



November 2016

DETAILED OF CHANGES TO W0185-01

RILTA ENVIRONMENTAL LTD.

## Detailed Report on Requested Changes to W0185-01 (Storage Only)

**Submitted to:**

Environmental Protection Agency  
on behalf of  
RILTA Environmental Limited  
Block 14A1, Grants Road  
Greenogue Business Park  
Rathcoole  
Co. Dublin

Report Number 1667271.R02.B.0

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Golder Associates - 1 copy





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## 1.0 INTRODUCTION

RILTA Environmental Limited (the 'Licensee') operates a Waste Facility under Waste Licence No. W0185-01 for the handling of hazardous and non-hazardous waste at Block 14A1, Greenogue Industrial Estate in Co. Dublin (the 'Facility').

It is the Licensee's intention to install a racking systems for the **storage only** of ash waste residue from the Dublin Waste to Energy (WtE) plant in Poolbeg, Dublin 4.

To determine if the proposed change can be accommodated by Technical Amendment In accordance with EPA Guidance for Licensees on requests for alterations to the installation/facility, this report includes the following:

1. Details of request change(s);
2. Reasons for the change(s) requested;
3. Details of any increase or changes in emissions resulting from the change(s); and
4. An assessment of the likely impacts of any increase/changes in emissions.

To address Point 1 above, Golder Associates (Golder) has prepared this report which provides details on the requested changes that the Licensee is seeking by way of Technical Amendment.

The current Facility layout is shown in **Drawing 01** provided in Appendix A.

## 2.0 INSTALLATION WORKS

The waste material for **storage only**, pending transfer, will consist of both flue gas residue and boiler ash (herein referred to as '*waste residue*'), produced by the Dublin Waste to Energy (DWtE) Plant located in Poolbeg, Co. Dublin.

The proposed installation works will comprise of:

- Installation of a pallet racking system for the warehouse; and
- Control measures to prevent fugitive emissions.

## 3.0 LIST OF DRAWINGS

**Table 1: List of Drawings**

Drawing Number	Title
1	Existing Site Layout
2	Proposed Site Layout
3	Proposed Pallet Racking System
4	Proposed Pallet Racking System – Elevations 1 to 4



## 4.0 DETAILS OF WASTE RESIDUE

The DWtE Plant will be operated under Waste Licence No. W0232-01. There will be three solid residues produced during operation:

- Bottom ash (not part of this TA submission);
- Boiler ash (included in this TA submission); and
- Flue gas treatment residues (included in this TA submission).

Table 2 below estimates the approximate quantities of waste residue (boiler ash and flue gas residues) which are expected to be stored at the Rilta Greenogue facility.

**Table 2: Estimated waste residue quantity and type**

Waste Residue Type	Approximate tonnes / annum
Boiler Ash	3,000
Flue Gas Treatment Residues	25,000
<b>Total</b>	<b>28,000</b>

The Licensee proposes to aid in the recovery of these waste residues by storing and transferring at their Greenogue Facility. The waste residues will be transported from the Rilta Facility Licence No. W0192-03 (subject to Technical Amendment) by waste contractors under the control of the Licensee, and stored at Rilta W0185-01 pending onward shipment for recovery.

### 4.1 List of Waste (LoW) Codes

It is proposed to add the following LoW Codes to Schedule A1 of Waste Licence No. W0185-01:

- List of Waste Code **19 01 07\*** - *'solid waste from gas treatment'*; and
- List of Waste Code **19 01 13\*** - *'fly ash containing dangerous substances'*

## 5.0 DETAILS OF INSTALLATION WORKS

### 5.1 General Facility Layout

**Drawing 02** depicts the proposed layout plan of the installation works and the extent of the Facility area which will receive and store the waste residues using a purpose built pallet racking system.

Rigid trucks will enter the facility through the main gate access off Grants Road, and will proceed to the weighbridge and report to reception / security. Trucks will then enter the warehouse where they will reverse up the ramp through the highlighted Entrance 1 and stop at the demarcated unloading area. Figure 1 below shows the Entrance 1 to the warehouse.

The sealed FIBCs containing the waste ash residues will then be offloaded and placed in the racking system for storage.



Figure 1: Warehouse/transfer station entrance for designated waste residue transfer area (external view)

## 5.2 Warehouse

The location of the racking system in the warehouse is currently obstructed by three portable containers, these will be relocated prior to commencement of installation works. A general clearance of the warehouse will also be undertaken to remove any items obstructing the installation of the racking bays. Figure 2 shows the location of portacabins that will be removed.



Figure 2: Portacabins to be removed to facilitate racking.

### 5.3 Services

There are existing services within the footprint of the installation works that will require relocation. Electrical fuse boards and fire water ducting are located in the southwest of the building. Services are also located along the south wall of the warehouse. Access and seclusion zones will have to be catered for to these services prior to installation.

### 5.4 Pallet Racking

Filled bulk bags arriving at the Facility will be stored on a racking system contained within the purpose built waste transfer building. **Drawings 03 and 04** show the proposed footprint and elevations for the proposed pallet racking system. The approximate height of the pallet system will be 9 m. Bulk bags will be stored until transported from the facility. Figure 3 below shows a typical FIBC pallet racking system.



Figure 3: Typical FIBC pallet racking system

## 6.0 MEASURES TO PREVENT FUGITIVE EMISSIONS

In keeping with the original waste licence application in 2002, all storage will be undertaken indoors to ensure no external fugitive emissions occur at the Facility once storage activities commence. These storage activities have been designed to effectively eliminate in so far as possible air and water releases. In order to further address the potential for fugitive/diffuse emissions, and meet the requirements of the existing Condition 7.4.2 (W0185-01), namely:

*‘Prior to the date of commencement of the waste activities at the facility, the licensee shall install and provide adequate measures for the control of odours and dust emissions, including fugitive dust emissions, from the facility’.....*

...the following additional measures are proposed to be incorporated into the design of the process to meet this Condition.

### 6.1 Sealed Bag Filling System

The bagging operation, which will be undertaken at Rilta Facility W0192-03 (subject to Technical Amendment), has been selected as it is both hygienic and dust free due to the sealed filling system. After filling is complete, the bag is closed automatically through stretching of the inlet spout at the off-site bagging plant. Two welding electrodes weld the inlet together. The welding time is adjusted in accordance with the quality of the bag. The unit is controlled with one or two pneumatic cylinders mounted on solid linear guides. Details of the welding arrangement are depicted in Figure 4 below.



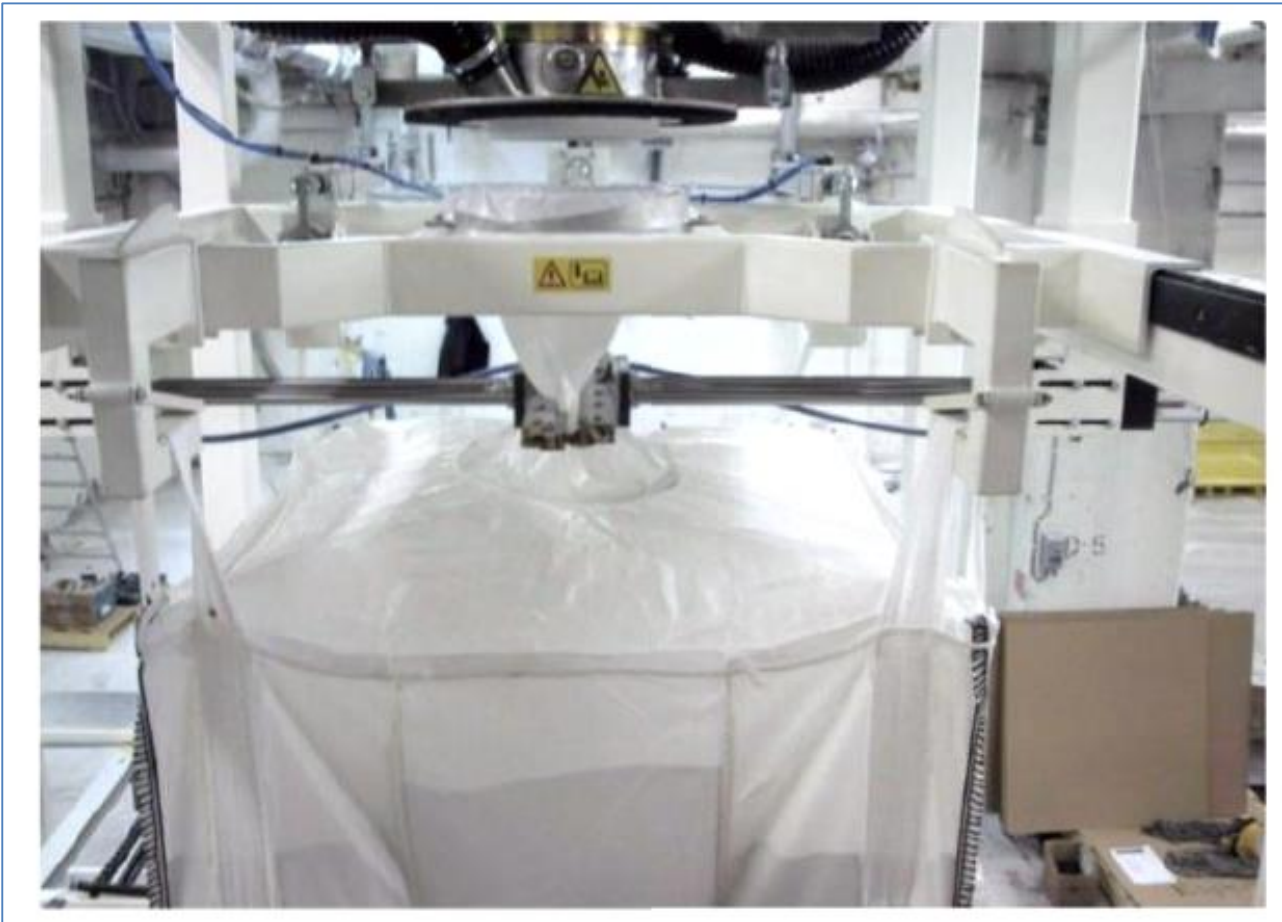


Figure 4: Automatic bag welder with welding in progress

This system is specifically designed to mitigate any potential fugitive emissions of dust during the filling and subsequent transfer for storage/onward shipping. By employing an automatic bag welder further ensures a dust free environment when handling filled bags. All FIBCs arriving at the Rilta Facility W0185-01 for storage will have been filled at the Rilta W0192-03 using the above system to ensure a dust free handling process at Rilta W0185-01.

## 6.2 FIBC Bags

The Flexible Intermediate Bulk Containers (FIBCs) will have a two loop system, and will be made of UV stabilised polypropylene which will be 100% recyclable. The fabric proposed will include a coating or laminate on the outside of the FIBC which will be non-permeable to air. This will protect the contents against air humidity and prevent the outflow of very fine materials. Furthermore the laminate provides the FIBC with additional protection in the event of unforeseen events such as the striking of the bag with pallet racking, or other bags/pallets when loading.

## 6.3 Fast shutting doors and loading bay seals

In accordance with Condition 7.4.2.1 of Licence W0185-01, all doors in the waste transfer building will be kept closed where possible. This will be achieved with the installation of fast shutting roller doors at all locations. To further meet the existing requirements of Condition 7.4.2.1, an inflatable loading bay seal (Figure 5) will be installed to ensure that a tight seal will exist between the truck being filled with FIBCs for onward transfer, and the building. This is an additional measure to control the potential for fugitive releases from the transfer building.



*Figure 5: Loading bay seal for safe loading*

## **6.4 Dust curtain**

In accordance with the existing Condition 7.4.2.1 of Licence W0185-01, dust curtains will be maintained on the entry/exit points from the waste transfer building.

## **6.5 Contingency/backup arrangements**

### **6.5.1 FIBC Tear/breach**

In the event of a breach/tear of an FIBC, the Licensee will have an industrial vacuum on-Site to clear up any fugitive emissions. This vacuum will have the following features:

- High vacuum pump;
- Ability to vacuum both dry & wet material;
- On board storage of hoses, pipes and tools for all clean-up situations;
- Hydraulically operated tailgate, tailgate lock and tipping; and
- Tool box.



Figure 6 below provides an example of such an industrial vacuum which will be available in the event of a bag connection failure.



Figure 6: Example of an industrial vacuum

## 7.0 ENVIRONMENTAL CONSIDERATIONS

### 7.1 Measures to deal with fugitive emissions

Section 6.0 of this Report provides details on the measures to be employed at the Facility to prevent the potential for fugitive dust emissions. Such measures are intended to meet the requirements of existing Condition 7.4.2 of Licence No. W0185-01.

### 7.2 Odour/Dust

The waste residue is odourless, and as a result there is little potential for increased odour emissions from the proposed **storage only** activities. It is further noted that operations have been undertaken at the Facility since 2004 and have not led to any complaints relating to odour.

As a failsafe, all doors and bays will be kept closed in accordance with Condition 7.4.2.1 of W0185-01. Good housekeeping in the vicinity of the waste transfer station will also keep dust levels to a minimum. All vehicles servicing the transfer station will be adequately covered/sealed. In addition, all bags once filled are sealed using a bag welding mechanism (See Section 6.1 above). For shipment, the bags will be loaded from the bay within loading bay seals.

Such measures will mitigate any potential nuisance associated with dust during transport / unloading and reloading for onward transfer.



### 7.2.1 Dust/Air monitoring

As part of the Licence W0185-01, the Facility will continue to carry out monitoring at four locations (D1, D2, D3 and D4) three times per year, in accordance with *Schedules C.2 Dust deposition limits, D.1.1 Monitoring locations and D.2 Dust Monitoring Frequency and Technique*.

In addition to the above external dust monitoring, it is proposed to carry out the following internal monitoring to provide additional safeguards with regard to the health and safety of workers:

- a) Baseline monitoring prior to the acceptance of ash waste residues for storage, locations to be agreed with the Agency;
- b) Personnel air monitoring quarterly once operations commence;
- c) Monitoring of parameters to be the same as those as set out in the Dublin WtE Facility Licence Ref. W0232-01;
- d) Method used shall meet the requirements of the "Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001" and associated 2016 Approved Code of Practice published by the Health Safety Authority. Monitoring shall be carried out by an independent laboratory agreed by the Agency; and
- e) Copies of all data gathered will be provided to the Agency within 10 days of receipt.

### 7.3 Ground Water

There are no direct emissions to groundwater. All activities will be undertaken indoors, in the purpose built waste transfer building which is previously licensed for the bulking and storage of hazardous materials for onward transfer.

### 7.4 Surface water

The Facility will not handle any liquid materials in during the storage activities, which will be undertaken indoors. All surface water runoff from tanker bays, vehicle parking and marshalling areas are currently directed through a Class 1 interceptor before discharging to surface water sewer. There will be no change to this configuration as a result of the requested changes in this document. Rainwater from buildings and offices is also directed to the surface water sewer. Wastewater drains to a 5 m<sup>3</sup> self-contained monitoring tank prior to discharge. Wastewater is only discharged to the sewer following confirmation that the discharge has met the requirements of *Schedule C.3: Emissions Limits for Foul Water Emissions to Sewer, D.1.1 Monitoring locations, and D.4.1 monitoring and frequency technique*.

The waste residue storage and transfer activity will not result in fugitive emissions to water. The main plant buildings are reinforced concrete with a sealant coating. No water or liquids, other than for plant and machinery maintenance, are used in the process. In any event, spill kits are available at the Facility. In addition, and as highlighted in Section 6.5.1 above, a vacuum tanker will be on-Site should quantities of waste residue be required for clean up in the event of an unforeseen spillage.

### 7.5 Noise

The waste residue storage racking system will be situated in an enclosed and purpose build waste transfer building and therefore there will be no significant impact on the local environment. The 2002 Waste Licence Application had envisaged plant with noise emissions in excess of 100dB(A). The proposed storage activities will be undertaken by standard fork lift trucks indoors. In addition, traffic movements (and resulting noise emissions) associated with the proposed changes are estimated to be 75% less than the original traffic movements submitted for grant of the waste licence.

In any event, as part of the existing license, the facility will continue to carry out monitoring in accordance with *Schedule C.1 noise emission, D.1.1. Monitoring locations, and D.3 Noise monitoring frequency and technique* to ensure there is no impact on the noise environment as a result of the requested changes.



## 8.0 SUSTAINABLE REUSE OF WASTE RESIDUE

Following the storage of waste residue at the Rilta Greenogue facility, the material will be shipped to a treatment facility in Norway for sustainable re-use. The waste residue will be used to neutralise sulphuric acid at the Langoya facility in Norway. Langoya is a small island dominated by a worked-out limestone quarry which is being reinstated as a nature reserve under licence from the Norwegian government (Figure 7).



*Figure 7: Proposed location for reuse of waste residue – Langoya Island, Norway*

The neutralised residue / acid mixture is being used as part of this reinstatement, and the facility has an approved R treatment code for this purpose. In addition, the facility has the following permits/licences/approvals:

- Operating/emission permit from Norwegian Pollution Control Authority, 4 June 2003, renewed May 2009;
- EMAS registered 1998-2004; and
- ISO 14001 certification from Feb 2004.

Figure 8 below depicts the island once rehabilitated in c. 2040.



Figure 8: Rehabilitated Langoya Island in 2040

## 9.0 REFERENCES

- 1) Waste Licence Register Number W0185-01
- 2) Section 76A(11) Amendment to Industrial Emissions Licence



## Report Signature Page

### GOLDER ASSOCIATES IRELAND LIMITED

Handwritten signature of Brian Keenan in blue ink.

Brian Keenan  
Senior Engineer

Handwritten signature of Barry Balding in blue ink.

Barry Balding  
Associate, Senior Geologist

Date 1 November 2016

BK/BB/pw

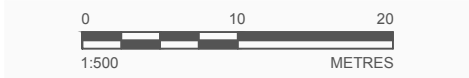
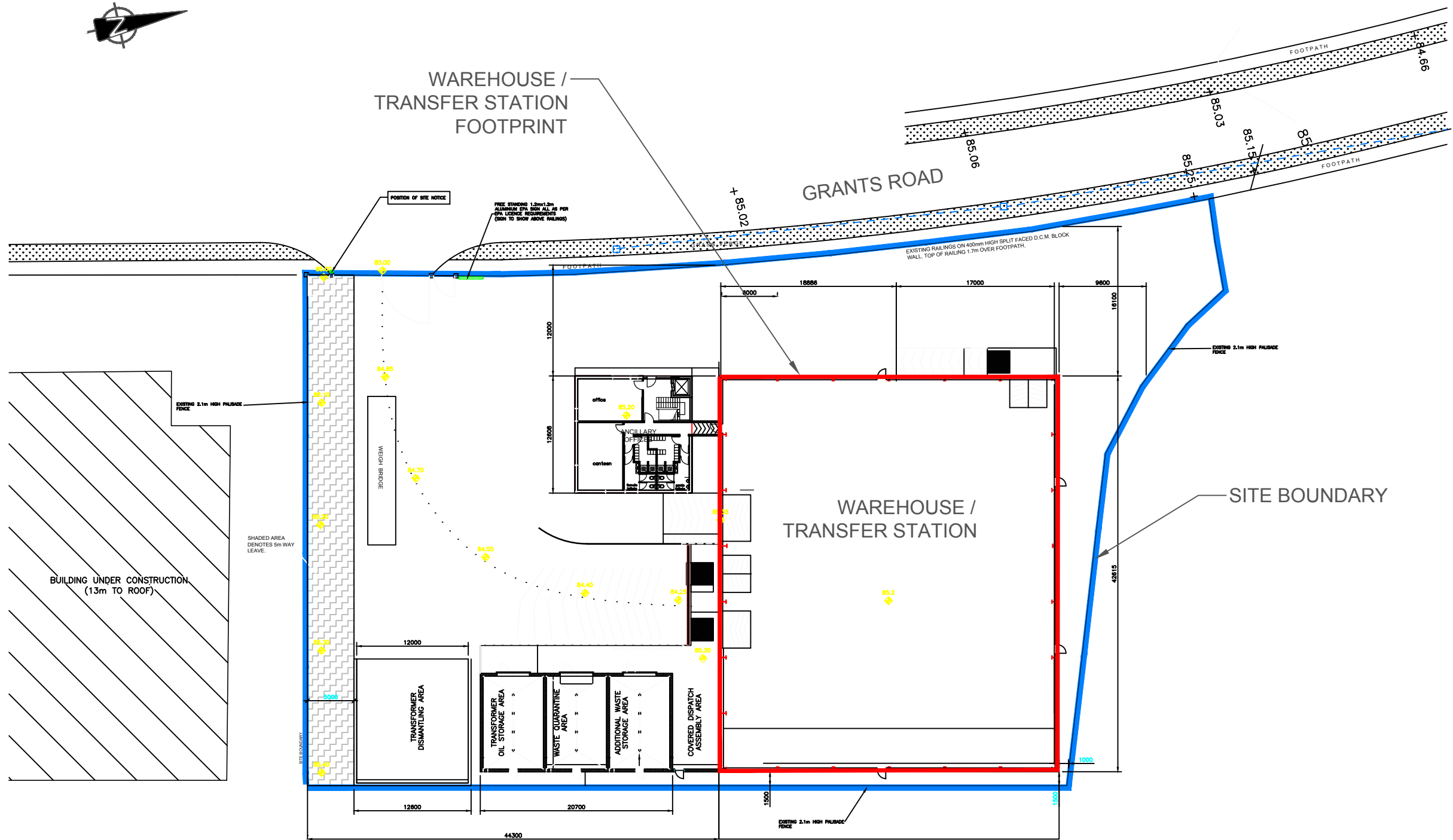
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# **APPENDIX A**

## **Drawings**





LEGEND	
	SITE BOUNDARY
	WAREHOUSE / TRANSFER STATION

CLIENT		PROJECT	
RILTA ENVIRONMENTAL LTD.		RILTA BLOCK 14A1 - STORAGE ONLY	
BLOCK 14A1, GRANTS AVENUE		TITLE	
GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN		EXISTING SITE LAYOUT	
CONSULTANT		PROJECT NO.	SCALE
YYYY-MM-DD	2016-10-27	1650556	1:500 @ A3
DESIGNED	Provided by Rilta	REV.	A
PREPARED	BMK	DRAWING	1
REVIEWED	CW		
APPROVED	CW		



25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3



Path: \\na1-s-main01\Company\PROJECTS\2016\1650556 - One51 - EHS11 - GRAPHICS5 WORKING DRAWINGS\Rilta - Block 14A1 - Ash Bagging Plant - File Name: Drawings 1 to 4.dwg

LEGEND	
	SITE BOUNDARY
	WAREHOUSE / TRANSFER STATION



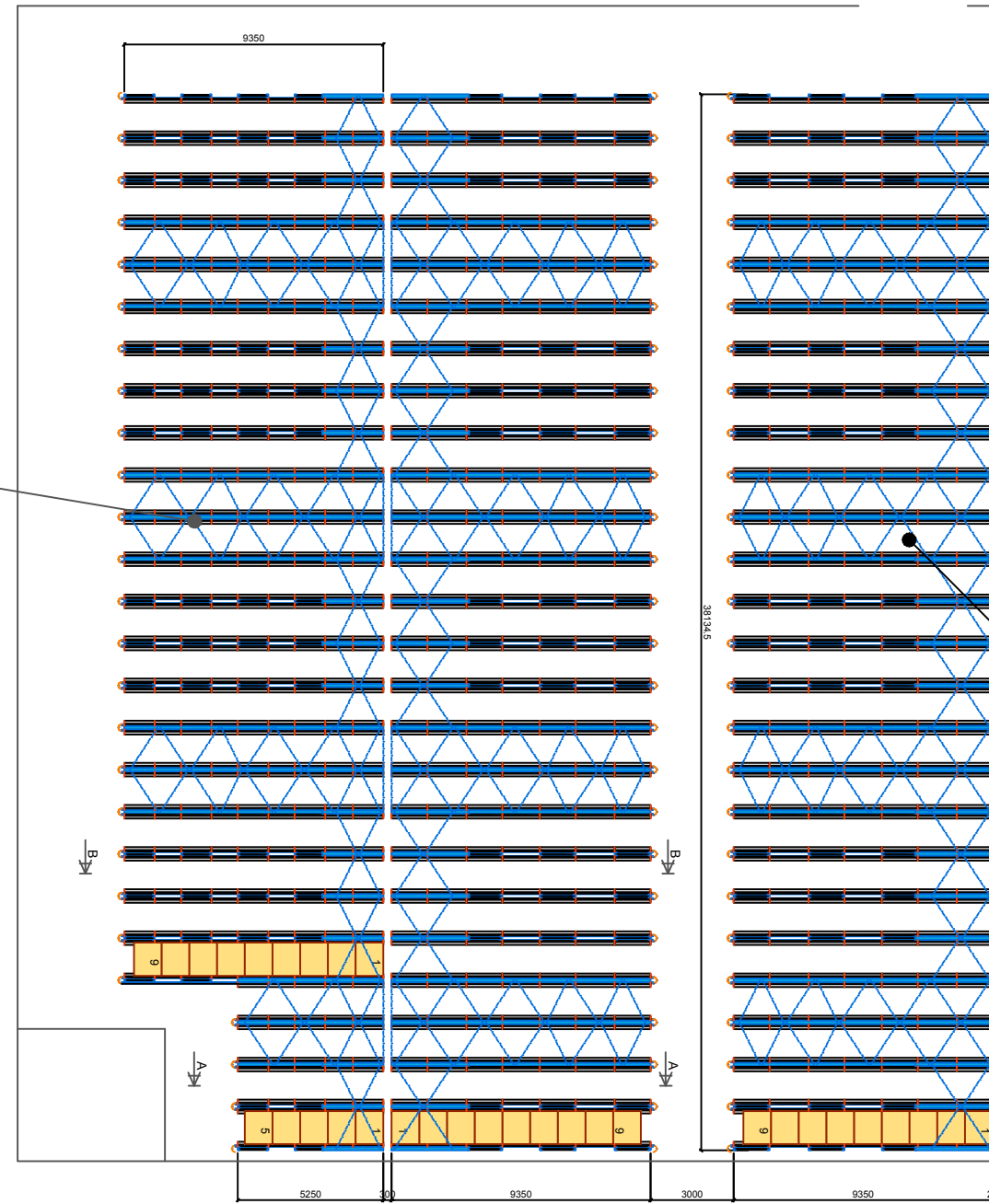
CLIENT	RILTA ENVIRONMENTAL LTD. BLOCK 14A1, GRANTS AVENUE GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN	
CONSULTANT	YYYY-MM-DD	2016-10-27
	DESIGNED	Provided by Rilta
	PREPARED	BMK
	REVIEWED	CW
	APPROVED	CW

PROJECT	RILTA BLOCK 14A1 - STORAGE ONLY		
TITLE	<b>PROPOSED SITE LAYOUT</b>		
PROJECT NO.	SCALE	REV.	DRAWING
1650556	1:500 @ A3	A	2



25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

PALLET RACKING SYSTEM



FOOTPRINT AREA AVAILABLE FOR PALLET RACKING = 1176m<sup>2</sup>  
HEIGHT OF PALLET RACKING IS 9.5m

PLAN VIEW OF PROPOSED PALLET RACKING LAYOUT



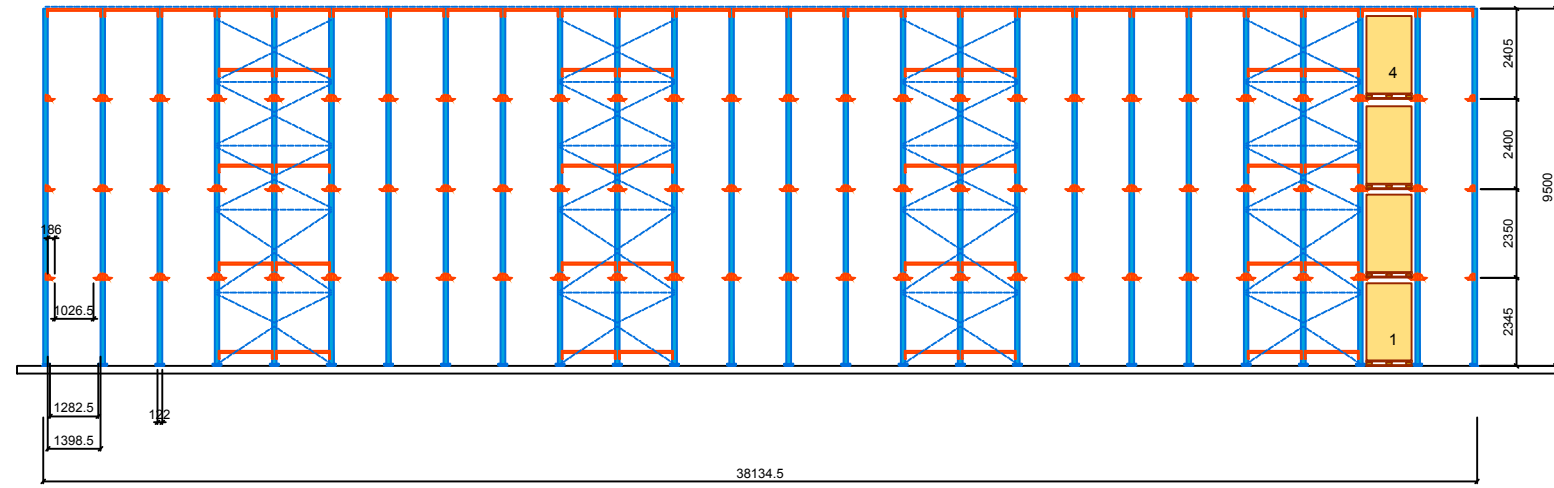
**NOTE**

See Drawing 4 for Elevations 1 to 4

CLIENT	RILTA ENVIRONMENTAL LTD. BLOCK 14A1, GRANTS AVENUE GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN	
CONSULTANT	YYYY-MM-DD	2016-10-27
	DESIGNED	Buttimer Engineering
	PREPARED	BMK
	REVIEWED	CW
	APPROVED	CW

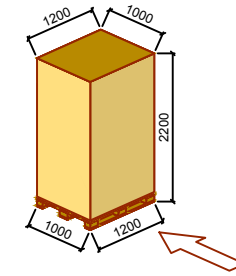


PROJECT	RILTA BLOCK 14A1 - STORAGE ONLY		
TITLE	<b>PROPOSED PALLET RACKING SYSTEM</b>		
PROJECT NO.	SCALE	REV.	DRAWING
1650556	1:250 @ A3	A	<b>3</b>



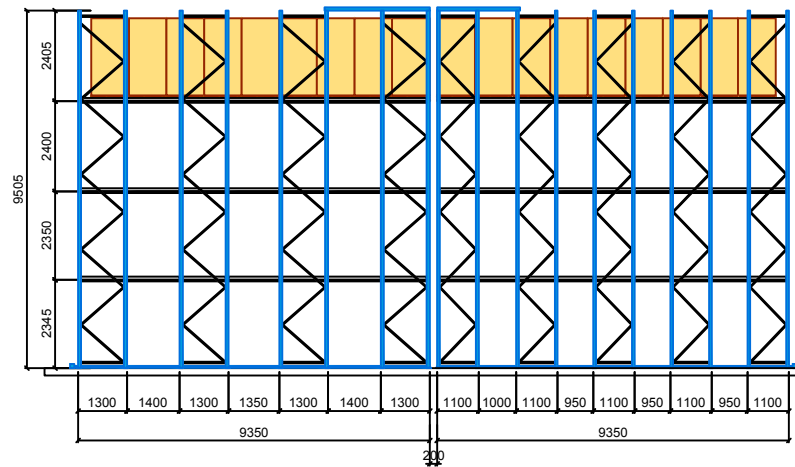
ELEVATION

LOAD UNIT: 1200 (KG)

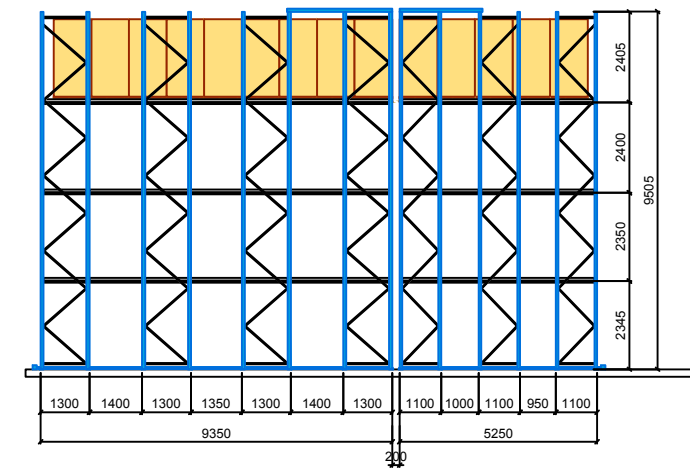


Total capacity: 2636 pallets

LOAD UNIT



SECTION B-B



SECTION A-A

NOTE

See Drawing 3 for Location of Elevations 1 to 4



CLIENT  
 RILTA ENVIRONMENTAL LTD.  
 BLOCK 14A1, GRANTS AVENUE  
 GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN

PROJECT  
 RILTA BLOCK 14A1 - STORAGE ONLY

CONSULTANT  
 YYY-MM-DD 2016-10-27  
 DESIGNED Buttimer Engineering  
 PREPARED BMK  
 REVIEWED CW  
 APPROVED CW

TITLE  
**PROPOSED PALLET RACKING SYSTEM - Elevations 1 to 4**  
 PROJECT NO. 1650556 SCALE 1:200 @ A3 REV. A DRAWING 4



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