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ENVIRONMENTAL MANAGEMENT FOR BUSINESS

OPERATIONAL REPORT

FORGE HILL RECYCLING

FORGE HILL

CORK

Prepared For:

Forge Hill Recycling
Forge Hill,
Ballycureen,
County Cork

Prepared By: -

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June 2018

Project	Operational Report			
Client	Forge Hill Recycling Limited			
Report No	Date	Status	Prepared By	Reviewed By
	14/06/2018	Draft	Conor McGrath MSc	Jim O'Callaghan MSc, CEnv, MCIWM, IEMA
		Final		

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1. INTRODUCTION

Forge Hill Recycling operates its Materials Recovery Facility at Forge Hill, Cork under a Waste Licence (W0291-01) issued by the Environmental Protection Agency (the Agency). The current planning permission and waste licence limit the annual waste intake to 82,000 tonnes.

FHR intends to apply for approval to increase the waste acceptance rate to 100,000 tonnes and this will require a revision of the EPA licence. This Operational Report has been prepared in support of the licence review application. It describes the existing and proposed layout, plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity.

2. OPERATIONS

2.1 Site Layout

The site layout is shown on Drawing No. 14/4347-PL-01 covers. It occupies 10,110m^2 and comprises a waste processing building, which following the completion of the proposed development will be made up of four adjoining buildings, with annexes that house a compressor and maintenance area; two storey office, an electrical substation, a power wash storage hut; two weighbridges, paved open yards and a small unpaved area in the east of the site. A security fence surrounds the operational area and there are two entrances off Forge Hill Road.

FHR is authorised to accept and sort mixed dry recyclables which are then exported to overseas recycling facilities. Non-recyclable residues are sent to other waste management facilities in Ireland for processing to produce solid recovered fuel (SRF).

There is a palisade fence around the southern, eastern and western boundary of the operational area with fencing, a block wall and two security gates (north and south) on the western boundary. There is a CCTV surveillance and a monitored alarm system.

2.2 Operational Hours

Current waste acceptance hours are 06:30 and 23:30, Monday to Friday inclusive, 06:30 to 17:30 Saturdays and 0830 to 17:30 Sundays and Bank Holidays. Current operational hours are 06.00 and 24.00 Monday to Friday inclusive, 06:00 to 18:00 Saturdays and 08:00 to 18.00 Sundays and Bank Holidays.

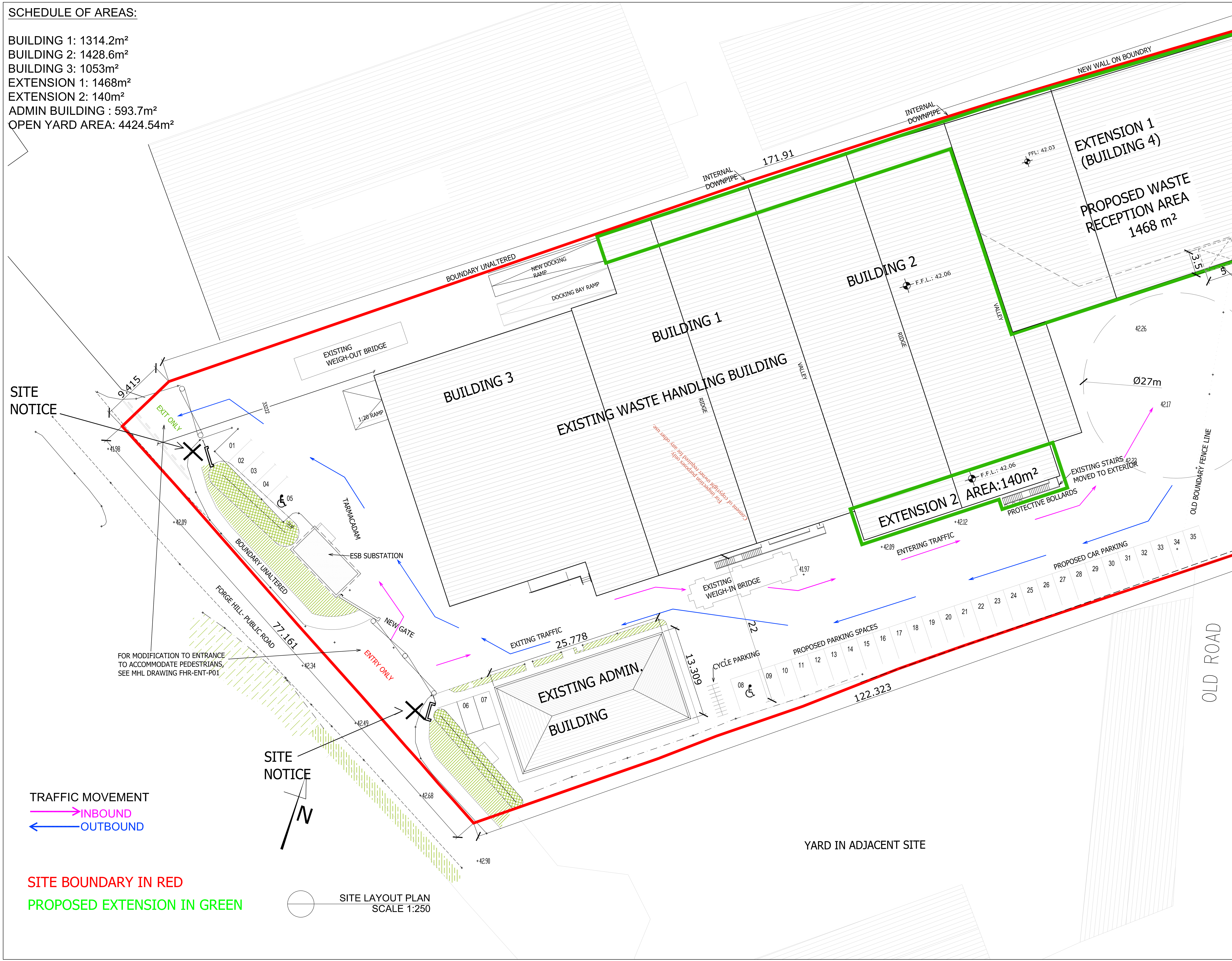
Approval is sought to accept waste and operate the facility 24 hours/day, 7 days a week. Waste acceptance will normally be between 06.00 and 24.00 hours; however on occasion waste may be accepted outside these hours. Similarly waste processing will typically be between 06.00 and 24.00 hours; however maintenance and cleaning will be carried outside these hours. It may on occasion be necessary to process waste between 00.00 and 06.00 hours to clear backlogs of waste that arise, for example due to plant breakdown.

2.3 Site Security

There is a palisade fence around the southern, eastern and western boundary of the operational area with fencing, a block wall and two security gates (north and south) on the western boundary. FHR has installed CCTV surveillance and a monitored alarm system.

SCHEDULE OF AREAS:

BUILDING 1: 1314.2m²
BUILDING 2: 1428.6m²
BUILDING 3: 1053m²
EXTENSION 1: 1468m²
EXTENSION 2: 140m²
ADMIN BUILDING : 593.7m²
OPEN YARD AREA: 4424.54m²



TRAFFIC MOVEMENT
INBOUND
OUTBOUND

SITE BOUNDARY IN RED
PROPOSED EXTENSION IN GREEN

SITE LAYOUT PLAN
SCALE 1:250

Notes:
ALL BOUNDARIES WHERE EXTENTION IS NOT BEING CONSTRUCTED RETAINED AS EXISTING

Notes:
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2. Do not scale, figured dimensions only to be taken.
3. Engineer to be informed of any discrepancies before work proceeds.
4. Contractor to check all dimensions and conditions on site before commencing works.
5. Drawing to be read in conjunction with current Building Regulations.
6. All components and materials to be installed fully in accordance with manufacturers instructions.

Revision	Comments	Date

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Project:
EXTENSIONS TO MATERIALS RECYCLING FACILITY AT FORGE HILL, CO. CORK

Client:
FORGE HILL RECYCLING LTD

Drawing Title:
SITE LAYOUT PLAN - PROPOSED NEW EXTENSIONS

Scale:	Date:	Revision
1:250 @A1	March 2018	R0
Drawn By: E.F.	Drawing Number: 14/4347-PL-01	

2.4 Services

The site has connections to the mains water supply, the municipal foul sewer and telecom services. There is an electricity substation at the western boundary and a ring main fitted with 4 No. fire hydrants.

There are three separate surface water drainage. Rainwater run-off from the building roofs discharges directly to a flow balancing tank in the west of the site. Run-off from the open yards, where contamination is unlikely to occur, is passed through an oil interceptor before it enters the balance tank. The water from the balance tank is piped to the tributary stream of the Tramore River, which is to the west of the site.

Rainwater run-off from the paved areas, where there is the potential for contamination to occur, discharges to the foul sewer via a second oil interceptor. Rainfall on the unpaved areas percolates to ground.

2.5 Facility Management

The Facility Manager has completed the FAS Training Programme and has 11 years' work experience in the waste industry. Facility staff include general operatives, plant drivers, and maintenance and office staff.

Condition 2 of the EPA licence requires FHR to adopt an Environmental Management System (EMS). FHR has prepared documented EMS which comprises an Environmental Manual and a series of EMS Procedures (EP01 to EP18) and EMS Records (ER01 to ER15). The EMS requires the implementation of an Environmental Management Programme and the development of a Schedule of Environmental Objectives and Targets that provides for a review of all operations and processes, including environmental training and awareness and emergency response actions.

2.6 Waste Types & Quantities

The current licence authorises the acceptance of 82,000 tonnes of municipal dry recyclable waste. It is proposed to increase the annual intake 100,000 tonnes. The sources are primarily households and commercial dry recyclable collections and the materials include mainly paper, card, plastic bottles, plastic film, steel cans and aluminium cans. The composition of the additional wastes will be the same as those already accepted. The actual amount of each particular waste type may vary but the overall maximum annual input will not be exceeded.

2.7 Waste Acceptance Procedure

All incoming waste is subject to documented waste acceptance procedures that have been approved by the EPA. Wastes are delivered by hauliers that have an up to date Waste Collection Permits. Waste is not accepted from either members of the public, or waste companies that do not have a contract with FHR.

All deliveries are weighed on the incoming weighbridge and the origin of the waste, the relevant List of Waste code and the weight are recorded. The driver is then directed to the intake area, where the wastes are off-loaded in a designated tipping area. The wastes are visually checked and any load deemed unsuitable is moved to a designated quarantine area for a more detailed inspection. If the materials are found to be unsuitable they are either returned to the customer, or sent to an appropriate waste management facility.

2.8 **Waste Processes**

The mixed wastes are mechanically separated by type (plastic, paper , cardboard, metals) and then baled and stored prior to transfer to other facilities for further processing, for example paper mills, steel mills, aluminium smelters and plastics factories. The processing is highly automated and manual picking is mostly limited to quality control. Non-recyclable residues are sent to other waste management facilities in Ireland for processing to produce solid recovered fuel (SRF).

4.13.1 Plant & Equipment

The processing plant, which has the capacity to process 23 tonnes/hour, comprises;

- Grab Machine – to load materials into the process line.
- Metering Bunker – to regulate the feed rate.
- OCC Screen – to remove large flat fractions from the mix .
- OCC Optical Sort – to capture cardboard.
- Ballistic Separator – to separate materials by size and shape (2D, 3D and fines).
- Optical Separators (5 No.) – to separate plastic and paper fractions using the reflection and refraction properties of each material.
- Eddy Current Separator – to capture non-ferrous metals, particularly aluminium cans.
- Over-band Magnet – to capture ferrous metals, particularly steel cans.
- Balers (2 No.) – to produce bales of paper, cardboard, plastic film, plastic bottles, aluminium cans, steel cans, etc.
- Forklifts (2 No.) – to move bales to storage and to haulage vehicles.
- Teleporter – to move material to the balers.

The proposed development will involve the provision of a below ground feed hopper and a conveyor in the new intake area that will transfer the mixed recyclables to the existing process line.

Those items of plant critical to the efficient and adequate processing of waste at the facility (including inter alia waste loading vehicles and ejector trailers) have a 100% duty and 50% standby capacity and provision has been made for contingency arrangements and/or back up and spares in the case of breakdown. FHR has a plant and equipment preventative maintenance programme, which is carried out on-on-site by a contractor.

2.9 **Waste Storage**

The licence requires the preparation of a waste storage plan that identifies discrete storage areas across the site and specifies the sizes of stockpiles, the recommended separation distances and the maximum amount of waste stored that can be stored on site at any one time. A copy of the revised storage plan that takes into consideration the proposed development is in Appendix 1. The maximum amount of waste on site at any one time will be 1,551 tonnes.

2.10 **Oil and Chemical Storage and Handling**

The diesel powered mobile plant are refuelled on-site as required by tanker fuel delivery trucks. Small quantities of oils such as hydraulic oil (1 No. 205 litre drum) lubricating oils and coolants (5 No. 205 litre drums) for plant maintenance purposes are stored in a bunded pallet in the power wash hut.

To provide a contingency back-up to the tanker deliveries it is proposed to provide a 1000 litre plastic, diesel storage tank that will be located in a bund in the south-east of the site. This will only be used to re-fuel the plant outside of the normal fuel tanker delivery hours. The tank will comply with the design requirements specified in Condition 3.6 of the licence.

The hydraulic and lubricating oils and coolants will be stored in a bunded pallet inside the processing building.

2.11 **Safety and Hazard Control**

FHR has adopted a Corrective and Preventive Action Procedure (EP07) and prepared a Safety Statement that identifies and evaluates the major on-site potential hazards and describes the control measures in place to mitigate the hazards associated with current operations.

All site staff receive the appropriate training for their particular roles. All personnel and visitors are obliged to comply with site guidelines regarding access to and from the facility and on-site traffic movement. All site personnel are provided with and are obliged to wear, personal protective equipment (PPE) appropriate for their particular functions. PPE includes facemasks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

2.12 **Abatement Controls and Treatment**

All waste reception, processing and storage are and will be carried out inside the processing building. The roller shutter doors are typically only opened to allow vehicles to enter and exit. These measures effectively mitigate noise and dust emissions and the control of odour emissions. The processing does not generate any wastewater and the building floors, which are concrete paved are regularly inspected and cleaned as required.

Rainwater run-off from the yards where there is the potential for contamination to occur is collected separately and passed through a Class 1 Oil Interceptor before being discharged to the Irish Water foul sewer. Run-off from the remaining yards passes through another Class I Interceptor before entering the flow balancing tank.

During extended periods of dry weather the open yards are cleaned using the on-site road sweeper to control dust emissions.

There are shut-off valves on the foul and surface water drainage systems that can be closed in the event of an incident that has the potential to generate significant volumes of contaminated water. Ramps at the entrance doors in conjunction with the surface water balance tank provide firewater retention capacity.

The licence specifies the environmental monitoring that must be carried out, which includes weekly surface water and foul water sampling and testing; quarterly dust deposition assessments; biannual groundwater monitoring and noise surveys as required. The results are submitted to the EPA, who also carry out independent monitoring as part of its regulatory compliance regime.

2.13 **Emergencies**

An emergency is an accident/incident that has the potential to result in environmental pollution and harm to human health & safety. The EPA licence requires FHR to ensure that an Emergency Response Procedure (ERP) is in place that addresses any emergency situation that may originate on-site. FHR has prepared an ERP and a copy (EP09) is in Appendix 3.

In the event of a breakdown of equipment or any other occurrence which results in the closure of the facility, any waste arriving at or already present will be transferred directly to alternative waste management facilities until such time as the FHR facility is fully operational. Spill kits are provided as required in vehicles and at appropriate locations around the facility to quickly contain any spills of potentially polluting liquids.

2.14 **Waste Generation**

The staff welfare facilities and office generate small amounts of food waste, plastic and paper. The plant and equipment preventative maintenance programme generates small amounts of waste oils.

2.15 **Nuisance Control**

FHR implements the nuisance control measures specified in the licence to mitigate the impacts of noise, dust, litter and odours and minimise the risk of site activities being a source of nuisance to neighbours and members of the general public. Site staff carry out daily nuisance and litter inspections and daily litter picks.

APPENDIX 1

Waste Storage Plan

Waste Storage Plan Rev.1.0

1. Purpose

The purpose of this Plan is to achieve and maintain compliance with Condition 8.11 of W0291-01 in relation to the storage of waste. It is an addendum to the FHR Waste Storage Plan (November 2017) to reflect the proposal to increase the annual waste intake from 82,000 tonnes to 100,000 tonnes and the associated infrastructural works.

2. Scope

The Plan applies to all waste storage activities at the Forge Hill facility

3. Responsibilities

It is the responsibility of the Site Manager and/or Deputy to ensure this Plan is adhered to at all times.

It is the responsibility of the EHS Manager to ensure the Plan is communicated to the operatives and drivers and that the appropriate training is provided them.

It is the responsibility of the EHS Manager to revise and update the Plan in accordance with the EPA requirements. All revisions/updates shall be submitted to the EPA for approval before any changes to the agreed Plan are made.

4. Associated Documents

Conditions 9.5 and 8.11 of W0291-01

FHR Waste Storage Plan November 2017

FHR Firewater Risk Assessment December 2017

FHR Closure and Decommissioning Management Plan December 2017.

The EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, 2013

The EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016.

6. Site Layout

The site covers 10,110 m^2 and comprises a waste processing building made up of four adjoining buildings (1-4), two storey office, an electrical substation, two weighbridges and paved open yard. A security fence surrounds the operational area and there are two entrances off Forge Hill Road. There is a firewall between Building I and 3 and between Buildings 2 and 4. Rainwater run-off from paved areas where there is the potential for rainwater run-off to become contaminated is discharged to foul sewer. Run-off from the yard areas where there is a low risk of contamination discharges to a stream to the west of the site.

7. Waste Activities

The incoming mixed wastes are mechanically separated by type (e.g. plastic, paper, cardboard, metals) and the recyclables are baled and stored prior to transfer to other facilities for further processing. Non-recyclable residues are bulked up and sent to other waste management facilities for further treatment. All waste handling is carried out inside the buildings. All waste storage with the exception of baled ferrous and non-ferrous metals and non-recyclable MSW residues, is confined to inside the processing building.

8. Waste Storage Areas

8.1 The waste storage areas are shown on Drawing No. 14/4347-PL-04 with details of the maximum stockpile sizes specified in Table 1.

8.2 Combustible materials shall be stored in separate stockpiles to reduce the risk of fires spreading.

8.3 All stockpiles shall be maintained such that they are higher than 4m and do not exceed the maximum volumes specified in Table 1.

8.4 A separation distance of 6m shall be maintained between the paper bale stockpile and the plastic bale stockpile in Building 3. Baled metal cans will be stockpiled in this gap as this material is non-combustible and will act as a fire barrier

8.5 A separation distance of 6m shall be maintained between the open stockpiles of mixed dry recyclables in Building 4.

9. Waste Quantities

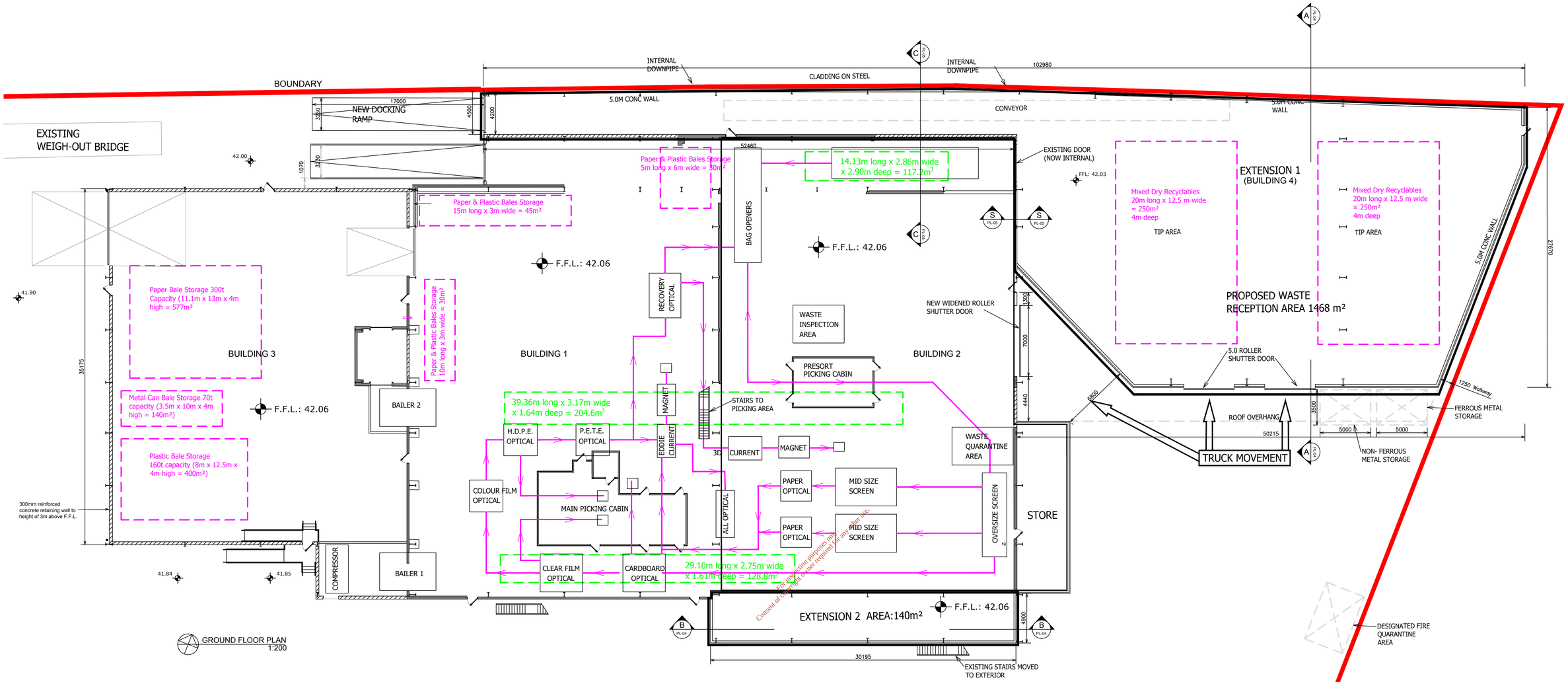
The maximum amount of waste on-site at any one time shall be 1,551 tonnes, comprising approximately 816 tonnes of baled dry recyclables 615 tonnes of loose mixed recyclables and 120 tonnes of baled metal cans,

10. Fire Quarantine Area

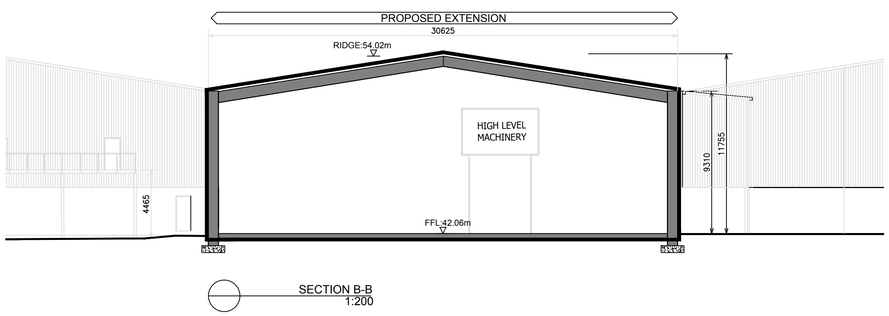
The fire quarantine area shall be not less than 6m from the building and shall not obstruct any exit routes. It area shall be kept available at all times for use if a hot load is imported or if a hotspot is identified in a stockpile and turning or digging out are considered to be suitable corrective measures.

Table 1 Maximum Planned Storage of Waste on Site

Location of Waste	Tonnes	Length (m)	Width (m)	Height (m)	Area (m^2)	Volume (m^3)	Material
Quarantine Area (Building 1)	1	2	2	1	4	4	Residual MSW
Inspection Area (Building 4)	5	3	3	2.3	9	21	Mixed Dry Recyclables
Input Storage Area (Building 4)							
Stockpile 1	250	20	12.5	4	250	1000	Mixed Dry Recyclables
Stockpile 2	250	20	12.5	4	250	1000	
Inspection Area (Building 1)	5	3	3	2.3	9	21	Mixed Dry Recyclables
Input Storage Area (Building 1)	100	20	10	2.1	200	417	Mixed Dry Recyclables
Waste on Process Line (Buildings 1 & 2)	10	n/a	n/a	n/a	n/a	42	Mixed Dry Recyclables
Paper & Card Storage (Building 2)	95	15.3	3	4	46	183	Baled Paper & Cardboard
Plastic Storage (Building 2)	95	20	3	4	60	238	Baled Plastic
Metal Can Storage (Building 3)	70	10	3.5	4	35	140	Baled Metal Cans
Paper & Card Storage (Building 3)	300	13	11.1	4	144	577	Baled Paper & Cardboard
Plastic Storage (Building 3)	160	12.5	8	4	100	400	Baled Plastic
Ferrous Metal (Outside Building 4)	25	5	3.5	4	17.5		Baled Metal Cans
Non-Ferrous Metal (Outside Building 4)	25	5	3.5	4	17.5		Baled Metal Cans
Non-Recyclable Residues (Enclosed Trailer outside Building 1)	20	n/a	n/a	n/a	n/a		Residual MSW
Total	**1,551**					**4,343**	



GROUND FLOOR PLAN
1:200



SECTION B-B
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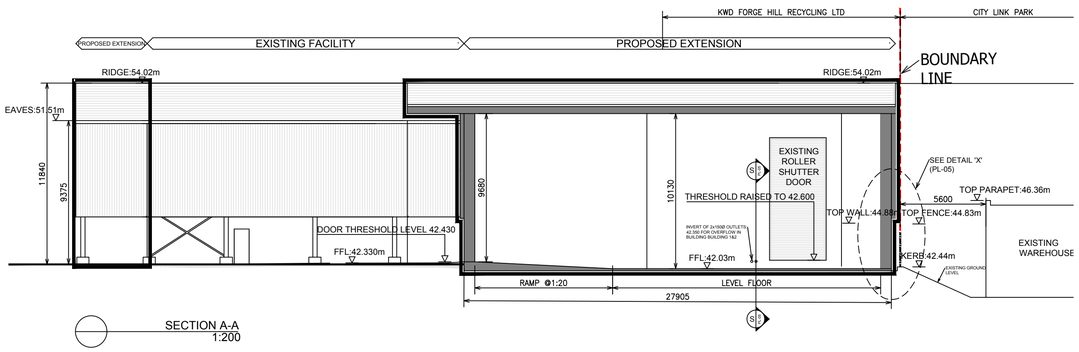

SECTION A-A
1:200

Notes:

ALL RIDGE AND EAVES HEIGHTS TO MATCH EXISTING

ALL FINISHES TO MATCH EXISTING

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Project:
EXTENSIONS TO EXISTING MATERIALS RECYCLING FACILITY AT FORGE HILL, CO. CORK

Client:
FORGE HILL RECYCLING LTD

Drawing Title:
GROUND FLOOR & SECTIONS

Scale:	Date:	Revision
1:200 @A1	March 2018	R0
Drawn By: E.F.	Drawing Number: 14/4347-PL-04	