SCHEDULE 14 - Basic Design Proposals

Minor Infrastructure

Contract Open-Windrow Composting Facility

1. General Purpose

The Compost Facility, is intended to be designed to receive and process by Composting 50,000 tonnes per annum (TPA) of Compostable Waste. This will be delivered by Refuse Collection Vehicles (RCVs) and HWRC rollonoff vehicles in a roughly 60:40 split in line with the project wasteflows. A typical RCV will be 24t Gross Vehicle Weight (GVW) carrying payloads of around 7 / 8 tonnes of recyclable materials. A rollonoff vehicle would be 32t GVW with approx 10t payload.

The facility is designed to facilitate removal of waste and composted material for onward disposal and / or utilisation in bulk trailers of up to 44t GVW with approx 15 - 20t payloads. The outputs will be typically 50% of the input by weight, in accordance with the PAS 100 standard. The surface area and Dutch barn for output materials dictate the storage available for materials.

The provision of an open windrow composting facility will include a concrete slab for material processing, access and parking, fencing and gates. A lagoon will be provided for the capture of surface water and re-use in the process.

Since the concrete slab will be impervious, it will also collect any leachate from the site. The discharge arrangement will be subject to detailed design and to be agreed with the Environment Agency in accordance with the Environmental Permit. However, since the process is likely to be a net water user for a significant part of the year, it may be based on the removal of excess by tanker during such occasions as it may be required.

The process is as described below, otherwise to be agreed with the Environment Agency in accordance with the Environment Permit.

2. The Process

The current design envisaged would process the waste as follows. It is designed to process and compost an input of garden waste organics generated primarily from HWRC recycling activities and WCA kerbside collection schemes.

The facility has been designed to handle around 50,000 tonnes per annum. Its design and operating evolution is based on other centralised compost sites operated by Veolia.

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Vehicles carrying green waste enter the site via the weighbridge located at the entrance, and proceed to the shredding area.

Once each vehicle empties its load of green waste as directed, the vehicles leave the site via the weighbridge.

A telehandler shovel forms temporary stockpiles with the garden waste, which is then transferred to the shredder. The shredder piles waste into windrows with a maximum height of around 3 - 4m. A specialist turner turns the windrows periodically, to mix and aerate the composting material.

At different stages of the process, the compost is monitored to determine levels of moisture, temperature, oxygen and pathogen content. On a regular basis temperature and percentage oxygen levels are recorded at intervals along the length of the windrow.

The material is kept for a minimum duration of seven days at a temperature of 60°C, to ensure that it passes PAS 100.

After 10 to 12 weeks of composting, during which time the material is reduced to approximately a third of its original volume, a loading shovel transfers the material to the refining screen. This screen separates the compost into fine and coarse grades. The fine material is stored on site to allow for maturation and stabilisation before collection or dispatch to users. The coarser material can be used as mulch, re-screened to different grades, or re-shredded and incorporated back into the composting process. Throughout the process, any water drained from the composting process is channelled into a water treatment area, where it will be treated and re-circulated to maintain moisture levels in the compost.

The final steps of the composting process aim to increase the quality of the product. The compost enters a final sorting process to ensure the absence of any solid contaminants and the compost is graded into particles of various sizes.

3. The Site and Facility

The site will have 2x18m weighbridges with associated weighbridge office. There will be a separate office building with the office for the site manager, a meeting room and mess room and amenity facilities for the site operatives.

The environmental monitoring arrangements, including measures to be provided to control windblown materials, vermin, odour, dust, and other environmental impacts are to be agreed with the Environment Agency in accordance with the Environmental Permit.

Sustainable construction principles will be incorporated in accordance with Good Industry Practice, subject to consideration of sustainability in accordance with the Principal Contract.

The access arrangements are yet to be determined.

Issue	Basic Design Assumption	Reference Document	Due Diligence clarification
Site Condition	Veolia Risk	n/a	None required as Veolia prepared to take Ground condition risk
Specification	The key parameters such as building size, finish and location will be shown on the reference drawings. The facility will be built to satisfy the Environment Agency requirements of an Environmental Permit as well as building regulations and other statutory requirements.		
Site Tenure	Sufficient interest in the site to allow the construction and commissioning of the proposed development. The site tenure will be in accordance with the attached lease documents attached in Schedule 8.		
Utilities	Not yet determined		
Planning permission	13 week determination period (no EIA required)		

Contract Transfer Station - Bassetlaw Area

1. General Purpose

The transfer station is designed to receive and handle 50,000 tonnes per annum (TPA) of residual waste and co-mingled dry recyclables (comprising paper, card, plastics, aluminium and steel cans). These will be delivered by Refuse Collection Vehicles (RCVs), typically of a 24t Gross Vehicle Weight (GVW) carrying payloads of around 7 / 8 tonnes of waste or recyclable materials.

The transfer station building will be designed with concrete pushwalls to allow for the transfer of material, distributed evenly between residual waste and dry recyclables, with storage of 2 days of inputs. Refer to drawings listed in the table below.

In addition the site will be able to receive, in an external de-watering bay, inputs from mechanical street cleansing vehicles. The detritus material will be delivered predominantly by 18t GVW sweeper vehicles with an approx. payload of 3 – 4 tonnes, to a bay 5.7m deep x 9.4m wide x 2.5m high concrete walls on 3 sides and dewatering drainage, suitable to hold up to 30t of material.

The facility is designed to facilitate removal of waste and recyclables for onward disposal and / or treatment in bulk trailers of up to 44t GVW with approx 15 - 20t payloads. It will be designed with concrete pushwalls to allow for the transfer of 330t per day, distributed evenly between residual waste and dry recyclables, with storage of 2 days of inputs.

2. The Site and Facility

The waste transfer building will be approximately 72m x 34m x 13m (at highest point), with standard cladding material and concrete/ block-work at lower level. Push-walls will be provided internally as appropriate.

The site will have 2x18m weighbridges with associated weighbridge office. This will be a two-storey building, a prefabricated unit approximately 9m x 2.5m x 6m high with the office for the site manager, and staff mess room and amenity facilities for the site operatives. The whole site will be fenced and gated.

Environmental controls and monitoring will be provided, to be agreed with the Environment Agency in accordance with the Environmental Permit. Similarly, suitable doors will be agreed with the Environment Agency in accordance with the Enviromental Permit.

The assumptions for earthworks and foundation design are in accordance with the operational life of the contract, subject to detailed design

Issue	Basic Design Assumption	Reference Document	Due Diligence clarification
Site Condition	Veolia risk.		None required as Veolia prepared to take Ground condition risk
Specification	The building will be capable of handling 50,000 tonnes per annum of recyclables and residual waste for Bulk Storage prior to haulage to final delivery point The key parameters such as building size, finish and location are shown on the reference drawings. The facility will be built to satisfy the Environment Agency requirements of a Standard Rules SR2008 No1 75kte Environmental Permit as well as building regulations and other statutory requirements.		
Site Tenure	Sufficient interest in the site to allow the construction and commissioning of the proposed development. The site tenure will be in accordance with the attached lease documents attached in Schedule 8.		
Utilities	Drainage and service connections can be made in the road immediately adjacent to the site.		
Planning permission		Granted 18th June 2014 1/14/00037/CDM	

Contract Transfer Station – Newark Area

1. General Purpose

The transfer station is designed to receive and handle 50,000 tonnes per annum (TPA) of residual waste and co-mingled dry recyclables (comprising paper, card, plastics, aluminium and steel cans). These will be delivered by Refuse Collection Vehicles (RCVs), typically of a 24t Gross Vehicle Weight (GVW) carrying payloads of around 7 / 8 tonnes of waste or recyclable materials.

The transfer station building will be designed with concrete pushwalls to allow for the transfer of material, distributed evenly between residual waste and dry recyclables, with storage of 2 days of inputs.

In addition the site will be able to receive, in an external de-watering bay, inputs from mechanical street cleansing vehicles. The detritus material will be delivered predominantly by 18t GVW sweeper vehicles with an approx. payload of 3 – 4 tonnes, to a bay 3.5m deep x 8m wide x 2.5m high with concrete walls on 3 sides and dewatering drainage, suitable to hold up to 30t of material.

The facility is designed to facilitate removal of waste and recyclables for onward disposal and / or treatment in bulk trailers of up to 44t GVW with approx 15 - 20t payloads**.** It will be designed with concrete pushwalls to allow for the transfer of 330t per day, distributed evenly between residual waste and dry recyclables, with storage of 2 days of inputs. Refer to drawings listed in the table below.

2. The Site and Facility

The waste transfer building will be an ‘L’ shape building comprising of 2 sections; Section 1 approximately 24m x 18m x 12m (at highest point), Section 2 approximately 22m x 41m x 12m (at highest point); with standard cladding material and concrete/ block-work at lower level. Push-walls will be provided internally as appropriate.

The site will have 2x18m weighbridges with associated weighbridge office, comprising a Portakabin type modular building, approx. 2.7m wide by 10.5m long with offices for the weighbridge operative and site manager with staff mess room and amenity area. See drawing listed in table below. The whole site will be fenced and gated.

Environmental controls and monitoring will be provided, to be agreed with the Environment Agency in accordance with the Environmental Permit. Similarly, suitable doors will be agreed with the Environment Agency in accordance with the Environmental Permit.

The assumptions for earthworks and foundation design are in accordance with the operational life of the contract, subject to detailed design

Issue	Basic Design Assumption	Reference Document	Due Diligence clarification
Site Condition	Veolia Risk		
Specification	The building will be capable of processing 50,000 tonnes per annum of recyclables and residual waste for Bulk Storage prior to haulage to final delivery point The key parameters such as building size, finish and location are shown on the reference drawings The facility will be built to satisfy the Environment Agency requirements of a Standard Rules SR2008 No5 75kte Environmental Permit as well as building regulations and other statutory requirements.		
Site Tenure	Sufficient interest in the site to allow the construction and commissioning of the proposed development. The site tenure will be in accordance with the attached lease documents attached in Schedule 8.		
Utilities	Drainage and service connections can be made in the road immediately adjacent to the site.		
Planning permission		Granted 20th October 2010 3/10/00743/CMA	

Contract Transfer Station – Ashfield and Mansfield Area

2. General Purpose

The Waste Transfer Station (WTS) is designed to receive and handle 75,000 tonnes per annum (TPA) of residual waste. This will be delivered by Refuse Collection Vehicles (RCVs), typically of a 24t Gross Vehicle Weight (GVW) carrying average payloads of around 10 tonnes. This equates to 3 tips per day per vehicle.

The transfer station building will be designed with concrete pushwalls to distribute evenly residual waste for processing, with storage for 1.5 days of inputs and 2 days for processed material.

The facility is designed to facilitate removal of processed waste for onward treatment and / or disposal in bulk trailers of up to 44t GVW with approx 20 - 25t payloads**.** From 1 April 2017 to 31 March 2020 the shredded waste will be baled and wrapped. Bales will be stored within the building for a maximum of 2 days under normal operations. From 2020 onwards the loose shredded waste will be stored in bays for onward transfer. The bays will be designed to allow for the transfer of up to 300t per day, with storage of 2 days of processed material. Refer to drawings listed in the table below.

2. The Site and Facility

The waste transfer building will be approximately 69m x 34.5m x 14m (at highest point), with standard cladding material. Push-walls will be provided internally as appropriate.

The site will have 2x18m weighbridges with associated weighbridge office, comprising a Portakabin type modular building, approx. 4m wide by 8m long with offices for the weighbridge operative. A further modular building on site (15m by 6.5m approx) will have an office for the site manager and site supervisor, a meeting room and a staff mess room and amenity area. See drawing listed in table below. The whole site will be fenced and gated.

The waste processing equipment is designed to process 25 TPH of MSW and comprises the following items:

a. Shredder – a Metso M&J 4000S-8 shredder complete with waste input hopper, hydraulic power pack, chassis and outfeed conveyor – to process a minimum of 25 TPH to a shred size of less than 300mm
b. Baler – a Unotech UPAMAT 120HS baler compete with infeed conveyor and overband magnet, fitted with a 5 plastic wire tying system,
c. Bale wrapper – a CrossWrap CW-D-2200-LW-750-1-5 automatic bale wrapping line complete with infeed and outfeed bale conveyors suitable for 1000-1400m length bales,
d. Control System – a central Safety and Sequential Integration System to link the above equipment into a production line by integrating their individual system safety and sequential controls.

Environmental controls and monitoring including fire detection and sprinklers inside the WTS will be provided, to be agreed with the Environment Agency in accordance with the Environmental Permit. Similarly, suitable doors will be agreed with the

Waste Planning Authority and Environment Agency in accordance with the Environmental Permit.

The assumptions for earthworks and foundation design are in accordance with the operational life of the contract, subject to detailed design

Issue	**Basic Design Assumption**	**Reference Document**	**Due Diligence clarification**
Site Condition	Veolia Risk		
Specification	The building will be capable of processing 75,000 tonnes per annum of residual waste for Bulk Storage prior to haulage to final delivery point The key parameters such as building size, finish and location are shown on the reference drawings The facility will be built to satisfy the Environment Agency requirements of a bespoke Environmental Permit as well as building regulations and other statutory requirements.	Welshcroft Close WTS – Building Elevations Welshcroft Close WTS – Building Floor Layout Plan Welshcroft Close WTS – Site Layout Plan	
Site Tenure	Sufficient interest in the site to allow the construction and commissioning of the proposed development. The site tenure will be in accordance with the lease documents attached in Schedule 8.		
Utilities	Drainage and service connections can be made in the road immediately adjacent to the site.		
Planning permission		Granted 27th April 2016 4/V/2015/0711	