) of no more than 8 cm. Planted saplings, whips, etc. that are clearly intended to be trees should be recorded as such. Some discretion is required on the part of the surveyor as long as the basis of discretion is explained for the benefit of those using the data. |
| 1 all mature | |
| 2 predominantly mature | |
| 3 predominantly immature | |
| 4 mixed age range | |
| 5 none | |
| | |
| **Q1. Tree Height (max) (1) &** | Record the maximum and minimum height for trees within the hedge. |
| | |
| **Q2. Tree Height (min) (1)** | |

| | | |
|---|---|---|
| | **a <3m** | |
| | **b 3-5m** | |
| | **c 5-10m** | |
| | **d 10-20m** | |
| | **e >20m** | |
| | | |
| | **R._Verge_/_Margin__Width (1)** | This refers to an uncultivated strip or undisturbed grassy margin alongside the hedge. In the case of tillage or arable land, this will be an unploughed/ unplanted strip (a sterile strip is not counted as a verge). In grassland situations a verge is where the edge of the field is clearly not seeded, managed, or utilised as the rest of the field, such as where grazers are excluded by a fence. A fenced off area in from a hedge should be counted, but a strip left after mowing for hay/silage should not. This should be clearly indicated by the surveyor. Record for both sides of the hedge. |
| | a < 1m | |
| | b 1 – 2m | |
| | c 2 – 4m | |
| | d 4m + | |
| | e none | |
| | | |
| | **R2._Verge_/_Margin_Degradation (0,2)** | Record for both sides of the hedge. |
| | 0 none | |
| | 1 poached within 2m | |
| | 2 ploughed within 2m | |
| | 3 herbicide use >20% | Herbicide use over >20% of the length of the side of the hedge. |
| | | |
| | **S._Vigour_(1,2)** | An assessment of the average amount of new growth (annual increment), in terms of protruding shoots, along the length of the hedge. |
| | a poor | This recording is appropriate where there are few new shoots, little annual increment, and /or shoots are weak or unhealthy looking. |
| | b average | |
| | c good | |
| | d poor in part | |
| | e basal decay | Evidence of dead wood in the base of hedgerow trees and shrubs. |
| | f. evidence of disease | This includes fungal disease, mildew, etc. |

| | | |
|---|---|---|
| | ***Management*** | |
| | | |
| | **U._Management_ (1+)** | |
| | a cut box profile | |
| | b cut 'A' shape | |
| | c cut on one side | |
| | d cut on both sides | |
| | e topped | |
| | f excavator | This applies where land excavator type machinery has been used for hedge management purposes. Usually this involves knocking over mature stems along the hedge line and compressing them. Occasionally just the side growth is 'folded' or 'tucked' back into the hedge. Both cases are identified by partially broken rather than cut wounds. |
| | g fully laid | |
| | h laid in part | This category applies where gaps have been dealt with by laying |
| | i coppiced | Cut no higher than 10cm from the ground |
| | j short term unmanaged | Applies where options a-i and m have not been implemented in the last 3-5 years. |
| | k long term unmanaged | Where there is no evidence of management activity in the last 5+ years. |
| | l infill planting | Evidence that young plants have been introduced into the hedge to fill gaps. |
| | m pruned | Selective cutting of individual hedgerow plants. |
| | n other (target note) | |
| | o cropped | Cut between 10cm and 1m from ground (high coppicing.) |
| | | |
| | **U1._Management_-_out_of_season (0,1)** | |
| | a. out of season | Cut between 1st March and 31st August. |
| | | |
| | **U2._Management_Stage** | This is based on work done by Hedgelink in the UK, detailed in www.ptes.org/files/1353_hedgemanagementcycle.pdf |
| | **1** | Heavily over-trimmed with many gaps and sparse stems, their bases gnarled or rotting. |
| | **2** | Over-trimmed, infrequent stems too far apart to be 'let up' for laying. Hard knuckle at trim line, shrubs developing mushroom shaped growth form. |
| | **3** | Over-trimmed, frequent stems. Stems still healthy but require more height. Hard knuckle may be starting to form at trim line. |
| | **4** | Recently layed, coppiced, or planted hedgerow. |

| | | |
|---|---|---|
| | **5** | Healthy, dense, hedgerow with frequent stems and more than 2m in height. |
| | **6** | Either a) Hedgerow more than 3m high and trimmed on rotation, or b) May also be non-intervention hedge, having intentionally been left un-trimmed for several years. |
| | **7** | Hedgerow with frequent healthy stems more than 4m high. |
| | **8** | Mature tall hedgerow with spreading tops. Stems still healthy (although they may be infrequent) but too large (more than 18cm in diameter) for laying. |
| | **9** | Over-mature hedgerow with tops dying back, collapse possible. Perhaps becoming dominated by tree species. |
| | **10** | Hedge developed into line of trees. |
| | | |
| | **V._Management_Method_ (1+)** | This must be determined by examining the cuts at the hedge front over which machinery has passed. If a hedge clearly has been managed but the surveyor is unsure as to the means employed, record as 7, 'unsure'. |
| | 1 flail | |
| | 2 circular saw | |
| | 3 bar cutter | |
| | 4 hand tools | |
| | 5 excavator | |
| | 6 other | |
| | 7 unsure | |
| | 8 not applicable | |
| | | |
| | **W._Evidence_of_Rejuvenation_-_Past (1,2)** | Laying is detected by looking in at the hedge stems to see if any are growing horizontally, or at an upward angle with lesser shoots / stems growing vertically from these. Often it can be seen where the hedge was laid as long as several decades ago. Sometimes branches can have a horizontal growth form as a result of a reaction to trimming, this should not be confused with laid stems. Closer inspection should reveal the source of the action. The scar tissue around the clean wounds from hedge laying is significantly different from those caused by the action of machinery. Past coppicing is generally detected by multiple stems originating from the same point at or close to ground level of species where this would not be the typical habit. |
| | a no evidence | |
| | b past evidence of laying | |
| | d past evidence of coppicing | |
| | | |
| | **W1._Evidence_of_Rejuvenation_-_Recent** | |

| | | |
|---|---|---|
| | c recent evidence of laying | Within the last 5 years. |
| | d recent evidence of coppicing | |
| | | |
| | **X Fencing (1)** | Record for both sides of the hedge. |
| | 1 none | |
| | 3 electric | |
| | 4 post & wire | |
| | 5 sheep wire | |
| | 6 timber fence | |
| | 7 concrete post and rail | |
| | | |
| | **X3._Fencing__wire_to_stems** | |
| | 2 fixed to stems | Record if wire is fixed to hedgerow stems irrespective of other fencing. |
| | | |
| | **Y Ground Flora (1,5)** | |
| | d noxious weeds | Record the following on the DAFOR scale<br>▪ Common ragwort (*Senecio jacobea*)<br>▪ Spear thistle (*Cirsium vulgare*)<br>▪ Creeping or field thistle (*C. arvense*)<br>Two species of dock: the curled dock (*Rumex crispus*) and the broad-leaved dock (*Rumex obtusifolius*). |
| | e nutrient rich >20% | >20% of ground layer dominated by nutrient rich species – nettles, docks, cleavers (*Galium aparine*). |
| | f use of herbicide | >10% of ground layer affected. |
| | h. alien invasive species | Record presence of alien invasive species, primarily Japanese Knotweed, Giant Rhubarb, Spanish Bluebell and Himalayan Balsam. See also; http://invasivespeciesireland.com/most-unwanted-species/established/terrestrial/?pg=1 |

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# Appendix 3 - Results

| Hedgerow Survey 2025 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hedge Reference** | **01A** | **01B** | **02A** | **02B** | **03A** | **03B** | **04A** | **04B** | **05A** | **05B** | **06A** | **06B** | **07A** | **08A** | **08B** | **09A** | **09B** | **10A** | **10B** |
| **Date of Recording** | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May | 13-May |
| **Length of Hedge (m)** | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m |
| **Surveyors** | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC | P.McC |
| **Start Point to start of 1st 30m strip** | 14 | 14 | 22 | 22 | 42 | 42 | 22 | 22 | 32 | 32 | 79 | 79 | 18 | 40 | 40 | 32 | 32 | 9 | 9 |
| **End of 1st 30m to start of 2nd 30m strip** | 12 | 12 | 24 | 24 | 17 | 17 | 57 | 57 | 39 | 39 | 65 | 65 | | 39 | 39 | 32 | 32 | 20 | 20 |
| **End of 2nd 30m to End Point** | 14 | 14 | 17 | 17 | 18 | 18 | 27 | 27 | 17 | 17 | 59 | 59 | 19 | 41 | 41 | 66 | 66 | 11 | 11 |
| **Corine** | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture | Pasture |
| **Soil Type** | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley | Groundwater Gley |
| **a1. Altitude min. (m)** | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| **a2. Altitude max.(m)** | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| **b1. Aspect Side 1** | W | W | W | W | S | S | S | S | E | E | W | W | N | NW | NW | W | W | N | N |
| **b2. Aspect Side 2** | E | E | E | E | N | N | N | N | W | W | E | E | S | SE | SE | E | E | S | S |
| **B. History** | Farm boundary | Farm boundary | Historical | Historical | Historical | Historical | Historical | Historical | Historical | Historical | Farm boundary | Farm boundary | Internal | Farm boundary | Farm boundary | Internal | Internal | Farm boundary | Farm boundary |
| **B1. History Road / Stream** | road | road | x | x | x | x | x | x | x | x | road | road | x | road | road | x | x | x | x |
| **B1a. Road Class** | R – Regional | R – Regional | x | x | x | x | x | x | x | x | R – Regional | R – Regional | x | R – Regional | R – Regional | x | x | x | x |
| **B2 History Ordnance Survey** | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | ndary on 1st & 2nd E | x | x | ndary on 1st & 2nd E | ndary on 1st & 2nd E | dary on 1st & 2nd E | dary on 1st & 2nd E | ndary on 1st & 2nd E | x | x | x | x |
| **B3 Sites and Monuments Record** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **B4 Old Woodland Link** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **C1. Adjacent Land Class Side 1** | BL3 | BL3 | BC | BC | BC | BC | ED2 | ED2 | BL3 | BL3 | BL4 | BL5 | GA | BL3 | BL4 | GA | GA | GA | GA |
| **C2. Adjacent Land Class Side 2** | ED2 | ED2 | BC | BC | BL2 | BC | GA | GA | GA | GA | GA | GA | GA | GA | GA | GA | GA | GS | GS |
| **D1. Habitat Link Class End 1** | WD | WD | GS | GS | BL2 | BL3 | GA | GA | GA | GA | WS | WD | GA | WD | WD | WD | WD | GA | GA |
| **D2. Habitat Link Class End 2** | GS | GS | BC | BC | BC | BC | WS | WS | GA | GA | WS | WD | WD | WD | WD | GA | GA | BL3 | BL3 |
| **E. Boundary Function** | active | active | active | active | active | active | active | active | active | active | active | active | redundant | active | active | active | active | active | active |
| **F. Outline** | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear | linear |
| **G1. Linearity of Shrubs** | Random Line | Random Line | Single Line | Single Line | Random Line | Random Line | Single Line | Single Line | Random Line | Random Line | Random Line | Random Line | Single Line | Random Line | Random Line | Double Line | Double Line | Single Line | Single Line |
| **G2. Bank, Wall, Shelf** | None | None | None | None | Bank | None | None | None | None | Bank | None | None | None | Bank | Bank | None | None | None | None |
| **G3. Drain** | none | none | Internal Drain | Internal Drain | Internal Drain | Internal Drain | Internal Drain | Internal Drain | Internal Drain | Internal Drain | none | none | Internal Drain | none | none | Internal Drain | Internal Drain | Internal Drain | Internal Drain |
| **G4. Fossit Class** | WL2 | WL2 | WL2 | WL2 | WL2 | WL2 | WL2 | WL1 | WL1 | WL2 | WL2 | WL2 | WL1 | WL1 | WL2 | WL1 | WL1 | WL1 | WL1 |
| **H. Bank,Wall,Shelf size** | n/a | n/a | n/a | n/a | > 1m | n/a | n/a | n/a | n/a | < 0.5m | n/a | n/a | n/a | > 1m | > 1m | n/a | n/a | n/a | n/a |
| **I. Drain Size** | n/a | n/a | large (>1m) | large (>1m) | large (>1m) | large (>1m) | large (>1m) | large (>1m) | medium (0.5 – 1m) | medium (0.5 – 1m) | n/a | n/a | small (<0.5m) | small (<0.5m) | small (<0.5m) | large (>1m) | large (>1m) | large (>1m) | large (>1m) |
| **J. Profile 1** | op heavy / undercu | op heavy / undercu | irregular/ freeform | irregular/ freeform | irregular/ freeform | irregular/ freeform | op heavy / undercu | irregular/ freeform | irregular/ freeform | irregular/ freeform | op heavy / undercu | op heavy / undercu | remnant | op heavy / undercu | op heavy / undercu | relict (derelict) | relict (derelict) | boxed / A shape | boxed / A shape |
| **J. Profile 2** | op heavy / undercu | op heavy / undercu | irregular/ freeform | irregular/ freeform | irregular/ freeform | irregular/ freeform | op heavy / undercu | irregular/ freeform | irregular/ freeform | irregular/ freeform | op heavy / undercu | op heavy / undercu | remnant | op heavy / undercu | op heavy / undercu | relict (derelict) | relict (derelict) | boxed / A shape | boxed / A shape |
| **J1. Profile base suffix** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **K. Height** | 5m+ | 5m+ | 5m+ | 5m+ | 5m+ | 4 - 5m | 5m+ | 2.5 – 4m | 2.5 – 4m | 1.5 – 2.5m | 5m+ | 5m+ | 1.5 – 2.5m | 5m+ | 5m+ | <1.5m | <1.5m | 2.5 – 4m | 2.5 – 4m |
| **K1. Height o/head cables** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **L. Width** | 3 m+ | 3 m+ | 2 – 3m | 2 – 3m | 3 m+ | 2 – 3m | 2 – 3m | 2 – 3m | 2 – 3m | 2 – 3m | 3 m+ | 3 m+ | 1– 2m | 3 m+ | 3 m+ | 1– 2m | 1– 2m | 1– 2m | 1– 2m |
| **M. % of Gaps** | 5 – 10 % gaps | < 5 % gaps | complete | complete | complete | complete | < 5 % gaps | 25 – 50 % | 25 – 50 % | complete | < 5 % gaps | < 5 % gaps | > 50 % | < 5 % gaps | < 5 % gaps | 5 – 10 % gaps | 5 – 10 % gaps | complete | complete |
| **M1. Specific or general** | General | General | x | x | x | x | General | General | General | x | General | General | General | General | General | General | General | x | x |
| **N. Base Structure** | semi-opaque | semi-opaque | dense / opaque | dense / opaque | dense / opaque | dense / opaque | semi-opaque | semi-opaque | semi-opaque | dense / opaque | semi-opaque | semi-opaque | semi-opaque | dense / opaque | dense / opaque | dense / opaque | dense / opaque | dense / opaque | dense / opaque |
| **N1. Base - Vegetation** | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation | vegetation |
| **O. Bank Degradation Degree** | n/a | n/a | n/a | n/a | None | n/a | n/a | n/a | n/a | Minor | n/a | n/a | n/a | Minor | n/a | n/a | n/a | n/a | n/a |
| **O1. Bank Degradation Extent** | x | x | x | x | x | x | x | x | x | General >10% | x | x | x | General >10% | x | x | x | x | x |
| **P. Trees Quantity** | line >75% | line >75% | abundant 31-75% | abundant 31-75% | abundant 31-75% | abundant 31-75% | abundant 31-75% | scattered 15 – 30% | scattered 15 – 30% | scattered 15 – 30% | line >75% | line >75% | line >75% | line >75% | line >75% | few up to 15% | none | scattered 15 – 30% | scattered 15 – 30% |
| **Q. Tree Age Composition** | redominantly immatu | redominantly immatu | predominantly mature | predominantly mature | predominantly mature | predominantly mature | predominantly mature | all mature | predominantly mature | mixed age range | predominantly mature | predominantly mature | all mature | predominantly mature | predominantly mature | predominantly mature | predominantly mature | predominantly mature | predominantly mature |
| **Q1. Tree Height (max)** | 10-20m | 10-20m | 5-10m | 5-10m | 10-20m | 5-10m | 5-10m | 10-20m | 5-10m | 10-20m | 10-20m | 10-20m | >20m | 10-20m | 10-20m | 3-5m | none | 3-5m | 3-5m |
| **R. Verge / Margin Width Side 1** | 2 - 4m | 2 - 4m | 1 – 2m | 1 – 2m | 4m + | 4m + | < 1m | 1 – 2m | < 1m | < 1m | < 1m | < 1m | none | 1 – 2m | < 1m | < 1m | < 1m | < 1m | < 1m |
| **R2. Verge / Margin Side 1 Degradation** | x | x | ploughed < 2m | ploughed < 2m | x | ploughed < 2m | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **R3. Verge / Margin Width Side 2** | 1 – 2m | 1 – 2m | 1 – 2m | 1 – 2m | 2 - 4m | 1 – 2m | 1 – 2m | 1 – 2m | < 1m | 2 - 4m | 1 – 2m | 1 – 2m | none | < 1m | < 1m | < 1m | < 1m | < 1m | < 1m |
| **R4. Verge / Margin Side 2 Degradation** | x | x | ploughed < 2m | x | x | ploughed < 2m | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **S. Vigour (ASH DIEBACK)** | good | good | good | good | good | good | good | good | good | good | good | good | poor in part | good | good | good | good | good | good |
| **U. Management** | cut on one side | cut on one side | short term unmngd | short term unmngd | long term unmngd | short term unmngd | cut on one side | cut on both sides | long term unmngd | long term unmngd | cut on one side | cut on one side | long term unmngd | cut on one side | cut on one side | cut on both sides | cut on both sides | cut on one side | cut on one side |
| **U1. Management - out of season** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **U2. Management Stage** | ure tall; unsuitable fo | ure tall; unsuitable fo | 10.Line of trees | 10.Line of trees | 10.Line of trees | ure tall; unsuitable fo | ure tall; unsuitable fo | ure tall; unsuitable fo | ure tall; unsuitable fo | 10.Line of trees | 10.Line of trees | 10.Line of trees | 10.Line of trees | 10.Line of trees | 10.Line of trees | ver-trimmed, well sto | ver-trimmed, well sto | y, dense,frequent sto | y, dense,frequent sto |
| **V. Management Method** | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure | unsure |
| **W. Evidence of Rejuvenation - Past** | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence | No evidence |
| **W1. Evidence of Laying - Recent** | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **X. Fencing Side 1** | timber fence | timber fence | post & wire | post & wire | post & wire | post & wire | none | none | post & wire | post & wire | timber fence | timber fence | post & wire | timber fence | timber fence | post & wire | post & wire | electric | electric |
| **X1. Fencing Side 2** | none | none | none | none | none | none | none | electric | none | none | timber fence | timber fence | post & wire | post & wire | post & wire | electric | electric | none | none |
| **X3. Fencing wire to stems** | x | x | x | x | x | x | x | x | x | x | x | x | fixed to stems | x | x | x | x | x | x |
| **Y. Ground Flora** | average | average | species rich | species rich | species poor | species poor | average | average | average | alien invasive species | average | average | nutrient rich >20% | average | average | average | average | average | average |

| Hedge Reference | 01A | 01B | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 06A | 06B | 07A | 08A | 08B | 09A | 09B | 10A | 10B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gaps** | | | | | | | | | | | | | | | | | | | |
| **SHRUB Layer (Domin Scale)** | | | | | | | | | | | | | | | | | | | |
| Corylus_avelana HAZEL | 4 | 4 | | | | | | | | | | | | | | | | | |
| Crataegus_monogyna HAWTHORN | | | 4 | 5 | 4 | 4 | 3 | 2 | 2 | 2 | 3 | 2 | 6 | 3 | 3 | 1 | | 6 | 6 |
| Fraxinus_excelsior ASH | | | 6 | 4 | 4 | 4 | 2 | 4 | 6 | 3 | | | 6 | | | | | | |
| Ilex_aquifolium HOLLY | | | | | | | | | | | | | | | | | | | |
| Prunus_spinosa BLACKTHORN | | | | | | | 2 | 4 | | | | | | | | | | | |
| Sambucus_nigra ELDER | | | | | | | | | | | | | | | | | | | |
| Sorbus_aucuparia ROWAN | | | | | | | | | | | | | | | | | | | |
| Ulex_europaeus GORSE | | | | | | | | | | | | | | | | | | | |
| Salix_spp. WILLOW Present_Absent | | | | | | | | | | | | | | | | | | | |
| Salix_spp. WILLOW Total | | | | 2 | | 1 | | | | | | | | | | | | | |
| Salix_aurita EARED WILLOW | | | | | | | | | | | | | | | | | | | |
| Salix_caprea GOAT WILLOW | | | | | | | | | | | | | | | | | | | |
| Salix_cinerea GREY WILLOW | | | | 2 | | 1 | | | | | | | | | | | | | |
| Salix_cinerea_ssp._oleifolia RUSTY WILLOW | | | | | | | | | | | | | | | | | | | |
| Non-ntv_Salix_spp. Present_Absent | | | | | | | | | | | | | | | | | | | |
| Salix_spp. NON NATIVE Total | | | | | | | | | | | | | | | | | | | |
| Salix_alba* WHITE WILLOW | | | | | | | | | | | | | | | | | | | |
| Salix_fragilis* CRACK WILLOW | | | | | | | | | | | | | | | | | | | |
| Salix_viminalis* OSIER WILLOW | | | | | | | | | | | | | | | | | | | |
| Acer_pseduplatanus SYCAMORE | | | | | | | | | | | | | | | | | | | |
| Fagus_Sylvatica_BEECH | | | | | | | | | | | | | | | | | | | |
| Lonicera_nitida* DWARF BOX | | | | | | | | | | | | | | | | | | | |
| Prunus_domestica WILD PLUM | | | | | | | | | | | | | | | | | | | |
| Symphoricarpos_albus SNOWBERRY | | | | | | | | | | | | | | | | | | | |
| Alnus_glutinosa ALDER | | | | | | | | | | | | | | | | | | | |
| Betula_spp. BIRCH Present_Absent | | | | | | | | | | | | | | | | | | | |
| Betula_spp. BIRCH Total | | | | | | | | | | | | | | | | | | | |
| Betula_pendula | | | | | | | | | | | | | | | | | | | |
| Betula_pubescens | | | | | | | | | | | | | | | | | | | |
| Euonymus_europaeus_SPINDLE | | | | | | | | | | | | | | | | | | | |
| Ligustrum_vulgare WILD PRIVET | | | | | | | | | | | | | | | | | | | |
| Malus_sylvestris CRAB APPLE | | | | | | | | | | | | | | | | | | | |
| Prunus_avium WILD CHERRY | | | | | | | | | | | | | | | | | | | |
| Qurcus_spp. OAK SPECIES Present_Absent | | | | | | | | | | | | | | | | | | | |
| Qurcus_spp. OAK SPECIES Total | | | | | | | | | | | | | | | | | | | |
| Quercus_petrea SESSILE OAK | | | | | | | | | | | | | | | | | | | |
| Quercus_robur_ENGLISH OAK | | | | | | | | | | | | | | | | | | | |
| Ulmus_spp. ELM Present_Absent | | | | | | | | | | | | | | | | | | | |
| Ulmus_spp. ELM Total | | | | | | | | | | | | | | | | | | | |
| Ulmus_glabra WYCH ELM | | | | | | | | | | | | | | | | | | | |
| Ulmus_minor FIELD ELM | | | | | | | | | | | | | | | | | | | |
| Ulmus_procera ENGLISH ELM | | | | | | | | | | | | | | | | | | | |
| Ulmus_x_hollandica DUTCH ELM | | | | | | | | | | | | | | | | | | | |
| Viburnum_opulus GUELDER ROSE | | | | | | | | | | | | | | | | | | | |
| Cytisus_scoparius BROOM | | | | | | | | | | | | | | | | | | | |
| Myrica_gale BOG MYRTLE | | | | | | | | | | | | | | | | | | | |
| Pinus_sylvestris SCOTS PINE | | | | | | | | | | | | | | | | | | | |
| Populus_nigra BLACK POPLAR | | | | | | | | | | | | | | | | | | | |
| Populus_tremula ASPEN | | | | | | | | | | | | | | | | | | | |
| Prunus_Padus BIRD CHERRY | | | | | | | | | | | | | | | | | | | |
| Rhamnus_cathartica BUCKTHORN | | | | | | | | | | | | | | | | | | | |
| Ribes_nigrum BLACKCURRANT | | | | | | | | | | | | | | | | | | | |
| Ribes_uva-crispa GOOSEBERRY | | | | | | | | | | | | | | | | | | | |
| Rubus_idaeus RASPBERRY | | | | | | | | | | | | | | | | | | | |
| Sorbus_aria WHITEBEAM | | | | | | | | | | | | | | | | | | | |
| Taxus_baccata YEW | | | | | | | | | | | | | | | | | | | |
| Acer campestre FIELD MAPLE | 6 | 6 | | | | | | | | | 8 | 8 | | 8 | 9 | | | | |
| Other 2 | | | | | | | | | | | | | | | | | | | |
| Other 3 | | | | | | | | | | | | | | | | | | | |

| Hedge Reference | 01A | 01B | 02A | 02B | 03A | 03B | 04A | 04B | 05A | 05B | 06A | 06B | 07A | 08A | 08B | 09A | 09B | 10A | 10B | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CLIMBERS, (DAFOR Scale)** | | | | | | | | | | | | | | | | | | | | |
| Hedera_helix IVY | | | | | | | R | | O | O | | | O | | | | | A | A | |
| Rubus_fruticosa_spp BLACKBERRY | P | P | F | F | D | F | O | O | A | F | R | R | F | | | D | D | | | |
| Rosa_spp ROSE Present_Absent | | | | | | | | | | | | | | | | | | | | |
| Rosa_spp ROSE Total | | | | | | | | | | | | | | | | | | | | |
| Rosa_canina_agg. DOG ROSE | | | | | | | | | R | | | | | | | | | | | |
| Rosa_arvensis FIELD ROSE | | | | | | | | | | | | | | | | | | | | |
| Rosa_Pimpinellifolia BURNET ROSE | | | | | | | | | | | | | | | | | | | | |
| Lonicera_periclymenum_HONEYSUCKLE | | | | | | | | | | | | | | | | | | | | |
| Vaccinium myrtillus BILBERRY | | | | | | | | | | | | | | | | | | | | |
| Calluna_vulgaris HEATHER | | | | | | | | | | | | | | | | | | | | |
| Calystegia_sepium BINDWEED | | | | | | | | | | | | | | | | | | | | |
| Clematis_vitalba CLEMATIS | | | | | | | | | | | | | | | | | | | | |
| Solanum_Dulcamara BITTERSWEET | | | | | | | | | | | | | | | | | | | | |
| **TREES (Present / Dominant)** | | | | | | | | | | | | | | | | | | | | |
| Crataegus_monogyna HAWTHORN | | | P | P | P | P | D | D | D | P | P | P | P | | | P | | D | D | |
| Fraxinus_excelsior ASH | P | P | D | D | D | D | P | P | P | D | | | D | P | P | | | | | |
| Ilex_aquifolium HOLLY | | | | | | | | | | | | | | | | | | | | |
| Malus_sylvestris CRAB APPLE | | | | | | | | | | | | | | | | | | | | |
| Sorbus_aucuparia ROWAN | | | | | | | | | | | | | | | | | | | | |
| Prunus_avium WILD CHERRY | | | | | | | | | | | | | | | | | | | | |
| Alnus_glutinosa ALDER | | | | | | | | | | | | | | | | | | | | |
| Acer_pseduplatanus SYCAMORE | | | | | | | | | | | | | | | | | | | | |
| Aesculus_hippocastanum HORSE CHESTNUT | | | | | | | | | | | | | | | | | | | | |
| Fagus_sylvatica BEECH | | | | | | | | | | | | | | | | | | | | |
| Picea_spp. SPRUCE | | | | | | | | | | | | | | | | | | | | |
| Tilia_spp. LIME | | | | | | | | | | | | | | | | | | | | |
| Salix_spp. NON NATIVE Total | | | | | | | | | | | | | | | | | | | | |
| Non-ntv_Salix_spp. | | | | | | | | | | | | | | | | | | | | |
| Salix_alba | | | | | | | | | | | | | | | | | | | | |
| Salix_spp. WILLOW Present_Absent | | | | | | P | | | | | | | | | | | | | | |
| Salix_spp. WILLOW Total | | | | | | | | | | | | | | | | | | | | |
| Salix_caprea GOAT WILLOW | | | | | | | | | | | | | | | | | | | | |
| Salix_cinerea GREY WILLOW | | | | | | P | | | | | | | | | | | | | | |
| Salix_cinerea_ssp._oleifolia RUSTY WILLOW | | | | | | | | | | | | | | | | | | | | |
| Ulmus_spp. ELM Present_Absent | | | | | | | | | | | | | | | | | | | | |
| Ulmus_spp. ELM | | | | | | | | | | | | | | | | | | | | |
| Ulmus_glabra WYCH ELM | | | | | | | | | | | | | | | | | | | | |
| Ulmus_minor* FIELD ELM | | | | | | | | | | | | | | | | | | | | |
| Ulmus_procera ENGLISH ELM | | | | | | | | | | | | | | | | | | | | |
| Quercus_spp. OAK Present_Absent | | | | | | | | | | | | | | | | | | | | |
| Quercus_spp. OAK | | | | | | | | | | | | | | | | | | | | |
| Quercus_petraea SESSILE OAK | | | | | | | | | | | | | | | | | | | | |
| Quercus_robur ENGLISH OAK | | | | | | | | | | | | | | | | | | | | |
| Betula_spp. BIRCH Present_Absent | | | | | | | | | | | | | | | | | | | | |
| Betula_spp. BIRCH | | | | | | | | | | | | | | | | | | | | |
| Betula_pendula | | | | | | | | | | | | | | | | | | | | |
| Betula_pubescens | | | | | | | | | | | | | | | | | | | | |
| Corylus_avelana HAZEL | P | P | | | | | | | | | | | | | | | | | | |
| Euonymus_europaeus_SPINDLE | | | | | | | | | | | | | | | | | | | | |
| Malus_sylvestris CRAB APPLE | | | | | | | | | | | | | | | | | | | | |
| Acer campestre FIELD MAPLE | D | D | | | | | | | | | D | D | | D | D | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Other 2 | | | | | | | | | | | | | | | | | | | | |
| Other 3 | | | | | | | | | | | | | | | | | | | | |
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ESC Environmental Ltd

# Wildflower Meadow Conversion Specification

**St. Margarets,**

**Sandyhill,**

**County Dublin,**

**Ref: 2535 St. Margarets Meadow Conversion**

ESC Environmental Ltd

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**Client:** St. Margarets Recycling

**Site Location:** St. Margarets Recycling facility, Co Dublin

**Project Ref:** Wildflower meadow conversion

**Report nature:** Wildflower Meadow

**Date:** 19/05/25

**Prepared by:**

**Peter McCormick**

**Senior Environmental Scientist**

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# INTRODUCTION

## Scope

ESC Environmental Ltd were commissioned by Final County Council to carry out a report detailing how to convert a hardstanding yard at St. Margarets Recycling Facility, Dublin. This report is to assess the change of land use of the hard standing yard located at the site into a meadow for wildflowers. The location was assessed for the best methods to convert the yard while minimising dust as it is a large concern for Fingal County Council.

## Area Description

The site is located in the town land of Sandyhills, approximately 100 m south of St. Margarets village and 6 km southwest of Swords, County Dublin. The R122 passes in a north-south direction close to the western edge of the site, adjoining the boundary only at the northwestern corner, where the site entrance is located. The site area to be rewilded consists hardstanding which is a habitat of Buildings and artificial surfaces (BL3) classified as per “A Guide to Habitats in Ireland” by Fossitt (2000).

## Background

Peter McCormick carried out the site surveys for this project and prepared the report, and it was technically reviewed by Leo Cosgrove and Martin Leenheer. Peter McCormick has 7 years of experience working in environmental and ecological consultancy and holds a BSc (Hons) in Environmental Science from Sligo Institute of Technology. Peter has a broad experience in the environmental management and ecological field and is responsible for ecological studies at ESC Environmental. He has focuses on Appropriate Assessments, Mammal Risk Assessments, Invasive Species Monitoring Plans and other Ecological Services.

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# METHODOLOGY

## Site preparation

The process of converting the hardstanding yard to wildflower meadow consists of several steps. The first thing that should be done is the site needs to be cleared of any large objects such as rocks or debris and the site should be weeded as this would interfere with the future growth of the wildflowers in the meadow. As the site does not include any hard surfacing such as paving or concrete this should mean that minimal demolition is required.

Due to dust generation being a large concern on the site for Fingal County Council, numerous measures are being employed to reduce this potential. In the preparation of the site it has been deemed beneficial to the environment to not excavate the existing hardstanding surface, as this would be a large source of dust. The soil is to be imported and spread as a layer on top of the existing hardstanding. In tandem with this a water spray truck will be used to wet the ground during the process of moving soil to the site as this will keep dust generated from the machinery and processes to a minimum.

## Soil preparation

The type of soil used for the meadow should be considered as wildflowers typically prefer bare soil to grow, this will mean that any soil used will need to be free of any weeds to ensure that they have the best chance of growth. As wildflowers typically grow in low nutrient rich soil no fertilisers compost should need to be used, the soil type should ideally be well drained and be of a fine loose base to prevent water logging which would prevent flowers from growing.

## Depositing the soil

The existing gravel in the yard should provide adequate drainage for the new topsoil layer. The soil should be spread evenly on the site to prevent any waterlogging, and of a suitable level to meet the recommended planting depth of 15-20 cm for the Irish wildflowers. Machinery depositing the soil on site should minimise the amount of moving over deposited soil as this could lead to compaction.

## Planting

Before sowing wildflower and grass seeds it is important to rake the soil to ensure good contact between the seeds and soil for germination. This should be done when the soil is moist but not waterlogged and the ideal sowing season for Irish wildflower seeds is typically between spring and autumn to give the seeds a chance to germinate before the winter. After sowing the seeds, the soil should be continuously watered so it is moist but not waterlogged, this is mainly needed if there are long periods without rain.

Examples of Wildflower species to plant in the meadow would be:

- Agrimony (*Agrimonia eupatoria*)
- Red Clover (*Trifolium pratense*)
- Red Campion (*Silene dioica*)
- Corn Marigold (*Glebionis segetum*)
- Lady's Bedstraw (*Galium verum*)
- Nettle Leaved Ballflower (*Campanula trachelium*)
- Corn Poppy (*Papaver rhoeas*)
- Cornflower (*Centaurea cyanus*)
- Ox-eye Daisy (*Leucanthemum vulgare*)
- Wild Foxglove (*Digitalis purpurea*)
- Lesser Knapweed (*Centaurea nigra*)
- Wild Marjoram (*Origanum vulgare*)
- Meadow Cranesbill (*Geranium pratense*)
- Musk Mallow (*Malva moschata*)
- Ragged Robin (*Silene flos-cuculi*)

These flowers would be examples that can suit most soil types and are all part of the All-Ireland pollinator plan. Which will boost biodiversity and pollinator presence in the area.

## Maintenance

For the first year of the meadow being planted any weeds need to be removed to ensure that there is enough area for the wildflowers and grass to grow, the area should be watered without being overly saturated over any periods of intense dryness such as summer months. The flowers should not need any form of fertiliser as this is known to inhibit the growth of many wildflower species. After it is fully established the meadow should require minimal maintenance other than cutting 1-2 times a year when the plants have seeded and abated.

# Benefits

### Biodiversity

Wildflower meadows contain numerous plants which are important to pollinators such as bees and butterflies whose numbers have decreased due to land use changes throughout Ireland, they are essential to the ecosystems of Ireland and greatly benefit crop and plant reproduction. Meadows also attract numerous species of insects which in turn boosts the population of birds and other small mammals in the area many of which are endangered in Ireland.

### Environmental Impact

Wildflower meadows are a low maintenance area which improves the environment by boosting the soil quality in the area and acting as a natural carbon sink to aid in lowering emissions. They need no fertilization or chemical spraying which means there will be not adverse effects to local water systems or groundwater in the area. The plants also aid in drainage in the era and prevent other factors such as soil erosion which would lead to increased dust generation at the site.

# Conclusion

The conversion of the hardstanding yard to a wildflower meadow will greatly benefit the local biodiversity and ecosystem services for the site and surrounding area and will reduce the amounts of dust generated on site.