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WASTE RESOURCE MANAGEMENT

**WALSALL COUNCIL**

# MIDDLEMORE LANE WTS AND HWRC

# OPERATING TECHNIQUES

**JUNE 2024**

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|---|---|
| **DATE ISSUED:** | **JUNE 2024** |
| **JOB NUMBER:** | **BR10255** |
| **REPORT NUMBER:** | **0005/002** |
| **VERSION:** | **V1.0** |
| **STATUS:** | **FINAL** |

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**JUNE 2024**

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# 1 INTRODUCTION

1.1.1 Walsall Council proposes to develop a combined Waste Transfer Station (WTS) and Household Waste Recycling Centre (HWRC), including commercial waste recycling centre (referred to as 'small traders' scheme') at Middlemore Lane, Aldridge, Walsall.

1.1.2 The WTS will accept up to 125,000 tonnes per year of non-hazardous household, commercial and industrial waste, and the HWRC will accept up to 55,000 tonnes per year of household and similar commercial and industrial waste including hazardous wastes. Treatment of wastes will be limited to manual sorting, separation or compaction. Section 3 provides further details of the permitted activities.

1.1.3 This report sets out the proposed operating techniques for the operation of these activities and protection of the environment.

1.1.4 A full list of the waste types that may be accepted on site is provided in the Appendices to this document. Waste acceptance procedures will be employed at the site to ensure that only permitted wastes are accepted at the site. Waste acceptance procedures are detailed in Section 5.

1.1.5 The site will operate in accordance with an Environmental Management System (EMS) which meet the requirements of the Environment Agency's Guidance (https://www.gov.uk/guidance/develop-a-management-system-environmental-permits). The Council operate under ISO 9001 Quality Assurance and ISO 14001 EMS Environmental Management accreditation. The key features of the EMS are described in Sections 3 and 8.

1.1.6 Environmental monitoring and record keeping will be undertaken and completed in accordance with the EMS and the conditions of the environmental permit once issued. Further information on this is provided in Section 9.

## 2 REGULATED ACTIVITIES

2.1.1 The site will be classed as a waste operation under the Environmental Permitting (England and Wales) Regulations 2016.

2.1.2 The WTS will accept wastes collected through the Council's services. This will primarily consist of household waste collections, with secondary streams from trade waste collections, grounds maintenance and street sweepings services. Household waste streams will be mixed residual waste (black bin waste), garden waste, mixed dry recycling waste and material collected through bulky waste collections. The facility has been designed with capacity and capability to accept segregated waste streams, for example food waste.

2.1.3 The WTS will be primarily housed in a purpose built, enclosed building in the northwest extent of the site. External bays have been allocated for the storage of suitable materials. The WTS will have a maximum design capacity of 125,000 tonnes per annum.

2.1.4 The HWRC will be located in the east extent of the site, and the small traders' scheme will be located to the south of the WTS, handling a selection of waste streams from commercial operators similar to that handled by the HWRC. These have a combined maximum design capacity of approximately 55,000 tonnes per annum.

2.1.5 The regulated activities to be undertaken at the site will align with Standard Rules SR2015 No4_75kte and Standard Rules SR2015 No20_75kte at the WTS and HWRC respectively, except for the waste quantities. The activities are as set out in Table 2:1, below.

**Table 2:1 Permitted Activities**

| Listed Activities | Limits of activities |
|---|---|
| **Transfer Station** | |
| D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)<br><br>R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)<br><br>D14: Repackaging prior to submission to any of the operations numbered D1 to 13<br><br>D9: Physico-chemical treatment not specified elsewhere in | Treatment consisting only of manual sorting or manual separation of waste into different components for disposal, (no more than 50 tonnes per day) or recovery.<br><br>No more than a total of 50 tonnes of intact and shredded waste vehicle tyres (waste codes 16 01 03 and 19 12 04) shall be stored at the site. |

| Table 2:1 Permitted Activities | |
|---|---|
| **Listed Activities** | **Limits of activities** |
| **Transfer Station** | |
| Annex IIA which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12<br><br>R3: Recycling/reclamation of organic substances which are not used as solvents<br><br>R4: Recycling/reclamation of metals and metal compounds<br><br>R5: Recycling/reclamation of other inorganic materials | |
| **Civic Amenity Site (including small trader' scheme)** | |
| D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)<br><br>R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)<br><br>D14: Repackaging prior to submission to any of the operations numbered D1 to 13<br><br>D9: Physico-chemical treatment not specified elsewhere in Annex IIA which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12<br><br>R3: Recycling/reclamation of organic substances which are not used as solvents<br><br>R4: Recycling/reclamation of metals and metal compounds<br><br>R5: Recycling/reclamation of other inorganic materials | The maximum quantity of hazardous waste and waste oils (in aggregate) that can be accepted, stored or treated at the site in connection with a disposal operation shall not exceed 10 tonnes per day.<br><br>Treatment consisting only of manual sorting, separation or compaction of waste into different components for disposal, (no more than 50 tonnes per day) or recovery.<br><br>There shall be no treatment of asbestos waste.<br><br>No more than 1 tonne of intact waste vehicle tyres (waste code 16 01 03) shall be stored at the site. |

## 3 SITE MANAGEMENT

3.1.1 The site will be operated in accordance with an Environmental Management System (EMS). The EMS will include procedures to ensure compliance with relevant legislation and the conditions of the Environmental Permit as well as seeking continuous improvement in environmental matters.

3.1.2 Written procedures will be provided for all aspects of site operations for the WTS and HWRC across all regulated activities. These will include procedures for pre-acceptance and waste acceptance checks, rejection of waste, waste handling, waste treatment and waste dispatch as appropriate. The procedures will ensure that activities are carried out in a manner which will secure legal compliance and protect the environment.

3.1.3 Site operations will be audited internally and externally on an annual basis. This will confirm compliance with the written procedures. Audits will allow for a review of progress and the setting of targets for continuing improvement over the coming year.

3.1.4 Environmental issues will be a factor in the purchasing of equipment and any infrastructure improvements. Where the same or better operational and commercial standards are achieved, equipment offering better energy efficiency and lower emissions will be selected.

3.1.5 A record will be kept of the skills necessary for each role. Training needs will be assessed on an annual basis. All staff will be trained with regards to the Environmental Permit and Environmental Management System ensuring that they have an understanding commensurate with their post.

3.1.6 An induction will be provided for contractors and visitors on site (with the exception of public-side users to the HWRC and small traders' scheme). This will cover health and safety and environmental issues on site, ensuring that they are aware of site-specific requirements and are able to carry out their duties without harm to the environment. For members of the public and small traders using the HWRC and small traders' scheme, information boards and site regulations will be presented at the site entrance on site signage, with site operatives available to detail and explain these on request.

3.1.7 A preventative maintenance programme will be in place with all site infrastructure and equipment inspected on a regular basis and serviced in accordance with the

manufacturer's recommendations. Records will be kept of all inspections and any necessary repairs or maintenance will be noted, with timescales for these to be carried out.

# 4 SITE OPERATIONS

## 4.1 Permitted Wastes

4.1.1 The Transfer Station shall not accept in excess of 125,000 tonnes per annum.

4.1.2 The Household Waste Recycling Centre and Small Traders' Scheme shall not accept in excess of 55,000 tonnes per annum.

4.1.3 There will be no treatment of wastes on site, with the exception of manual sorting, separation or compaction for recovery or disposal. There will be passive dewatering of street sweepings. That is, water may drain naturally from the street sweepings during storage. This will be directed to the foul drainage system.

4.1.4 Waste types proposed to be accepted at the WTS are provided in Appendix 1-A and align largely with those acceptable under Standard Rules SR2015 No4_75kte for a household, commercial and industrial waste transfer station; the selected waste types are considered to be low-risk and will allow the necessary operational flexibility. Additional codes are included to cover health care wastes, which the Council collect from households where needed, and animal carcasses arising from the removal of roadkill or dead bodies of wild animals or pets found in public spaces.

4.1.5 The HWRC will accept mixed household waste types (including similar commercial and industrial wastes to facilitate the small traders' scheme) as listed in Appendix 1B, aligned with those permitted in Standard Rules SR2015 No20 75kte for a non-hazardous and hazardous household waste amenity sites.

## 4.2 Hours of Operation

4.2.1 The site's planning permission allows the site to operate between the hours of 08:00 - 19:00 every day except for Christmas Day, Boxing Day, and New Year's Day, when the site will be closed. Plant, machinery or equipment will not be allowed to operate on the site outside of these hours, preventing noise nuisance to nearby residents and businesses.

## 4.3 Staffing and Understanding of Requirements of Permit Conditions

4.3.1 The site will be operated by personnel conversant with the requirements of the Environmental Permit and management system. All operatives will receive induction and other training appropriate to their roles on site.

4.3.2 Any contractors or other visiting personnel to the site will be made aware of the Environmental Permit and other legal requirements alongside information on site practices and company policies. The level of detail will be appropriate to their role and the associated level of risk to the environment. Aspects of their work that could affect permit and legislative compliance will be identified and specific instructions will be provided during the induction process to ensure any potential risks associated with their work are mitigated against.

4.3.3 Operatives whose work may affect the compliance and running of the site will be trained and made aware of the permit requirements at this facility. All members of the public offloading at the HWRC will be supervised by a trained site operative so that non-compliance is avoided.

4.3.4 A Technically Competent Manager will be present at the site for the purposes of supervision of the day-to-day operations of the permitted facility. This manager will be present for at least the minimum time required under Environment Agency guidance.

# 5 WASTE ACCEPTANCE PROCEDURES

## 5.1 Waste Pre-Acceptance

5.1.1 Only wastes listed in Appendices 1A and 1B will be accepted at the respective site areas. Pre-acceptance checks will be undertaken for waste received at the WTS only as the HWRC will be open to members of the public.

5.1.2 All wastes delivered to the WTS will be delivered using the Council's vehicle fleet and the vast majority will be from household kerbside collections.

5.1.3 Pre-acceptance procedures will ensure that only compliant waste types are accepted. For pre-acceptance of household and similar non-household waste, an appropriate contract will be in place for which the terms and conditions will specify the limits of the waste types acceptable at the facility under that contract. All waste will have been approved and checked against the site Environmental Permit.

5.1.4 The Council collects some municipal waste from non-household sources. In this case pre-acceptance characterisation will ensure that the wastes are fully described and their properties known. This characterisation will be provided to the facility management to ensure that the waste falls within the permitted waste types. All necessary information/documentation to satisfy the requirement of The Waste (England and Wales) Regulations 2011 and the conditions of the Environmental Permit will be provided for trade waste.

5.1.5 Pre-acceptance information will include details of:

- the waste producer;
- the type of waste including the six figure waste code;
- analysis of the waste and evidence it is non-hazardous where required (e.g. for some industrial wastes or soils from brownfield sites);
- the quantity of waste to be collected.

## 5.2 Waste Acceptance

***WTS Only***

5.2.1 On arrival, the contents of the waste will be communicated to site staff. Any specific handling or storage requirement for individual wastes arriving will have been established at the waste pre-acceptance stage and from the duty of care

documentation raised on arrival at the facility. Transfer notes will be raised for all trade waste.

5.2.2 Vehicle drivers will present information at the inbound weighbridge to confirm the origin and composition of the waste.

5.2.3 Incoming wastes will be weighed on arrival at the site. If possible, visual checks will be completed prior to admission to the WTS facility to ensure the waste load corresponds with the pre-acceptance information (and waste transfer note, where applicable).

5.2.4 Records will be kept for each load arriving on site including details of:

- date of delivery;
- the waste producer;
- quantity of waste;
- waste type;
- pertinent details regarding the waste appearance (smell, colour and physical form);
- classification under the List of Waste Regulations; and
- six figure code according to the European Waste Catalogue.

5.2.5 Drivers will be directed to the appropriate waste bay for unloading. Waste tipping will be observed by a trained site operative to ensure the load is as expected and conforms with the permitted waste types.

5.2.6 Waste will not be accepted if for any reason there is insufficient storage capacity available or if the site is inadequately manned. Any damage or breakdown of equipment that is likely to cause a non-compliance at the site will also mean that waste acceptance would cease if that is necessary to prevent pollution. In these cases, the incoming waste would be redirected to the nearest suitable facility.

5.2.7 Records of incoming wastes will be kept and retained at the facility and these will be made available for inspection to officers of the Environment Agency.

5.2.8 Following unloading of the vehicle drivers will proceed to the outbound weighbridge when safe to do so. All vehicles that have delivered waste to site will be weighed to determine the quantity of wastes deposited.

5.2.9 Incoming and outgoing waste tonnages and volumes will be recorded so that there is full oversight of the current volumes of wastes held on site.

5.2.10 Should any non-conforming waste be identified, a contingency will be in place to remove these wastes immediately from the site. If possible, the material will be re-loaded onto the waste delivery vehicle and returned to the site of origin, or otherwise directed to an appropriately permitted facility for recovery or disposal. In the event that these wastes have already been accepted at the site and deposited they will be isolated and where appropriate and safe to do so moved to the waste quarantine area. From here, arrangements will be made for their removal from site to a permitted facility at the earliest opportunity.

5.2.11 The producer of the waste will be informed, and a record of the occurrence will be made in the site diary, along with actions taken and a record of review will be handled in accordance with the Environment Management System (EMS).

5.2.12 Waste materials dispatched off site to an authorised facility, will be removed in accordance with the Waste (England and Wales) Regulations 2011. A registered waste carrier will be used.

5.2.13 A site log will be maintained in a dedicated office on site.

5.2.14 Weighbridge tickets and transfer notes (either hard copy or digital) will be kept in the site office.

***HWRC and Small Traders Scheme***

5.2.15 Only wastes listed in Appendix 1B will be accepted at the HWRC and small trader scheme.

5.2.16 Site operatives will supervise all users with the unloading of wastes at the facility.

5.2.17 Where unsuitable wastes are identified, site operatives will inform users that they cannot dispose of the waste at the site and should seek alternative disposal methods.

5.2.18 If wastes are identified to have been deposited in the wrong area, if possible, this material would be moved to the correct container as soon as possible.

5.2.19 If unsuitable wastes are identified to have been accepted, this material would be moved to the quarantine area for removal as soon as possible to an appropriately permitted facility.

5.2.20 For the small traders scheme vehicles will be weighed or the quantity of waste will be established based on volume. Small traders will be required to complete a waste transfer note at the weighbridge, or when booking in.

5.2.21 Only domestic hazardous waste will be accepted on site, that is hazardous waste will only be accepted from householders or traders generating waste as part of the their work in domestic properties and therefore consignment notes will not be required.

## 6 WASTE STORAGE

6.1.1 Wastes with similar properties or disposal routes will, as far as practicable, be stored together although hazardous and non-hazardous wastes will be stored separately.

6.1.2 Each separate site area is designed for the safe receipt and separate storage of expected wastes.

6.1.3 For the WTS, all storage will be within internal and external waste bays consisting of concrete push walls and impermeable surfaces with sealed drainage discharging to foul sewer. Storage of waste in external delivery bays will be limited to those suitable for outside storage only and will exclude putrescible wastes, odorous wastes and light waste such as plastics, paper and cardboard that may cause litter.

6.1.4 All waste delivered to the HWRC and small traders' scheme will be stored in appropriate sealed containers. The majority of storage will be provided by RoRo skips for separate collection of different material streams.

6.1.5 Lockable cages will be provided for gas bottles and large WEEE with all electrical items stored under cover. Suitable weatherproof containers will be provided for batteries and fluorescent tubes.

6.1.6 Storage for liquid wastes, such as oils or paint, will be bunded to contain any leaks or spills.

6.1.7 A lockable skip will be provided for the storage of asbestos to prevent access to this waste. It is expected that asbestos will in general be received double bagged.

6.1.8 Sharps boxes will be stored upright in a dedicated secure area pending appropriate disposal. Sharps will only be accepted in suitable sharps containers.

6.1.9 Storage volumes will be monitored through the use of fill levels.

6.1.10 Storage times will within the HWRC will be appropriate to ensure sufficient waste volumes are bulked up for onward disposal or treatment. This will not necessarily mean that extended storage periods are required, but storage times may vary to optimise the efficiency of onward transport.

6.1.11 All waste stored temporarily within the WTS building will have a maximum residence of 3 days. Periodic cleaning of waste storage areas and facilities will be carried out.

6.1.12 Trained operatives will oversee and control unloading and loading of materials at the WTS.

6.1.13 Should there be any power or equipment failure on the site then waste will not be accepted on site, unless this can be done in full compliance with the permit or other environmental legislation.

# 7 OPERATIONAL CONTROLS TO PROVIDE ENVIRONMENTAL PROTECTION

## 7.1 General

7.1.1 The site has been designed to provide environmental protection for land, water and air.

7.1.2 Potential hazards that could cause harm are subject to strict preventative or control measures to ensure that all risks are minimised.

7.1.3 Two point-source emissions to air will originate from two dust and odour extraction systems located on the Waste Transfer Station building. There are no further point-source emissions proposed from the site. The location and further details of the ventilation and filtration plant is shown in Drawing MMHWRC-CPW-73-WT0-D-M-3011, 3012 and 3013. The plant is split into two halves to service the east and west ends of the WTS. Discharge flues are located at treatment plant areas, which will be a maximum of 12m tall so that they do not exceed the WTS ridge height.

7.1.4 Operations will be undertaken in a manner compliant with relevant guidance and the EMS, ensuring good housekeeping and minimising any potential impacts. Further commentary is provided in the Accident and Amenity Risk Assessment.

## 7.2 Odour

7.2.1 Wastes that have the potential to produce odours will be stored within the WTS where they are subject to controlled conditions, actively managed, and stored for no longer than 3 days to prevent generation of odours.

7.2.2 The Waste Transfer Station will be fitted with ventilation that will maintain the building is under a slight negative pressure to prevent the escape of odour and dust. The building has an air treatment system, which will treat the total volume of extracted air to remove odour, creating two point-source emissions to air.

7.2.3 The system will be designed to provide a minimum three air changes per hour and will include dust filters and a carbon filtration system to remove odours prior to emission. Carbon filters will be maintained in accordance with the manufacturer's recommendations and spare carbon media will be kept on site to ensure it can be quickly changed if the media is saturated or damaged.

7.2.4 The WTS building will be fitted with fan assisted rotary atomisers with the option to add odour suppressants, which are only intended to be used temporarily in the unlikely event that odour management controls are insufficient to prevent polluting

odour emissions beyond the site boundary. Atomisers can be controlled manually by site operators via the central control box.

7.2.5 An Odour Management Plan has been developed for the site and is provided in support of the application. Measures to control odour include:

- stringent waste acceptance procedures will ensure that no excessively odorous loads are accepted onto the site;
- all vehicles delivering potentially odorous loads to the site will be required to be sheeted or covered;
- fast acting roller-shutter doors will remain closed other than when allowing vehicle access and egress, preventing escape of odour;
- residence times will be kept to no longer than 3 days, with wastes with a potential to cause odour prioritised for removal;
- waste bays and containers will be subject to scheduled cleansing, with a focus on those used for potentially odorous wastes.

7.2.6 Daily inspections of the site will include olfactory monitoring at the site boundary.

7.2.7 In the event that an odour problem is identified, or a complaint received, the Site Manager will be informed and investigations will be undertaken in order to identify the source of the odour and provide any necessary mitigation.

7.3 Noise

7.3.1 All plant will be maintained in accordance with the manufacturer's recommendations and will be subject to regular servicing in order to minimise noise.

7.3.2 The site is located on an industrial estate with the closest residential receptor located 170m to the northeast. Activities will be restricted to the working day and will not take place overnight.

7.3.3 If noise at the site is perceived to be an issue, a noise management plan will be produced and agreed with the local Environment Agency office.

7.4 Surface Water and Groundwater Protection

7.4.1 Operational areas of the site are provided with impermeable surfacing and drainage to prevent liquids and runoff from waste from mixing with clean surface water run-off.

7.4.2 The WTS building benefits from impermeable surfacing draining to a central linear drain connected to foul sewer. The drainage has a penstock valve which will be closed to prevent firewater being released in the event of a fire. Entrances and exits to the WTS building will be slightly raised (e.g. by a sleeping policeman) to provide additional bunded capacity for the containment of firewater in the event of a fire. The WTS has a capacity of 620m³ for the storage of firewater.

7.4.3 Firewater that cannot be contained on the WTS floor will be routed into the WTS external yard with a capacity of 1,259m³. The external yard is also equipped with impermeable drainage draining to linear channels and fitted with a penstock.

7.4.4 External WTS waste storage bays will be constructed on impermeable surfacing draining to foul sewer.

7.4.5 The operational areas of the HWRC and Small Traders' Scheme are provided with impermeable surfacing which drains to the surface water sewer. The drainage system is equipped with interceptors and an Aqua-Filter and Aqua-Swirl hydrodynamic separation and filtration system for the removal of fine sediments, nutrients, heavy metals and hydrocarbon pollutants from surface water runoff. Interceptors on the site will be regularly inspected and emptied as needed before they reach full capacity. Drawings MMHWRC-HSP-52-XX-D-C-1050, 1051, 1052, 1053 and 1054 provide an overview of the drainage strategy.

7.4.6 Fuels and any other liquids stored on site will be stored within bunded containers. Spill-kits will be available nearby which site operatives will be trained to use in case of spillages.

7.4.7 Only clean rainwater will be discharged to the local surface water sewer system. Good housekeeping and other measures will ensure that rainwater is not contaminated.

7.5 Pests

7.5.1 The nature of the wastes deposited at this facility may attract or encourage pests or vermin. Active management, including limiting residence time and rotation of stockpiles will ensure that opportunity for pests to establish are limited.

7.5.2 On detection or notification of vermin, pest or insect infestations, action will be taken to secure the attendance of a suitably trained operative or professional pest control contractor.

## 7.6 Particulates

7.6.1 Wastes accepted are anticipated to have a low risk of dust emissions, and are not expected to cause any issues during receipt and storage. Wastes stored within the WTS will be subject to controlled conditions and actively managed to prevent potential dust emissions.

7.6.2 The Waste Transfer Station's ventilation and air treatment system will include particulate filtration to EU 8 standard, treating the total volume of extracted air to remove dust. The system will be designed to ensure the maximum dust concentration in the exhaust air shall be less than 5mg/$m^3$. The system will be designed to provide a minimum three air changes per hour.

7.6.3 Dust filters will be maintained in accordance with the manufacturers' recommendations. Dust filters are monitored constantly via a filter pressure drop indicator to ensure they are operating effectively. If there is an excessive pressure drop that indicates the filter is no longer working as expected, an alarm will sound on the control panel and the filter media will be replaced. Spare media will be kept on site to ensure it can be quickly changed if the media is saturated or damaged.

7.6.4 The Waste Transfer station shall also be fitted with a dust suppression system comprising of fan assisted rotary atomisers, allowing stockpiles to be dampened if appropriate. The water supply to the atomisers will be via a tank and feed pump.

7.6.5 A Dust Management Plan has been provided for the site and this sets out detailed measures for controlling dust. These include the following controls:

- all vehicles carrying potentially dust producing wastes to or from the site will be sheeted or covered;
- excessively dusty wastes arriving at the site will be prohibited from tipping and rejected;
- wastes will be stored in concrete bays or metal containers. These will provide shelter from the wind and minimise air borne dust, and may be covered as appropriate;
- hoses may be used to dampen waste stockpiles in the event of hot weather or if dust is identified;
- hardstanding will be swept as necessary using brushes or the road sweeper;

- facilities will be provided to wash down vehicles leaving the site if necessary; and
- processing may be temporarily suspended during strong winds, when it may be more difficult to control dust.

7.6.6 Daily inspections of the site will include an assessment of dust. Should there be any visible dust beyond the site boundary, the source will be investigated, and mitigation measures will be implemented.

7.7 Leaks and Spillages

7.7.1 All plant and equipment will be serviced and maintained in accordance with the manufacturer's recommendations, minimising the risk of spills from site plant and equipment.

7.7.2 All areas where wastes will be received, handled or stored will be provided with impermeable concrete surfacing that drains to a sealed drainage system.

7.7.3 Any liquids stored on site for plant maintenance will be kept in appropriate lidded containers in bunds or drip trays.

7.7.4 The drainage system will be inspected regularly and maintained as required so that they remain fit for purpose.

7.7.5 In the event of a spill, a spill kit will be used to clear the spilt material. Materials within the spill kit will absorb the liquid, with the waste absorbent than placed into a suitable bin or container awaiting removal from the site.

7.8 Litter

7.8.1 The facility will accept a range of waste materials for storage. Suitable containers will be provided for light wastes.

7.8.2 Any plastic or other light materials collected around the site will be placed in lidded containers or within the WTS building.

7.8.3 The site will be inspected by a trained member of staff daily. In the event that there is any litter around the site, this will be collected and placed in the appropriate container.

7.8.4 Skips will not be filled above their capacity (no more than the height of their side) to prevent any spillage or wind whipping of materials that have the potential to cause litter.

7.8.5 The control measures in place mean that litter will be controlled at source, preventing any significant emissions to the environment.

# 8 ENVIRONMENTAL MANAGEMENT SYSTEM

8.1.1 An Environmental Management System (EMS) will be implemented that is compliant with the requirements of ISO14001:2015. This includes:

- Quality Management;
- Environmental Management;
- Health and Safety Management;
- Training;
- Maintenance;
- Permit requirements; and
- Other environmental legislation and requirements.

8.1.2 The EMS provides a mechanism for the environmental management of all areas and departments of the site and allows the Council to manage and control the environmental impacts of its activities, products and services.

8.1.3 The Quality, Environmental and Health and Safety Policies will be communicated to all employees. Implementation of the system will involve:

- initial Environmental Awareness Training for all employees;
- introduction and implementation of the system;
- identification of any environmental impacts, which involves a process of identifying key activities, products and services and the associated environmental aspects;
- implementing measures to control those aspects.

8.1.4 The EMS will include a plan to prevent or remediate the environmental impacts, along with targets, which are agreed and implemented through site review meetings and ongoing site controls.

8.1.5 Staff at the facility will be trained to carry out checks during their work to spot any actual or potential occurrences of spillages, leaks or other events, malfunctions and the like that could cause emissions to air, water or ground. These will be immediately reported to site management and appropriate remedial action carried out.

8.1.6 An annual audit will be undertaken to cover legal compliance (both environmental and health and safety), environmental improvements and systems compliance. This will be achieved by:

- establishing compliance with legal commitments, e.g. Environmental Permit and Planning Permission;
- establishing compliance with relevant legislation, e.g. Waste Regulations 2011;
- reviewing Environmental Management Programmes and compliance with EMS procedures;
- confirming commitment to continual improvement; and
- working with the Environment Agency during compliance visits.

8.1.7 An Audit Report will be produced and will contain the following information:

- Site Inspection and Health & Safety Audit;
- Incident Reports Summary and Review;
- Environment Agency Inspection Summary and Review;
- Review of Environmental Objectives and Performance; and
- Audit findings, conclusion and recommendations.

8.1.8 A copy of the EMS will be provided on site when in place, and before operation of the facility.

## 9 MONITORING AND RECORD KEEPING

9.1.1 The site will be inspected daily with staff carrying out a visual and olfactory assessment around the site boundary to check for emissions of contaminated run-off, litter, odour and particulates.

9.1.2 Site inspections will include the condition of site infrastructure, including impermeable surfacing, containers, buildings and secondary containment infrastructure.

9.1.3 Should any issues be noted these will be raised with site management and appropriate remedial action will be agreed. Details of the inspection and any remedial action will be recorded in the site diary.

9.1.4 The site diary will be made available to warranted officers of the Environment Agency on request.

9.1.5 Should any incident have the potential to cause significant emissions, the Environment Agency will be informed by telephone and remedial action will be agreed with the local environment officer.

9.1.6 Records will be kept on site, in either electronic or hard copy format, recording:

- pre-acceptance details for each waste stream;
- waste transfer notes or consignment notes for incoming and outgoing wastes;
- details of any rejected loads and any associated remedial action taken;
- details of plant and infrastructure inspections, including any maintenance that is required; and
- details of any complaints received and the action taken to resolve them.

## 10 SITE CLOSURE PLAN

10.1.1 On completion of operations at the site the facility will be closed in a controlled manner to prevent any contamination of the surrounding land or air.

10.1.2 Measures will ensure that there is no dust, noise or odour nuisance associated with this.

10.1.3 All containers and storage areas will have their contents removed to an appropriately permitted facility and will be cleansed to ensure no residues remain.

10.1.4 Site infrastructure will be dismantled if there is no further use for it. It is expected that buildings, along with the bunding and surfacing will remain and can be utilised for another purpose following site closure.

10.1.5 Any dismantling of infrastructure will be done so that the wastes produced from these can be recycled, reused or recovered fully wherever possible. All waste will be recovered or disposed of in accordance with duty of care requirements.

10.1.6 Interceptors will be emptied with the waste sent to an appropriately permitted facility for treatment and disposal.

10.1.7 The methodology used to decommission process plant and buildings will minimise the impact of noise, odour and disturbance to the environment.

10.1.8 Protection of the environment will be a priority and no risk to air, land, water or human health will be experienced during closure and decommissioning of the site, which will be subject to the Environmental Management System requirements.

10.1.9 No further deliveries of wastes will be permitted at the site following closure.

10.1.10 The Environmental Permit will be surrendered following the closure of the facility.

# APPENDICES

# APPENDIX 1-A

## List of Waste Codes – Middlemore WTS

## Appendix 1-A

The following waste codes will be accepted at Middlemore Lane Waste Transfer Station. Waste codes align with those acceptable under Standard Rules SR2015 No4_75kte with the addition of non hazardous health care wastes, to allow the Council to manage healthcare waste which they collect separately

**Exclusions**
Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| **01** | **WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS** |
| **01 01** | **Wastes from mineral excavation** |
| 01 01 01 | Wastes from mineral metalliferous excavation |
| 01 01 02 | Wastes from mineral non-metalliferous excavation |
| **01 03** | **Wastes from physical and chemical processing of metalliferous minerals** |
| 01 03 06 | Tailings other than those mentioned in 01 03 04 and 01 03 05 |
| 01 03 09 | Red mud from alumina production other than the wastes mentioned in 01 03 07 |
| **01 04** | **Wastes from physical and chemical processing of non-metalliferous minerals** |
| 01 04 08 | Waste gravel and crushed rocks other than those mentioned in 01 04 07 |
| 01 04 09 | Waste sand and clays |
| 01 04 11 | Wastes from potash and rock salt processing other than those mentioned in 01 04 07 |
| 01 04 12 | Tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11 |
| 01 04 13 | Wastes from stone cutting and sawing other than those mentioned in 01 04 07 |
| **02** | **WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING** |
| **02 01** | **Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing** |
| 02 01 03 | Plant-tissue waste |
| 02 01 04 | Waste plastics (except packaging) |
| 02 01 07 | Wastes from forestry |
| 02 01 10 | Waste metal |
| **02 02** | **Wastes from the preparation and processing of meat, fish and other foods of animal origin** |
| 02 02 03 | Materials unsuitable for consumption or processing |
| **02 03** | **Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation** |
| 02 03 04 | Materials unsuitable for consumption or processing |
| **02 04** | **Wastes from sugar processing** |
| 02 04 01 | Soil from cleaning and washing beet |
| 02 04 02 | Off-specification calcium carbonate |
| **02 05** | **Wastes from the dairy products industry** |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 02 05 01 | Materials unsuitable for consumption or processing |
| **02 06** | **Wastes from the baking and confectionery industry** |
| 02 06 01 | Materials unsuitable for consumption or processing |
| 02 06 02 | Wastes from preserving agents |
| **02 07** | **Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)** |
| 02 07 01 | Wastes from washing, cleaning and mechanical reduction of raw materials |
| 02 07 02 | Wastes from spirits distillation |
| 02 07 04 | Materials unsuitable for consumption or processing |
| **03** | **WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD** |
| **03 01** | **Wastes from wood processing and the production of panels and furniture** |
| 03 01 01 | Waste bark and cork |
| 03 01 05 | Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04 |
| **03 03** | **Wastes from pulp, paper and cardboard production and processing** |
| 03 03 01 | Waste bark and wood |
| 03 03 07 | Mechanically separated rejects from pulping of waste paper and cardboard |
| 03 03 08 | Wastes from sorting of paper and cardboard destined for recycling |
| 03 03 10 | Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation |
| **04** | **WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES** |
| **04 01** | **Wastes from the leather and fur industry** |
| 04 01 08 | Waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium |
| 04 01 09 | Wastes from dressing and finishing |
| **04 02** | **Wastes from the textile industry** |
| 04 02 21 | Wastes from unprocessed textile fibres |
| 04 02 22 | Wastes from processed textile fibres |
| **06** | **WASTES FROM INORGANIC CHEMICAL PROCESSES** |
| **06 09** | **Wastes from the MSFU of phosphorous chemicals and phosphorous chemical processes** |
| 06 09 02 | Phosphorous slag |
| 06 09 04 | Calcium-based reaction wastes other than those mentioned in 06 09 03 |
| **06 11** | **Wastes from the manufacture of inorganic pigments and opacificiers** |
| 06 11 01 | Calcium-based reaction wastes from titanium dioxide production |
| **07** | **WASTES FROM ORGANIC CHEMICAL PROCESSES** |
| 07 02 | Wastes from the MFSU of plastics, synthetic rubber and man-made fibres |
| 07 02 13 | Waste plastic |
| **09** | **WASTES FROM THE PHOTOGRAPHIC INDUSTRY** |
| **09 01** | **Wastes from the photographic industry** |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 09 01 07 | Photographic film and paper containing silver or silver compounds |
| 09 01 08 | Photographic film and paper free of silver or silver compounds |
| 09 01 10 | Single-use cameras without batteries |
| 09 01 12 | Single-use cameras containing batteries other than those mentioned in 09 01 11 |
| **10** | **WASTES FROM THERMAL PROCESSES** |
| **10 01** | **Wastes from power stations and other combustion plants (except 19)** |
| 10 01 01 | Bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04) |
| 10 01 05 | Calcium-based reaction wastes from flue-gas desulphurisation in solid form |
| 10 01 07 | Calcium-based reaction wastes from flue-gas desulphurisation in sludge form |
| 10 01 15 | Bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14 |
| 10 01 19 | Wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18 |
| 10 01 24 | Sands from fluidised beds |
| **10 02** | **Wastes from the iron and steel industry** |
| 10 02 01 | Wastes from the processing of slag |
| 10 02 02 | Unprocessed slag |
| 10 02 08 | Solid wastes from gas treatment other than those mentioned in 10 02 07 |
| 10 02 10 | Mill scales |
| 10 02 14 | Filter cakes from gas treatment other than those mentioned in 10 02 13 |
| 10 02 15 | Other filter cakes |
| **10 03** | **Wastes from aluminium thermal metallurgy** |
| 10 03 02 | Anode scraps |
| 10 03 05 | Waste alumina |
| 10 03 16 | Skimmings other than those mentioned in 10 03 15 |
| 10 03 18 | Carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17 |
| 10 03 24 | Solid wastes from gas treatment other than those mentioned in 10 03 23 |
| 10 03 26 | Filter cakes from gas treatment other than those mentioned in 10 03 25 |
| 10 03 28 | Wastes from cooling-water treatment other than those mentioned in 10 03 27 |
| 10 03 30 | Wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29 |
| **10 04** | **Wastes from lead thermal metallurgy** |
| 10 04 10 | Wastes from cooling-water treatment other than those mentioned in 10 04 09 |
| **10 05** | **Wastes from zinc thermal metallurgy** |
| 10 05 01 | Slags from primary and secondary production |
| 10 05 09 | Wastes from cooling-water treatment other than those mentioned in 10 05 08 |
| 10 05 11 | Dross and skimmings other than those mentioned in 10 05 10 |
| **10 06** | **Wastes from copper thermal metallurgy** |
| 10 06 01 | Slags from primary and secondary production |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 10 06 02 | Dross and skimmings from primary and secondary production |
| 10 06 10 | Wastes from cooling-water treatment other than those mentioned in 10 06 09 |
| **10 07** | **Wastes from silver, gold and platinum thermal metallurgy** |
| 10 07 01 | Slags from primary and secondary production |
| 10 07 02 | Dross and skimmings from primary and secondary production |
| 10 07 03 | Solid wastes from gas treatment |
| 10 07 05 | Filter cakes from gas treatment |
| 10 07 08 | Wastes from cooling-water treatment other than those mentioned in 10 07 07 |
| **10 08** | **Wastes from other non-ferrous thermal metallurgy** |
| 10 08 09 | Other slags |
| 10 08 11 | Dross and skimmings other than those mentioned in 10 08 10 |
| 10 08 13 | Carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12 |
| 10 08 14 | Anode scrap |
| 10 08 18 | Filter cakes from flue-gas treatment other than those mentioned in 10 08 17 |
| 10 08 20 | Wastes from cooling-water treatment other than those mentioned in 10 08 19 |
| **10 09** | **Wastes from casting of ferrous pieces** |
| 10 09 03 | Furnace slag |
| 10 09 06 | Casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05 |
| 10 09 08 | Casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07 |
| 10 09 14 | Waste binders other than those mentioned in 10 09 13 |
| 10 09 16 | Waste crack-indicating agent other than those mentioned in 10 09 15 |
| **10 10** | **Wastes from casting of non-ferrous pieces** |
| 10 10 03 | Furnace slag |
| 10 10 06 | Casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05 |
| 10 10 08 | Casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07 |
| 10 10 14 | Waste binders other than those mentioned in 10 10 13 |
| 10 10 16 | Waste crack-indicating agent other than those mentioned in 10 10 15 |
| **10 11** | **Wastes from manufacture of glass and glass products** |
| 10 11 03 | Waste glass-based fibrous materials |
| 10 11 10 | Waste preparation mixture before thermal processing, other than those mentioned in 10 11 09 |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 10 11 12 | Waste glass other than those mentioned in 10 11 11 |
| 10 11 16 | Solid wastes from flue-gas treatment other than those mentioned in 10 11 15 |
| 10 11 18 | Filter cakes from flue-gas treatment other than those mentioned in 10 11 17 |
| **10 12** | **Wastes from manufacture of ceramic goods, bricks, tiles and construction products** |
| 10 12 01 | Waste preparation mixture before thermal processing |
| 10 12 05 | Filter cakes from gas treatment |
| 10 12 06 | Discarded moulds |
| 10 12 08 | Waste ceramics, bricks, tiles and construction products (after thermal processing) |
| 10 12 10 | Solid wastes from gas treatment other than those mentioned in 10 12 09 |
| 10 12 12 | Wastes from glazing other than those mentioned in 10 12 11 |
| **10 13** | **Wastes from manufacture of cement, lime and plaster and articles and products made from them** |
| 10 13 01 | Waste preparation mixture before thermal processing |
| 10 13 04 | Wastes from calcination and hydration of lime |
| 10 13 07 | Filter cakes from gas treatment |
| 10 13 10 | Wastes from asbestos-cement manufacture other than those mentioned in 10 13 09 |
| 10 13 11 | Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10 |
| 10 13 13 | Solid wastes from gas treatment other than those mentioned in 10 13 12 |
| 10 13 14 | Waste concrete |
| **11** | **WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO METALLURGY** |
| **11 01** | **Wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)** |
| 11 01 10 | Filter cakes other than those mentioned in 11 01 09 |
| 11 01 14 | Degreasing wastes other than those mentioned in 11 01 13 |
| **11 02** | **Wastes from non-ferrous hydrometallurgical processes** |
| 11 02 03 | Wastes from the production of anodes for aqueous electrolytical processes |
| 11 02 06 | Wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05 |
| **11 05** | **Wastes from hot galvanising processes** |
| 11 05 01 | Hard zinc |
| 11 05 02 | Zinc ash |
| **12** | **WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS** |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| **12 01** | **Wastes from shaping and physical and mechanical surface treatment of metals and plastics** |
| 12 01 01 | Ferrous metal filings and turnings |
| 12 01 03 | Non-ferrous metal filings and turnings |
| 12 01 05 | Plastics shavings and turnings |
| 12 01 13 | Welding wastes |
| 12 01 17 | Waste blasting material other than those mentioned in 12 01 16 |
| 12 01 21 | Spent grinding bodies and grinding materials other than those mentioned in 12 01 20 |
| **15** | **WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED** |
| **15 01** | **Packaging (including separately collected municipal packaging waste)** |
| 15 01 01 | Paper and cardboard packaging |
| 15 01 02 | Plastic packaging |
| 15 01 03 | Wooden packaging |
| 15 01 04 | Metallic packaging |
| 15 01 05 | Composite packaging |
| 15 01 06 | Mixed packaging |
| 15 01 07 | Glass packaging |
| 15 01 09 | Textile packaging |
| **15 02** | **Absorbents, filter materials, wiping cloths and protective clothing** |
| 15 02 03 | Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02 |
| **16** | **WASTES NOT OTHERWISE SPECIFIED IN THE LIST** |
| **16 01** | **End-of-life vehicles from different means of transport [including off-road machinery] and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13,14, 16 06 and 16 08)** |
| 16 01 03 | End-of-life tyres |
| **16 02** | **Wastes from electrical and electronic equipment** |
| 16 02 14 | Discarded equipment other than those mentioned in 16 02 09 to 16 02 13 |
| 16 02 16 | Components removed from discarded equipment other than those mentioned in 16 02 15 |
| **16 03** | **Off-specification batches and unused products** |
| 16 03 04 | Inorganic wastes other than those mentioned in 16 03 03 |
| 16 03 06 | Organic wastes other than those mentioned in 16 03 05 |
| 16 06 | Batteries and accumulators |
| 16 06 04 | Alkaline batteries (except 16 06 03) |
| 16 06 05 | Other batteries and accumulators |
| **16 11** | **Waste linings and refractories** |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 16 11 02 | Carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01 |
| 16 11 04 | Other linings and refractories from metallurgical processes other than those mentioned in 16 11 03 |
| 16 11 06 | Linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05 |
| **17** | **CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)** |
| **17 01** | **Concrete, bricks, tiles and ceramics** |
| 17 01 01 | Concrete |
| 17 01 02 | Bricks |
| 17 01 03 | Tiles and ceramics |
| 17 01 07 | Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 |
| **17 02** | **Wood, glass and plastic** |
| 17 02 01 | Wood |
| 17 02 02 | Glass |
| 17 02 03 | Plastic |
| **17 03** | **Bituminous mixtures, coal tar and tarred products** |
| 17 03 02 | Bituminous mixtures other than those mentioned in 17 03 01 |
| **17 04** | **Metals (including their alloys)** |
| 17 04 01 | Copper, bronze, brass |
| 17 04 02 | Aluminium |
| 17 04 03 | Lead |
| 17 04 04 | Zinc |
| 17 04 05 | Iron and steel |
| 17 04 06 | Tin |
| 17 04 07 | Mixed metals |
| 17 04 11 | Cables other than those mentioned in 17 04 10 |
| **17 05** | **Soil (including excavated soil from contaminated sites), stones and dredging spoil** |
| 17 05 04 | Soil and stones other than those mentioned in 17 05 03 |
| 17 05 08 | Track ballast other than those mentioned in 17 05 07 |
| **17 06** | **Insulation materials and asbestos-containing construction materials** |
| 17 06 04 | Insulation materials other than those mentioned in 17 06 01 and 17 06 03 |
| **17 08** | **Gypsum-based construction material** |
| 17 08 02 | Gypsum-based construction materials other than those mentioned in 17 08 01 |
| **17 09** | **Other construction and demolition wastes** |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 17 09 04 | Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 |
| **18** | **WASTES FROM HUMAN OR ANIMAL HEATHCARE AND/OR RELATED RESEARCH** |
| **18 01** | **Wastes from natal care, diagnosis, treatment or prevention of disease in animals** |
| 18 01 01 | Sharps (except 18 01 03) |
| 18 01 04 | Wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing , diapers) |
| 18 01 07 | Chemicals other than those mentioned in 18 01 06 |
| 18 01 09 | Medicines other than those mentioned in 18 01 08 |
| **18 02** | **Wastes from research , diagnosis, treatment of prevention of disease involving animals** |
| 18 02 01 | Sharps (except 18 02 02) |
| 18 02 03 | Wastes whose collection and disposal is not subject to special arrangements in order to prevent infection. |
| 18 02 06 | Chemicals other than those mentioned in 18 02 05 |
| 18 02 08 | Medicines other than those mentioned in 18 02 07 |
| **19** | **WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE** |
| **19 01** | **Wastes from incineration or pyrolysis of waste** |
| 19 01 02 | Ferrous materials removed from bottom ash |
| 19 01 12 | Bottom ash and slag other than those mentioned in 19 01 11 |
| 19 01 18 | Pyrolysis wastes other than those mentioned in 19 01 17 |
| 19 01 19 | Sands from fluidised beds |
| **19 02** | **Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)** |
| 19 02 03 | Premixed wastes composed only of non-hazardous wastes |
| 19 02 10 | Combustible wastes other than those mentioned in 19 02 08 and 19 02 09 |
| **19 04** | **Vitrified waste and wastes from vitrification** |
| 19 04 01 | Vitrified waste |
| **19 05** | **Wastes from aerobic treatment of solid wastes** |
| 19 05 01 | Non-composted fraction of municipal and similar wastes |
| 19 05 02 | Non-composted fraction of animal and vegetable waste |
| 19 05 03 | Off-specification compost |
| **19 12** | **Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified** |
| 19 12 01 | Paper and cardboard |
| 19 12 02 | Ferrous metal |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres
- Wastes that are in a form which is either sludge or liquid

| Waste Code | Description |
|---|---|
| 19 12 03 | Non-ferrous metal |
| 19 12 04 | Plastic and rubber |
| 19 12 05 | Glass |
| 19 12 07 | Wood other than that mentioned in 19 12 06 |
| 19 12 08 | Textiles |
| 19 12 09 | Minerals (for example sand, stones) |
| 19 12 10 | Combustible waste (refuse derived fuel) |
| **19 13** | **Wastes from soil and groundwater remediation** |
| 19 13 02 | Solid wastes from soil remediation other than those mentioned in 19 13 01 |
| **20** | **MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS** |
| **20 01** | **Separately collected fractions (except 15 01)** |
| 20 01 01 | Paper and cardboard |
| 20 01 02 | Glass |
| 20 01 08 | Biodegradable kitchen and canteen waste |
| 20 01 10 | Clothes |
| 20 01 11 | Textiles |
| 20 01 34 | Batteries and accumulators other than those mentioned in 20 01 33 |
| 20 01 36 | Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 |
| 20 01 38 | Wood other than that mentioned in 20 01 37 |
| 20 01 39 | Plastics |
| 20 01 40 | Metals |
| 20 01 41 | Wastes from chimney sweeping |
| 20 01 99 | Other fractions not otherwise specified ( animal carcasses from animals killed or found dead on the road or in public spaces) |
| **20 02** | **Garden and park wastes (including cemetery waste)** |
| 20 02 01 | Biodegradable waste |
| 20 02 02 | Soil and stones |
| **20 03** | **Other municipal wastes** |
| 20 03 01 | Mixed municipal waste |
| 20 03 02 | Waste from markets |
| 20 03 03 | Street-cleaning residues |
| 20 03 07 | Bulky waste |

# APPENDIX 1-B

## List of Waste Codes – Middlemore HWRC and Small Traders' Scheme

## Appendix 1-B

The following waste codes will be accepted at Middlemore Lane HWRC and Small Traders' Scheme. Waste codes align with those acceptable under Standard Rules SR2015 No20_75kte.

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres

| Waste Code | Description |
|---|---|
| **13** | **OIL WASTES AND WASTES OF LIQUID FUELS** |
| **13 02** | **Waste engine, gear and lubricating oils** |
| 13 02 05* | Mineral-based non chlorinated engine, gear and lubricating oils |
| 13 02 06* | Synthetic engine, gear and lubricating oils |
| 13 02 07* | Readily biodegradable engine, gear and lubricating oils |
| 13 02 08* | Other engine, gear and lubricating oils |
| **15** | **WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED** |
| **15 01** | **Packaging (including separately collected municipal packaging waste)** |
| 15 01 01 | Paper and cardboard packaging |
| 15 01 02 | Plastic packaging |
| 15 01 03 | Wooden packaging |
| 15 01 04 | Metallic packaging |
| 15 01 05 | Composite packaging |
| 15 01 06 | Mixed packaging |
| 15 01 07 | Glass packaging |
| 15 01 09 | Textile packaging |
| **15 02** | **Absorbents, filter materials, wiping cloths and protective clothing** |
| 15 02 02* | Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances |
| 15 02 03 | Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02 |
| **16** | **WASTES NOT OTHERWISE SPECIFIED IN THE LIST** |
| **16 01** | **End-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)** |
| 16 01 03 | End-of-life tyres |
| 16 01 07* | Oil filters |
| 16 01 14* | Antifreeze fluids containing dangerous substances |
| 16 01 15 | Antifreeze fluids other than those mentioned in 16 01 14 |
| **16 05** | **Gases in pressure containers and discarded chemicals** |
| 16 05 05 | Gases in pressure containers other than those mentioned in 16 05 04 |
| **17** | **CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)** |
| **17 01** | **Concrete, bricks, tiles and ceramics** |
| 17 01 01 | Concrete |
| 17 01 02 | Bricks |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres

| Waste Code | Description |
|---|---|
| 17 01 03 | Tiles and ceramics |
| 17 01 07 | Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 |
| **17 06** | **Insulation materials and asbestos-containing construction materials** |
| 17 06 01* | Insulation materials containing asbestos (bonded asbestos only) |
| 17 06 04 | Insulation materials other than those mentioned in 17 06 01 and 17 06 03 |
| 17 06 05* | Construction materials containing asbestos (bonded asbestos only) |
| **17 08** | **Gypsum-based construction material** |
| 17 08 02 | Gypsum-based construction materials other than those mentioned in 17 08 01 |
| **17 09** | **Other construction and demolition wastes** |
| 17 09 04 | Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 |
| **20** | **MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS** |
| **20 01** | **Separately collected fractions (except 15 01)** |
| 20 01 01 | Paper and cardboard |
| 20 01 02 | Glass |
| 20 01 08 | Biodegradable kitchen and canteen waste |
| 20 01 10 | Clothes |
| 20 01 11 | Textiles |
| 20 01 13* | Solvents |
| 20 01 14* | Acids |
| 20 01 15* | Alkalines |
| 20 01 17* | Photochemicals |
| 20 01 19* | Pesticides |
| 20 01 21* | Fluorescent tubes and other mercury containing waste |
| 20 01 23* | Discarded equipment containing chlorofluorocarbons |
| 20 01 25 | Edible oil and fat |
| 20 01 26* | Oil and fat other than those mentioned in 20 01 25 |
| 20 01 27* | Paint, inks, adhesives and resins containing dangerous substances |
| 20 01 28 | Paint, inks, adhesives and resins other than those mentioned in 20 01 27 |
| 20 01 29* | Detergents containing dangerous substances |
| 20 01 30 | Detergents other than those mentioned in 20 01 29 |
| 20 01 33* | Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries |
| 20 01 34 | Batteries and accumulators other than those mentioned in 20 01 33 |
| 20 01 35* | Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components |

**Exclusions**

Wastes having any of the following characteristics shall not be accepted:

- Consisting solely or mainly of dusts, powders or loose fibres

| Waste Code | Description |
|---|---|
| 20 01 36 | Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 |
| 20 01 37* | Wood containing dangerous substances |
| 20 01 38 | Wood other than that mentioned in 20 01 37 |
| 20 01 39 | Plastics |
| 20 01 40 | Metals |
| 20 01 41 | Wastes from chimney sweeping |
| **20 02** | **Garden and park wastes (including cemetery waste)** |
| 20 02 01 | Biodegradable waste |
| 20 02 02 | Soil and stones |
| 20 02 03 | Other non-biodegradable wastes |
| **20 03** | **Other municipal wastes** |
| 20 03 01 | Mixed municipal waste |
| 20 03 07 | Bulky waste |

# DRAWINGS

## HEALTH AND SAFETY INFORMATION

Standards hazards and risks may not necessarily be identified on this drawing. The caution symbols that are identified, but not limited to, related to specific hazards and risks associated with this type of project.
**Reference should be made to the DRA for further details.**

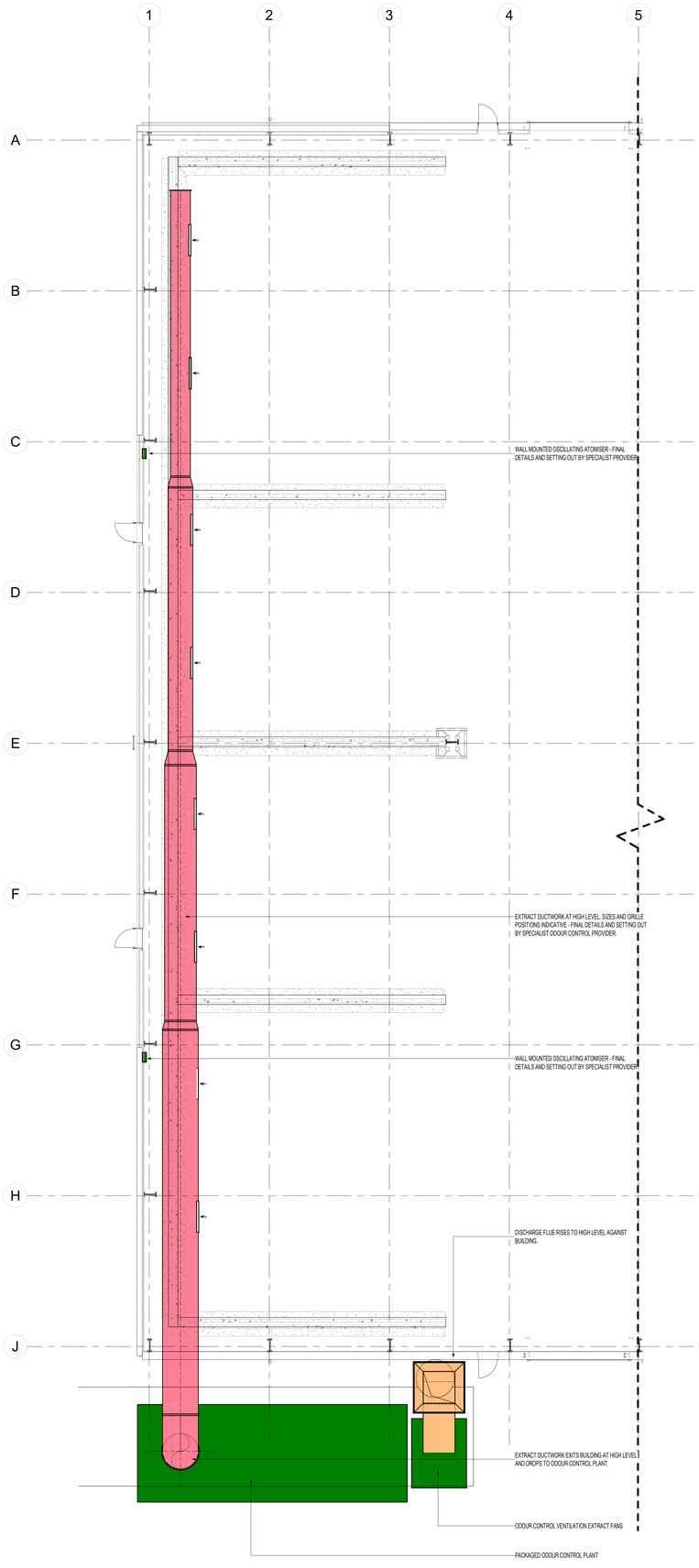
**NOTES**

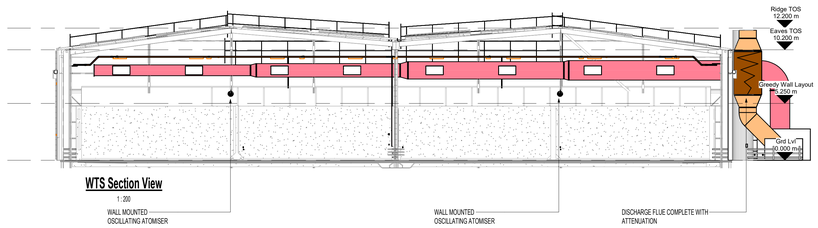
1. The odour and dust control ventilation plant shown is indicative. The final design of the odour and dust control ventilation system is by specialist sub-contractor.
2. The odour and dust suppression atomiser plant shown is indicative. The final design of the odour and dust suppression atomiser system is by specialist sub-contractor.

LEGEND

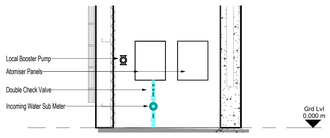
EXTRACT DUCTWORK

DISCHARGE DUCTWORK

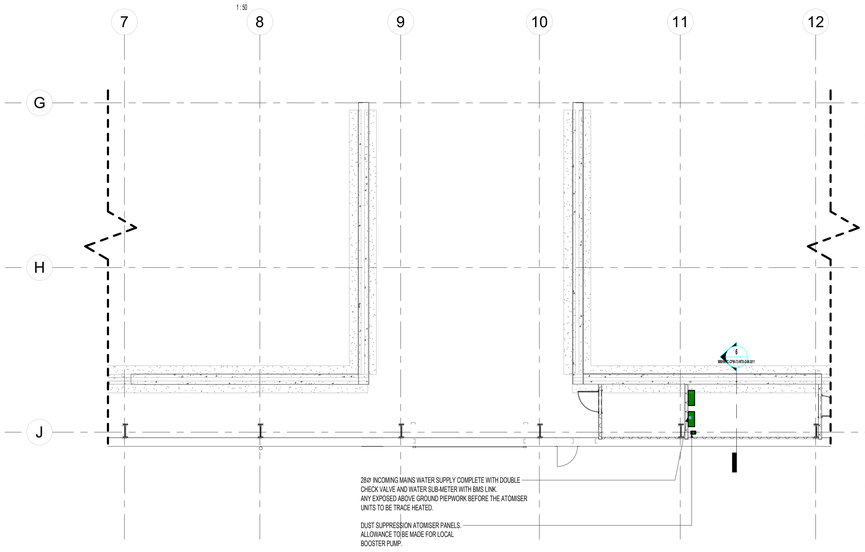


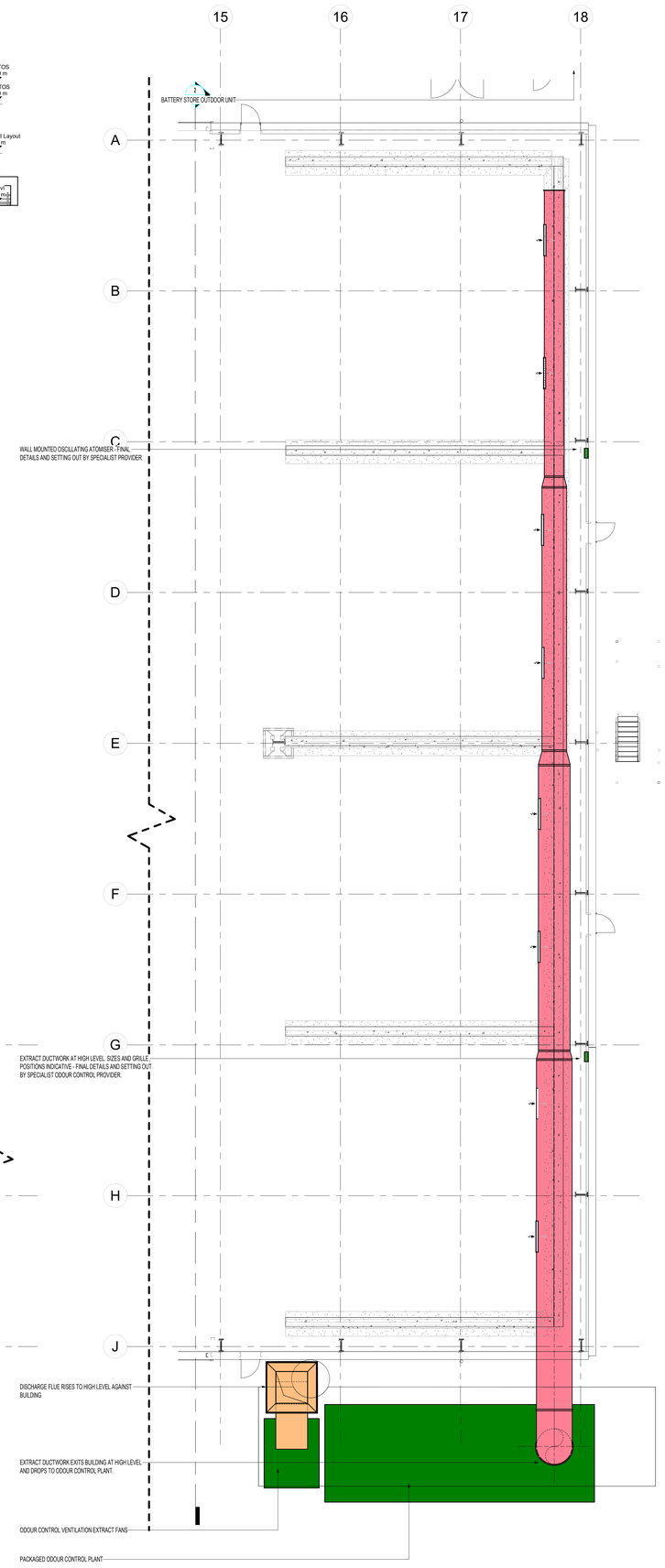




**WTS Section View**
1 : 200




**WTS Atomiser Panels**
1 : 50




| | | | | |
|---|---|---|---|---|
| P01 | 25-09-23 | Preliminary Issue | IL | MC |
| REV | DATE | DESCRIPTION | BY | VE |

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+ 44 (0) 121 709 6600
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solihull@cpwp.com

RIBA STAGE
**STAGE 4**

STATUS
**TENDER**

CLIENT
MORGAN SINDALL

PROJECT
WTC & HWRC

DRAWING TITLE
WASTE TRANSFER STATION
COMBINED MECHANICAL SERVICES LAYOUT

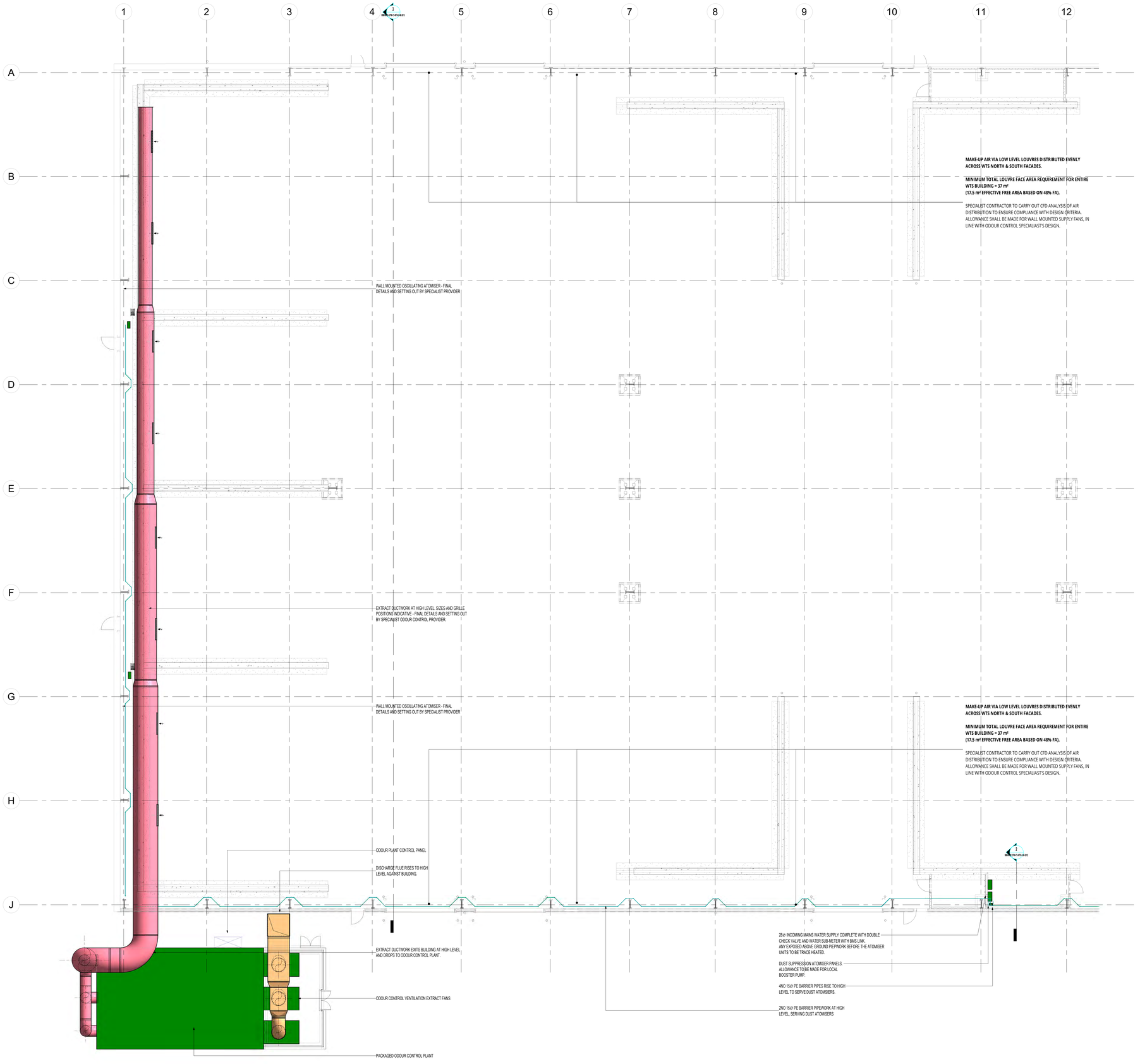
| SCALE (A0) | DATE | BY | VE |
|---|---|---|---|
| 1:100 | 24/08/2023 | WH | IL |

| Proj ID | Originator | Volume | Level | Type | Role | Number | Suitability | Revision |
|---|---|---|---|---|---|---|---|---|
| MMHWRC | CPW | 73 | WTS | D | M | 3011 | S4 | P01 |

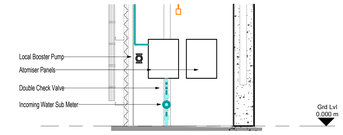
**MMHWRC-CPW-73-WTS-D-M-3011 S4 P01**

CPW Project No. 27109

LINKED FILES
MMHWRC-CDP-00-XX-G-AT
MMHWRC-HSP-20-WTS-M-S-0023




**Note: final setting out of atomiser plant by specialist.**




## WTS Atomiser Panels

1 : 50



## HEALTH AND SAFETY INFORMATION

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**Reference should be made to the DRA for further details.**

**NOTES**

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2. The odour and dust suppression atomiser plant shown is indicative. The final design of the odour and dust suppression atomiser system is by specialist sub-contractor.

LEGEND

- EXTRACT DUCTWORK
- DISCHARGE DUCTWORK

| REV | DATE | DESCRIPTION | BY | CK |
|---|---|---|---|---|
| P01 | 21.11.23 | Revised to Comments & New Architect Layout | IL | MG |

CPW
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solihull@cpwp.com

RIBA STAGE
**STAGE 4A**

STATUS
**TENDER**

CLIENT
**MORGAN SINDALL**

PROJECT
**WTC & HWRC**

DRAWING TITLE
**WASTE TRANSFER STATION**
**COMBINED MECHANICAL SERVICES LAYOUT (SHEET 1 OF 2)**

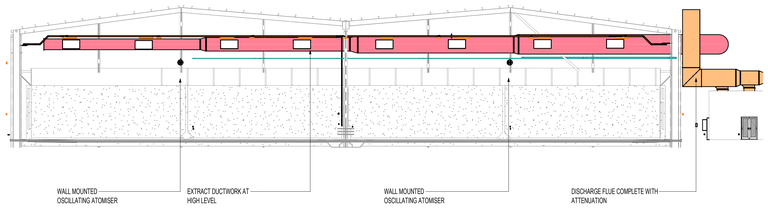
| SCALE (A0) | DATE | BY | VE |
|---|---|---|---|
| 1:100 | 24/08/2023 | WH | IL |

| Proj ID | Originator | Volume | Level | Type | Role | Number | Suitability | Revision |
|---|---|---|---|---|---|---|---|---|
| MMHWRC | CPW | 73 | WTO | D | M | 3012 | S3 | P01 |

**MMHWRC-CPW-73-WTO-D-M-3012 S3 P01**

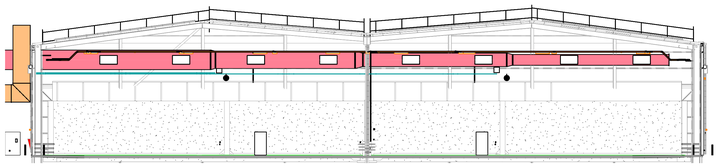
CPW Project No. 22109

LINKED FILES
MMHWRC-CDP-00-XX-G-AT
MMHWRC-HSP-20-WTS-M-S-0023



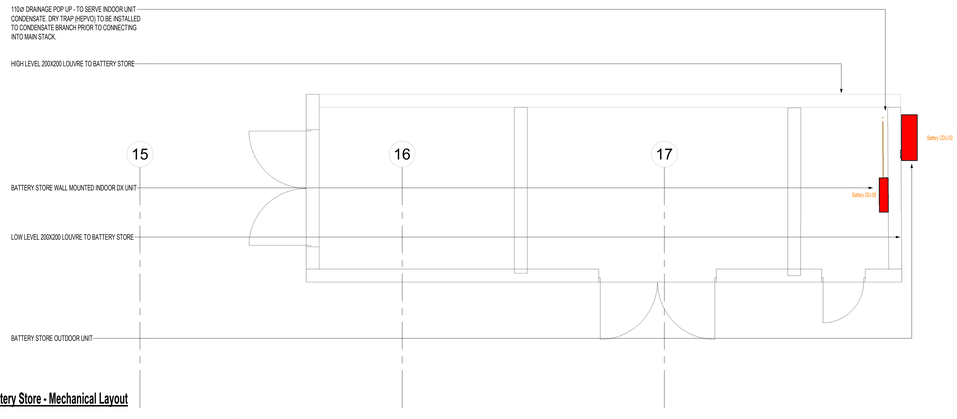

## WTS Section View (RHS)

1 : 200

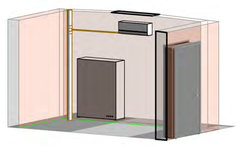


## WTS Section View (LHS)

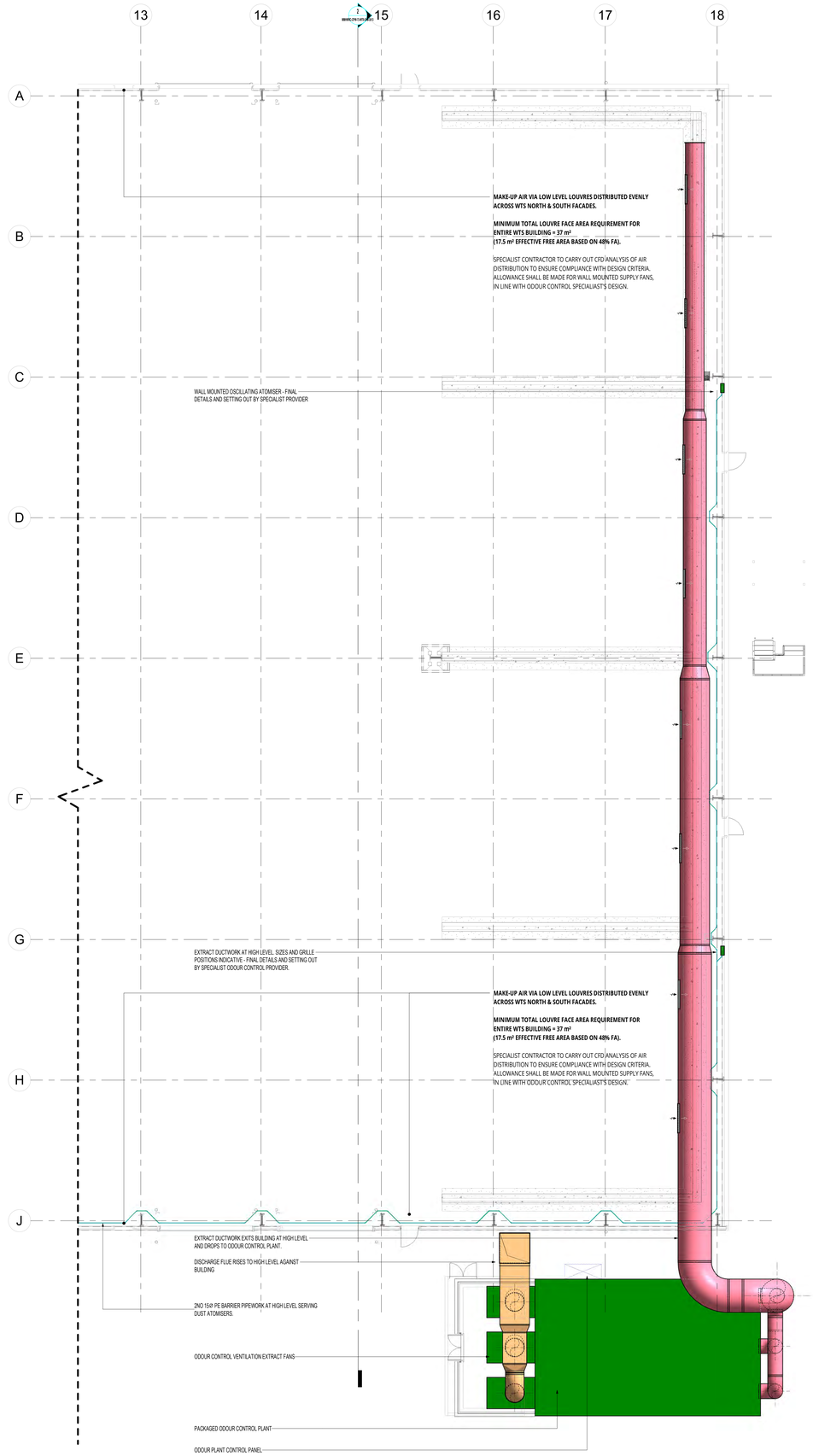
1 : 200




## WTS Battery Store - Mechanical Layout



## Battery Store 3D View



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**Reference should be made to the DRA for further details.**

**NOTES**

1. The odour and dust control ventilation plant shown is indicative. The final design of the odour and dust control ventilation system is by specialist sub-contractor.
2. The odour and dust suppression atomiser plant shown is indicative. The final design of the odour and dust suppression atomiser system is by specialist sub-contractor.

LEGEND

EXTRACT DUCTWORK

DISCHARGE DUCTWORK

| REV | DATE | DESCRIPTION | BY | VE |
|---|---|---|---|---|
| P01 | 27-11-23 | Revised to Comments & New Architect Layout | IL | MG |

www.cpwp.com
Address
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Email
solihull@cpwp.com

RIBA STAGE
**STAGE 4A**

STATUS
**TENDER**

CLIENT
MORGAN SINDALL

PROJECT
WTC & HWRC

DRAWING TITLE
WASTE TRANSFER STATION
COMBINED MECHANICAL SERVICES LAYOUT (SHEET 2 OF 2)

| SCALE (A0) | DATE | BY | VE |
|---|---|---|---|
| 1:100 | 24/08/2023 | WH | IL |

| Proj ID | Originator | Volume | Level | Type | Role | Number | Suitability | Revision |
|---|---|---|---|---|---|---|---|---|
| MMHWRC | CPW | 73 | WTS | D | M | 3013 | S3 | P01 |

**MMHWRC-CPW-73-WTS-D-M-3013 S3 P01**

CPW Project No. 27109

LINKED FILES
MMHWRC-CDP-00-XX-G-AT
MMHWRC-HSP-20-WTS-M-S-0023

The area hatched in red is to be utilised to store firewater. Gradients within the WTS floor slab (max 1 in 80) and WTS yard slab (max 1 in 30) provide a total volume of 1879m³ before overtopping of the 146.500 contour (note that the exact level may change through further detailed design). Firewater is to be routed via the proposed gradients to linear drainage channels. These channels are to outfall to a manhole fitted with a penstock. The penstock is to be controlled by an actuator linked to the buildings fire supression system, such that in the event of the sprinkler system being activated the penstock valves will be closed off, preventing fire water escaping into the drainage network.
The total volume of water requiring containment based on the sprinkler tanks is 850m³. CIRIA 736 recommends that rainfall is also considered on the surface of any external areas acing as containment. Based on Section 4.3.3 of CIRIA C736 the 4165m² external area acting as firewater storage may also be subjected to 225m³ rainfall - based on a 54mm rainfall depth for an 8 day rainfall event with a 10 year return period. No preceding event is allowed for, as penstocks will be open prior.
Based on the above, there is a requirement for 1075m³ of storage, with 1879m³ provided above slab level.

Maintain existing surface water drain and connections from Geddes site.

WTS yard slab laid to falls towards central linear drain. Firewater that cannot be contained on the WTS floor slab area to be routed into the WTS yard. Volume of firewater storage on WTS yard slab = 1259m³
Perimeter linear drains to 146.500 contour to cut off flows from remainder of yard slab.

Tank 1
910m²x1.2m deep cellular storage tank
CL 146.50 - 145.85
IL 143.72
Approx GWL 144.93
2no. layer Polystorm-R (PSM1) or similar
1no. layer Polystorm-Deep (PSM5) or similar
Installed, vented and access provision in accordance with manufacturers recommendations.

Hydrobrake limiting flows to 9.6 l/s

Penstock Chamber

SPEL P400 1C/SC full retention interceptor or similar

SVP/SS and RWP locations TBC

Sampling chamber

SPEL P010 1CSC full retention separator or similar

Canopy RWP locations TBC

Manually operated penstock within chamber

External waste storage area. Area to discharge to foul as trade effluent. Trade effluent agreement by others.

Kingspan forecourt separator or similar .

Gully to HV trench - non return valve on outlet

Area within red outline to be utilised as quarantine bay. Downstream penstock to allow flows from this bay to be shut off if required.

Vehicle wash area to fall to perimeter linear drain. Area to discharge as trade effluent via full retention interceptor (assume no detergents used). Trade effluent agreement by others.

SVP/SS and RWP locations TBC

NOTE: Linear drain sizes are based on Hauraton products. Similar products with equivalent capacity are acceptable.

Refer to drawing MMHWRC-HSP-52-D-C-1054 for manhhole schedule and general notes.

## General Notes

1. Do not scale.

2. This drawing is to be read in conjunction with Architects, Engineers & Specialist Contractors Details.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in metres unless noted otherwise.

6. This drawing is based on
- Topographical survey drawing by Waredell Armstrong drawing number CA11906-251 dated 21.06.21
- Topographical survey drawing by Mapmatic drawing number 6105-0001 dated 10.07.23.
- Proposed layout drawing by Concertus drawing number MMHWRC-CDP-30-XX-D-A-3001-P09 Site Layout

7. All survey information is provided by the surveying company and HSP cannot accept any liability for any discrepancies there in. All survey information to be verified on site by contractor. Should discrepancies be identified, HSP to be notified immediately.

8. It is assumed that the Owner or Occupier of the development will provide notice to the local sewerage undertaker of the intention to communicate flows to the public sewer, as required by The Water Industry Act (1991) as amended.

### Key

- Site boundary
- Proposed surface water drainage
- Proposed foul drainage
- Proposed trade effluent drainage
- Proposed kerb drain (Hauraton Kerbfix 305 deep or similar approved)
- Proposed Hauraton as specified (or similar approved) linear drainage
- Gravel trench
- Cellular storage attenuation tank (Polystorm as stated, or similar approved)
- Area discharging as trade effluent
- Above ground firewater storage
- Existing STW surface water sewer
- Existing STW combined sewer
- 5m STW sewer easement
- SI reference, GL - ground level, u/s MG - uderside of made ground; GW - groundwater
- Drainage to be removed

Discharge based on 5 l/s/ha.
70% run-off assumed for Solar PV area
Total - 3.92 ha - 19.6 l/s

| REV | BY | DATE | DETAILS |
|---|---|---|---|
| P08 | RH | 13.03.24 | Updated following detailed level review. Changes clouded. |
| P07 | RH | 22.02.24 | Updated following WA drawing review |
| P06 | SA | 11.12.23 | Updated to reflect latest architects layout |
| P05 | SA | 07.12.23 | Fire storage volume updated |
| P04 | SA | 27.11.23 | Amended to reflect client comments and updated site layout |
| P03 | SA | 22.09.23 | Stage 4 Issue |
| P02 | SA | 17.08.23 | Site layout updated |
| P01 | RH | 19.07.23 | First issue |

STATUS: S3 - REVIEW/COMMENT

CLIENT: Morgan Sindall

PROJECT: Middlemore Lane WTS & HWRC Walsall

TITLE: Drainage Layout Sheet 1

hsp consulting
Lawrence House, 6 Meadowbank Way, Eastwood, Nottingham, NG16 3SB
Tel: 01773 535555
www.hspconsulting.com

| SCALE | PROJECT NO. | SHEET SIZE |
|---|---|---|
| 1:250 | C4341 | A1 |

| DATE | DRAWN | CHECKED |
|---|---|---|
| 19.07.23 | RH | SA |

DRAWING NO. MMHWRC-HSP-52-D-C-1050 REV P08

Indicative vent pipe.

Canopy RWP locations TBC

KERB DRAIN

Water Level 144.75

SUPER 150 TYPE010

Gravel filter drain

SVP/SS and RWP locations TBC

SPEL P400 1C/SC full retention interceptor or similar approved

KERB DRAIN

Hydrobrake limiting flows to 2.35 l/s

3x300mmØ

2x300mmØ

H SUPER150 TYPE010

ows to 9.6 l/s

Tank 2
205m²x1.2m deep cellular storage tank.
CL 146.35 - 145.65
IL 143.360
Approx. GWL 144.00
2no. layer Polystorm-R (PSM1)
1no. layer Polystorm-Deep (PSM5)
Installed, vented and access provision in accordance with manufacturers recommendations.

Indicative vent pipe.

Existing STW sewer 0757
CL 145.32 - raise to 145.85
IL 143.85

Existing STW sewer 0708
CL 145.32
IL 143.48

Existing STW sewer 0754
CL 145.32 - raise to 145.85
IL 143.93

Existing STW sewer 0705
CL 145.35
IL 143.58
Confirm no connection to sewer and abandon

Gravel filter drain

Tarmac

H SUPER200 TYPE010

Gully to HV trench - non return valve on outlet

KERB DRAIN

Gravel filter drain

Crash Barrier Palisade fence ht 2.0m

Mesh Security Fence ht 2.0m

Refer to drawing MMHWRC-HSP-52-D-C-1054 for manhole schedule and general notes.

## General Notes

1. Do not scale.

2. This drawing is to be read in conjunction with Architects, Engineers & Specialist Contractors Details.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in metres unless noted otherwise.

6. This drawing is based on
- Topographical survey drawing by Waredell Armstrong drawing number CA11906-251 dated 21.06.21
- Topographical survey drawing by Mapmatic drawing number 6105-0001 dated 10.07.23.
- Proposed layout drawing by Concertus drawing number MMHWRC-CDP-30-XX-D-A-3001-P09 Site Layout

7. All survey information is provided by the surveying company and HSP cannot accept any liability for any discrepancies there in. All survey information to be verified on site by contractor. Should discrepancies be identified, HSP to be notified immediately.

8. It is assumed that the Owner or Occupier of the development will provide notice to the local sewerage undertaker of the intention to communicate flows to the public sewer, as required by The Water Industry Act (1991) as amended.

### Key

- Site boundary
- Proposed surface water drainage
- Proposed foul drainage
- Proposed trade effluent drainage
- Proposed kerb drain (Hauraton Kerbfix 305 deep or similar approved)
- Proposed Hauraton as specified (or similar approved) linear drainage
- Gravel trench
- Cellular storage attenuation tank (Polystorm as stated, or similar approved)
- Area discharging as trade effluent
- Above ground firewater storage
- Existing STW surface water sewer
- Existing STW combined sewer
- 5m STW sewer easement
- SI reference, GL - ground level, u/s MG - uderside of made ground; GW - groundwater
- Drainage to be removed

Discharge based on 5 l/s/ha.
70% run-off assumed for Solar PV area
Total - 3.92 ha - 19.6 l/s

| REV | BY | DATE | DETAILS | CKD |
|---|---|---|---|---|
| P07 | RH | 13.03.24 | Updated following detailed level review. Changes clouded. | RH |
| P06 | RH | 22.02.24 | Updated following WA drawing review | RH |
| P05 | SA | 11.12.23 | Updated to reflect latest architects layout | RH |
| P04 | SA | 27.11.23 | Amended to reflect client comments and updated site layout | |
| P03 | SA | 22.09.23 | Stage 4 Issue | RH |
| P02 | SA | 17.08.23 | Site layout updated | SA |
| P01 | RH | 19.07.23 | First issue | SA |

STATUS: S3 - REVIEW/COMMENT

CLIENT: Morgan Sindall

PROJECT: Middlemore Lane WTS & HWRC
Walsall

TITLE: Drainage Layout
Sheet 2

hsp consulting
Lawrence House, 6 Meadowbank Way, Eastwood, Nottingham, NG16 3SB
Tel: 01773 535555
www.hspconsulting.com

| SCALE | PROJECT NO. | SHEET SIZE |
|---|---|---|
| 1:250 | C4341 | A1 |

| DATE | DRAWN | CHECKED |
|---|---|---|
| 19.07.23 | RH | SA |

DRAWING NO. MMHWRC-HSP-52-D-C-1051
REV P07

Refer to drawing MMHWRC-HSP-52-D-C-1054 for manhhole schedule and general notes.

NOTE: Linear drain sizes are based on Hauraton products. Similar products with equivalent capacity are acceptable.

Existing STW sewer 9902
CL 145.33
IL 142.75

Existing STW sewer 9901
CL 145.33
IL 142.45

Existing STW sewer 0952
CL 145.27
IL 140.52

Connection to existing STW sewer 0952. Subject to obtaining S106 approval.

Existing STW sewer 0951
CL 145.36
IL 143.370

Existing STW sewer 0854
CL 145.29
IL 143.57

Existing STW sewer 0802
CL 145.28
IL 143.33
Confirm no connection to SW sewer and abandon

Existing STW sewer 0803
CL 145.43
IL 143.10

Existing STW sewer 0851
CL 145.34
IL 143.62

Chain link fence ht2.3m

SDS AF-X2 Aquafilter unit or similar

SPEL P300 1C/SC full retention interceptor or similar

SDS AS-10 Aquaswirl unit or similar

Canopy RWP locations TBC

Hydrobrake limiting flows to 19.6 l/s

Tank 3
755m³x1.2m deep cellular storage tank
CL 145.00 - 144.60
IL 142.260
Approx. GWL 143.99
1no. layer Polystorm-R (PSM1) or similar
2no. layer Polystorm-Deep (PSM5) or similar
Installed, vented and access provision in accordance with manufacturers recommendations.

Drain down points to foul for sprinkler tanks and pump house. Exact details TBC

Indicative vent pipe.

Indicative vent pipe.

Gravel filter drain

Gravel filter drain

KERB DRAIN

H HICAP5000

H SUPERFIL TYPE 10

H HEADER TRENCH 300

SVP/SS and RWP

Tarmac

Gravel

Concrete

Water Level 144.75

## General Notes

1. Do not scale.

2. This drawing is to be read in conjunction with Architects, Engineers & Specialist Contractors Details.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in metres unless noted otherwise.

6. This drawing is based on
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- Proposed layout drawing by Concertus drawing number MMHWRC-CDP-30-XX-D-A-3001-P09 Site Layout

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### Key

- Site boundary
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- Proposed foul drainage
- Proposed trade effluent drainage
- Proposed kerb drain (Hauraton Kerbfix 305 deep or similar approved)
- Proposed Hauraton as specified (or similar approved) linear drainage
- Gravel trench
- Cellular storage attenuation tank (Polystorm as stated, or similar approved)
- Area discharging as trade effluent
- Above ground firewater storage
- Existing STW surface water sewer
- Existing STW combined sewer
- 5m STW sewer easement
- SI reference, GL - ground level, u/s MG - underside of made ground; GW - groundwater
- Drainage to be removed

Discharge based on 5 l/s/ha.
70% run-off assumed for Solar PV area
Total - 3.92 ha - 19.6 l/s

| REV | BY | DATE | DETAILS | CKD |
|---|---|---|---|---|
| P07 | RH | 13.03.24 | Updated following detailed level review. Changes clouded. | RH |
| P06 | RH | 22.02.24 | Updated following WA drawing review | RH |
| P05 | SA | 11.12.23 | Updated to reflect latest architects layout | RH |
| P04 | SA | 27.11.23 | Amended to reflect client comments and updated site layout | |
| P03 | SA | 22.09.23 | Stage 4 Issue | RH |
| P02 | SA | 17.08.23 | Site layout updated | SA |
| P01 | RH | 19.07.23 | First issue | SA |

STATUS: S3 - REVIEW/COMMENT

CLIENT
Morgan Sindall

PROJECT
Middlemore Lane WTS & HWRC
Walsall

TITLE
Drainage Layout
Sheet 3

hsp consulting
Lawrence House, 6 Meadowbank Way, Eastwood, Nottingham, NG16 3SB
Tel: 01773 535555
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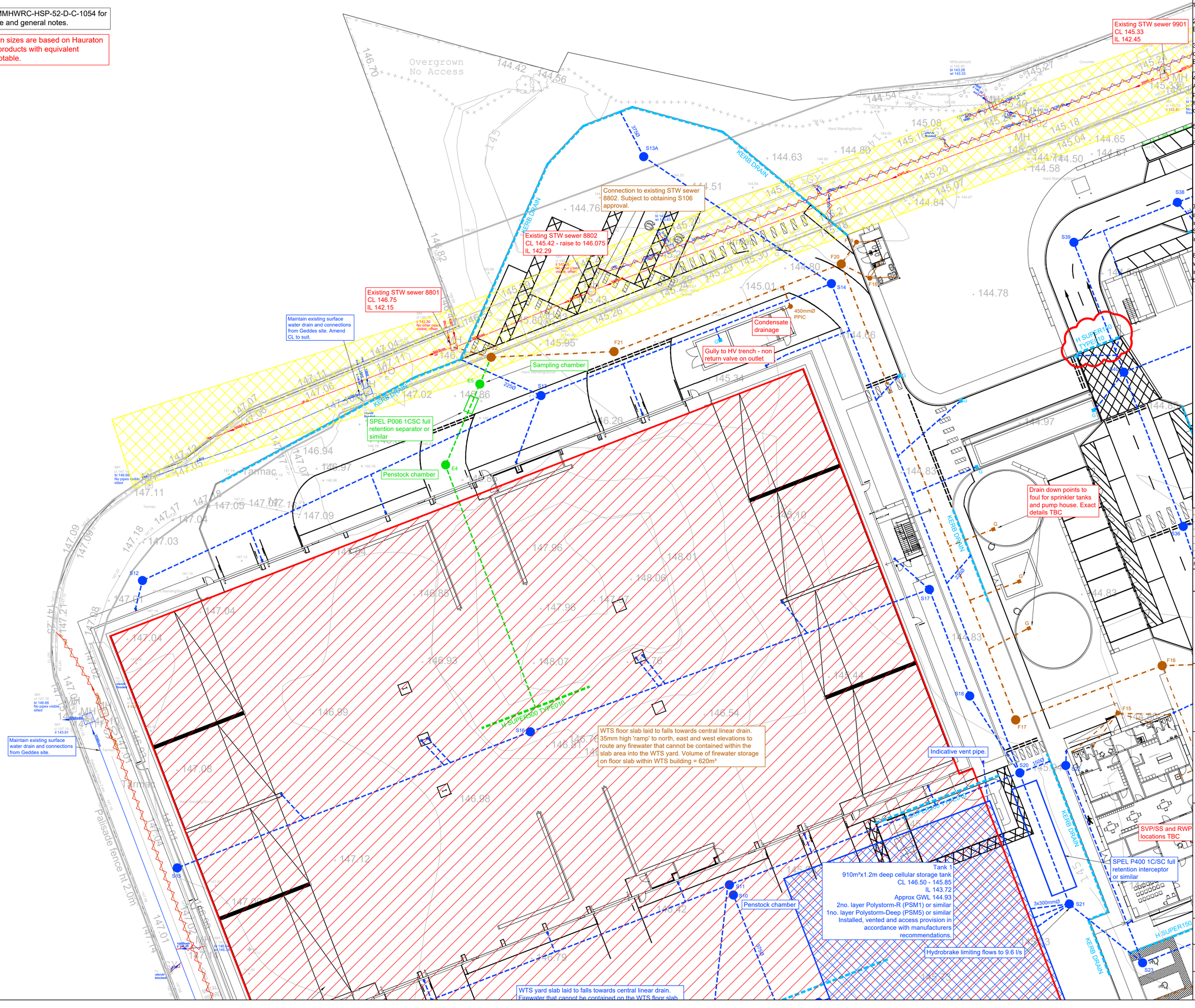
| SCALE | PROJECT NO. | SHEET SIZE |
|---|---|---|
| 1:250 | C4341 | A1 |

| DATE | DRAWN | CHECKED |
|---|---|---|
| 19.07.23 | RH | SA |

DRAWING NO. MMHWRC-HSP-52-D-C-1052
REV P07

Refer to drawing MMHWRC-HSP-52-D-C-1054 for manhhole schedule and general notes.

NOTE: Linear drain sizes are based on Hauraton products. Similar products with equivalent capacity are acceptable.




## General Notes

1. Do not scale.

2. This drawing is to be read in conjunction with Architects, Engineers & Specialist Contractors Details.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in metres unless noted otherwise.

6. This drawing is based on
   - Topographical survey drawing by Waredell Armstrong drawing number CA11906-251 dated 21.06.21
   - Topographical survey drawing by Mapmatic drawing number 6105-0001 dated 10.07.23.
   - Proposed layout drawing by Concertus drawing number MMHWRC-CDP-30-XX-D-A-3001-P09 Site Layout

7. All survey information is provided by the surveying company and HSP cannot accept any liability for any discrepancies therein. All survey information to be verified on site by contractor. Should discrepancies be identified, HSP to be notified immediately.

8. It is assumed that the Owner or Occupier of the development will provide notice to the local sewerage undertaker of the intention to communicate flows to the public sewer, as required by The Water Industry Act (1991) as amended.

### Key

- Site boundary
- Proposed surface water drainage
- Proposed foul drainage
- Proposed trade effluent drainage
- Proposed kerb drain (Hauraton Kerbfix 305 deep or similar approved)
- Proposed Hauraton as specified (or similar approved) linear drainage
- Gravel trench
- Cellular storage attenuation tank (Polystorm as stated, or similar approved)
- Area discharging as trade effluent
- Above ground firewater storage
- Existing STW surface water sewer
- Existing STW combined sewer
- 5m STW sewer easement
- SI reference, GL - ground level, u/s MG - uderside of made ground; GW - groundwater
- Drainage to be removed

Discharge based on 5 l/s/ha.
70% run-off assumed for Solar PV area
Total - 3.92 ha - 19.6 l/s

| REV | BY | DATE | DETAILS | CKD |
|---|---|---|---|---|
| P07 | RH | 13.03.24 | Updated following detailed level review. Changes clouded. | RH |
| P06 | RH | 22.02.24 | Updated following WA drawing review | RH |
| P05 | SA | 11.12.23 | Updated to reflect latest architects layout | RH |
| P04 | SA | 27.11.23 | Amended to reflect client comments and updated site layout | |
| P03 | SA | 22.09.23 | Stage 4 Issue | RH |
| P02 | SA | 17.08.23 | Site layout updated | SA |
| P01 | RH | 19.07.23 | First issue | SA |

STATUS: S3 - REVIEW/COMMENT

CLIENT: Morgan Sindall

PROJECT: Middlemore Lane WTS & HWRC Walsall

TITLE: Drainage Layout Sheet 4

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| SCALE | PROJECT NO. | SHEET SIZE A1 |
|---|---|---|
| 1:250 | C4341 | |

| DATE | DRAWN | CHECKED |
|---|---|---|
| 19.07.23 | RH | SA |

DRAWING NO. MMHWRC-HSP-52-D-C-1053 REV P07

## Drainage Construction Notes:

1. For details of ground conditions refer to the Ground Investigation Report.

2. In the absence of any other Specification, all drainage works shall be carried out in accordance with WSA Sewers for Adoption (6th Edition) and Civil Engineering Specification for the Water Industry (6th Edition). All adoptable sewer works and materials to be in accordance with "Sewers For Adoption" 6th edition and the local water companies requirements regarding sewers for adoption.

3. The position of all RWP's and foul outlets are to be confirmed by the Architect/M&E Consultant.

4. All work is to be carried out in accordance with the current British and or European standards, BS codes of Practice & Building Regulations

5. The position, line and diameter of all existing drainage apparatus should be confirmed on site prior to the commencement of the works. Any discrepancies should be reported to the engineer in writing immediately.

6. Pipe runs near buildings
If trench fill is within 1 m of the building the trench shall be filled with concrete up to its lowest level of the building.
If trench is greater than 1 m from the building the trench shall be filled with concrete up to a level below the building equal to the distance from the building less 150mm.

7. All connections to be turned in direction of flow using pipe bends.

8. Manhole covers and frames to be ductile iron medium duty grade D400 double triangular to BS EN124 and are to be grade A standard in vehicular trafficked areas.

Manhole covers and frames to be ductile iron medium duty grade B125 circular or rectangular to BS EN124 positions outside vehicular trafficked areas. Unless stated otherwise in the manhole schedule.

Manholes covers are to be recessed in block paved areas to receive the surrounding surface finish.

9. The Principal Contractor shall be responsible for checking the existing line and invert levels of any commection points for both the foul and surface water systems, prior to undertaking installation of any new drainage works. Any deviation to the levels and positions indicated on the drawing should be brought to the attention of the Project Engineer.

11. Internal inspection chambers and access fittings to be provided with lockable double sealed manhole cover and frames grade A15, B125 or D400 to BSEN124 to suit loading conditions/surfacing.

12. All polypropylene inspection chambers shall be in accordance with BS EN 13598-2:2009.

13. All drains to be tested prior to backfilling, after backfilling and upon completion of hard landscaping, in addition all drains to be inspected by CCTV methods prior to hard landscaping.

14. All drainage works within retained tree canopy are to be constructed in accordance with BS 5837:2012, the NHBC Standards and the tree preservation officers requirements.

15. Where any pipe work that is shown to be retained is found to be defective, as shown on the drainage survey, or during the course of the works, it should be repaired or replaced as neccssary.

16. All existing drainage is to be surveyed and levels are to be confirmed on site, inclusive of existing public sewerage systems. All existing connections from third-party land to be maintained.

17. All existing drainage not re-used should be grouted or removed from site. All existing live drainage connections to be maintained.

18. Proposed cover levels are relative to the finished levels. Refer to HSP Levels drawings for proposed levels and site gradients.

19. All SVPs and SSs to have roddable access fittings within 200mm above the finished floor level. All RWPs to be roddable.

20. Location of SVPs venting to atmosphere TBC by Architect and M&E consultant.

21. Where no WCs are commected to below ground foul drainage, provide 100Ø pipe at min 1/40 grade. Where at least one WC is commected to below ground foul drainage provide 100Ø at min 1/80 grade.

22. All drainage proposals (layout, discharge methodology and rate) are subject to approval from the sewerage undertaker and local planning authority.

## Contractual Notes:

1. It is the responsibility of the contractor to locate any service apparatus in the vicinity of the works. HSP Consulting Engineers Ltd will accept no claims whatsoever in respect of any losses or damage caused in respect of such apparatus

2. It is the responsibility of the contractor to execute the works at all times in strict accordance with the requirements of the Health And Safety At Work Act 1974, and the C.D.M Regulations 2015. The Contractor will be deemed to have allowed for full compliance, including full liaison with the Principal Designer, with his rates.

3. The contractor is responsible for ensuring that all works are to the satisfaction of the engineer, and shall be deemed to have included within his rates for any necessary testing.

4. The contractor will be responsible for providing all necessary de-watering and trench support to execute the works in a satisfactory mammer, and shall be deemed to have allowed for the same within his rates.

5. The contractor must ensure that the gradients indicated on the longitudinal sections are checked between the levels shown, prior to laying pipes. At no time must the contractor proceed with pipe laying by dialing the gradient shown into a laser without checking. Any discrepancy in this respect must be reported to the engineer prior to pipe laying.

6. The contractor shall check his pipe gradients by means of boning rods and traveler to verify the laser gradients

7. In the event of the above procedures not being followed, HSP Consulting Engineers Ltd will accept no responsibility whatsoever for any consequent loss or damage.

## NOTES:

### General
- This drawing is not for construction and subject to obtaining the necessary approvals.
- All RWP and SVP positions are subject to confirmation.

### Surface Water Drainage
- The surface water drainage layout is designed to ensure all surface water run-off is contained within the site during all storm events up to a 1 in 100 year return period with a 20% allowance for climate change
- Discharge to the sewer network is subject to Section 106 approval from Severn rent Water

### Foul Water Drainage
- All internal foul drainage runs to be 100Ø laid at 1 in 40.
- Foul drainage beyond the site boundary is to utilise the existing manhole within the site boundary which connects to the public foul sewer.
- Discharge to the sewer network is subject to Section 106 approval from Severn rent Water

### Trade Effluent
- Trade effluent is shown indicatively only and subject to the approval of Severn Trent Water.

### Fire Water Storage
- This approach is subject to approval by the EA

### Linear Drains/Kerb Drains
- All linear drains are to be sized based on min. 75mm/hr rainfall.
- Access fittings should be provided at the head of run and at 45m intervals.
- Silt boxes with sump to be provided on all outlets

### Cover Grades
- Linear drain and manhole cover grades to be D400 in trafficked areas. B125 covers are acceptable in landscaped areas.

### Manholes
- 450mmØ manholes to be PPIC
- PPIC chambers greater than 1.2m to invert to have reduced access.

### Existing Drains and Sewers
- Existing sewers are located within the site boundary.
- Where sewers are noted to be abandoned these are subject to the approval of STW and confirmation that no connections bewteen the combined and surface water sewers exist at these locations.
- Where cover levels are to be raised or lowered over existing sewers the method of doing so is subject to the aproval of STW. Section 185 approval may be required.
- Where existing flows from the adjacent sites to the west and north west enter the site these connections and drains are to be maintained.

### Further Sub-Contractor Info
- Penstock chamber details and actuator details linked to sprinkler system
- Rainwater Harvesting Tanks
- Cellular storage tanks - flotation checks

### Grouting
- Where pipelines are to be abandoned and filled by grouting, the lowest point of the abandoned length shall be suitably sealed, and the filling operation shall commence from that point and continue progressively so as to fill all voids completely.
- Grouting pipes shall be inserted in the line of the pipeline at intervals not exceeding 25 m. The pipelines shall be solidly filled with grout (Class G3 or G4) and the grouting pipes cut off on completion of the filling. Care shall be taken to avoid impregnation of the bedding material around the main pipeline.
- All works to be in accordance with the "Civil Engineering Specification for the Water Industry."

Surface Water MH Schedule

| MH | CL (m) | IL (m) | UMH Depth (m) | C.Depth (m) | Dia (mm) | Slope (1:X) | MH Dia (mm) | Notes |
|---|---|---|---|---|---|---|---|---|
| S1 | 148.325 | 147.200 | 1.125 | 0.900 | 225 | 225.0 | 1200 | |
| S2 | 148.380 | 147.100 | 1.280 | 1.055 | 225 | 225.0 | 1200 | |
| S3 | 149.300 | 146.878 | 2.422 | 2.122 | 300 | 243.0 | 1200 | |
| S3A | 149.500 | 148.150 | 1.350 | 1.200 | 150 | 14.3 | 1200 | |
| S4 | 149.250 | 146.565 | 2.685 | 2.385 | 300 | 242.0 | 1200 | |
| S5 | 148.100 | 146.463 | 1.637 | 1.337 | 300 | 243.0 | 1200 | |
| S6 | 147.250 | 144.960 | 2.290 | 1.915 | 375 | 321.0 | 1350 | |
| S6A | 146.450 | 145.002 | 1.448 | 1.223 | 225 | 225.3 | 1200 | |
| S7 | 146.695 | 145.645 | 1.050 | 0.900 | 150 | 74.8 | 1200 | |
| S8 | 146.125 | 144.725 | 1.400 | 1.025 | 375 | 108.8 | 1350 | |
| S9 | 146.490 | 145.315 | 1.175 | 0.950 | 225 | 225.0 | 1200 | |
| S10 | 146.350 | 144.265 | 2.085 | 1.710 | 375 | 321.0 | 1350 | Penstock |
| S11 | 146.400 | 143.990 | 2.410 | 1.810 | 600 | 500.0 | 1500 | |
| S12 | 147.200 | 145.320 | 1.880 | 1.655 | 225 | 198.4 | 1200 | |
| S13 | 146.410 | 144.863 | 1.547 | 1.247 | 300 | 321.0 | 1350 | |
| S13A | 145.700 | 144.575 | 1.125 | 0.825 | 300 | 243.0 | 1200 | |
| S14 | 146.405 | 144.220 | 2.185 | 1.660 | 525 | 500.0 | 1350 | |
| S15 | 146.495 | 145.320 | 1.175 | 0.875 | 300 | 208.6 | 1200 | |
| S16 | 146.180 | 144.919 | 1.261 | 0.886 | 375 | 330.0 | 1350 | |
| S17 | 146.410 | 144.741 | 1.669 | 1.294 | 375 | 321.0 | 1350 | |
| S18 | 146.500 | 144.692 | 1.808 | 1.433 | 375 | 321.0 | 1350 | |
| S20 | 146.380 | 143.829 | 2.551 | 1.876 | 675 | 498.2 | 1500 | |
| S21 | 146.380 | 143.720 | 2.660 | 2.510 | 150 | 150.0 | 1500 | Hydrobrake |
| S22 | 146.325 | 145.275 | 1.050 | 0.900 | 150 | 150.0 | 1200 | |
| S23 | 146.355 | 143.573 | 2.782 | 2.557 | 225 | 222.3 | 1200 | |
| S24 | 147.740 | 146.565 | 1.175 | 0.950 | 225 | 225.0 | 1200 | |
| S25 | 147.490 | 146.146 | 1.344 | 1.044 | 300 | 243.0 | 1200 | |
| S26 | 147.740 | 146.690 | 1.050 | 0.900 | 150 | 150.0 | 1200 | |
| S27 | 147.550 | 144.886 | 2.664 | 2.364 | 300 | 243.0 | 1200 | |
| S27A | 146.550 | 145.185 | 1.365 | 1.215 | 150 | 150.0 | 1200 | |
| S28 | 147.200 | 144.746 | 2.454 | 2.079 | 375 | 160.0 | 1350 | |
| S29 | 145.460 | 143.360 | 2.100 | 1.950 | 150 | 150.0 | 1350 | Hydrobrake |
| S30 | 146.025 | 143.056 | 2.969 | 2.594 | 375 | 321.0 | 1350 | |
| S31 | 145.900 | 142.961 | 2.939 | 2.489 | 450 | 405.0 | 1350 | |
| S32 | 147.075 | 145.900 | 1.175 | 0.950 | 225 | 225.0 | 1200 | |
| S33 | 147.000 | 145.738 | 1.262 | 1.037 | 225 | 12.5 | 1200 | |
| S34 | 145.655 | 142.943 | 2.712 | 2.262 | 450 | 405.0 | 1350 | |
| S35 | 145.230 | 142.814 | 2.416 | 1.966 | 450 | 490.3 | 1500 | |
| S36 | 145.200 | 142.767 | 2.433 | 1.908 | 525 | 491.0 | 1500 | |
| S37 | 147.095 | 145.920 | 1.175 | 0.950 | 225 | 225.3 | 1200 | |
| S38 | 147.095 | 145.647 | 1.448 | 1.148 | 300 | 20.6 | 1200 | |
| S39 | 146.185 | 144.900 | 1.285 | 0.985 | 300 | 9.9 | 1200 | |
| S40 | 145.200 | 142.721 | 2.479 | 1.954 | 525 | 491.2 | 1500 | |
| S41 | 144.975 | 142.519 | 2.456 | 1.781 | 675 | 496.1 | 1500 | |
| S42 | 145.270 | 143.649 | 1.621 | 1.471 | 150 | 150.2 | 1200 | |
| S43 | 144.975 | 142.460 | 2.515 | 2.290 | 225 | 225.0 | 1500 | Hydrobrake |
| S44 | 145.300 | 142.259 | 3.041 | 2.816 | 225 | 225.0 | 1200 | Demarcation |
| CP1 | 145.900 | 144.700 | 1.200 | 0.900 | 300 | 200 | 1200 | Catchpit |
| CP2 | 146.150 | 144.950 | 1.200 | 0.900 | 300 | 200 | 1200 | Catchpit |
| CP3 | 144.750 | 143.550 | 1.200 | 0.900 | 300 | 200 | 1200 | Catchpit |

Foul MH Schedule

| MH | CL (m) | IL (m) | MH Depth (m) | C.Depth (m) | Dia (mm) | Min. Slope (1:X) | MH Dia (mm) | Notes |
|---|---|---|---|---|---|---|---|---|
| F1 | 148.450 | 147.450 | 1.000 | 0.900 | 100 | 80 | 1200 | |
| F2 | 147.300 | 146.300 | 1.000 | 0.900 | 100 | 80 | 1200 | |
| F3 | 147.550 | 146.000 | 1.550 | 1.400 | 150 | 150 | 1200 | |
| F4 | 147.550 | 145.975 | 1.575 | 1.425 | 150 | 150 | 1200 | |
| ~~F5~~ | ~~147.550~~ | ~~145.950~~ | ~~1.600~~ | ~~1.450~~ | ~~150~~ | ~~150~~ | ~~1200~~ | |
| F6 | 147.600 | 145.750 | 1.850 | 1.700 | 150 | 150 | 1200 | |
| F7 | 146.500 | 145.450 | 1.050 | 0.900 | 150 | 150 | 1200 | |
| F8 | 146.450 | 145.340 | 1.110 | 0.960 | 150 | 150 | 1200 | |
| F9 | 146.450 | 144.990 | 1.460 | 1.310 | 150 | 150 | 1200 | |
| F10 | 146.500 | 144.570 | 1.930 | 1.780 | 150 | 150 | 1200 | |
| F11 | 145.800 | 144.470 | 1.330 | 1.180 | 150 | 150 | 1200 | |
| F12 | 145.300 | 144.250 | 1.050 | 0.900 | 150 | 150 | 1200 | |
| F13 | 146.325 | 145.625 | 0.700 | 0.600 | 100 | 80 | 1200 | |
| F14 | 146.150 | 145.480 | 0.670 | 0.570 | 100 | 80 | 1200 | |
| F15 | 146.325 | 145.485 | 0.840 | 0.690 | 150 | 150 | 1200 | |
| F16 | 145.450 | 144.200 | 1.250 | 1.100 | 150 | 150 | 1200 | |
| F17 | 146.250 | 144.050 | 2.200 | 2.050 | 150 | 150 | 1200 | |
| F18 | 146.400 | 145.350 | 1.050 | 0.950 | 100 | 80 | 1200 | |
| F19 | 146.400 | 145.350 | 1.050 | 0.950 | 100 | 80 | 1200 | |
| F20 | 146.300 | 143.570 | 2.730 | 2.580 | 150 | 150 | 1200 | |
| F21 | 146.300 | 143.050 | 3.250 | 3.100 | 150 | 150 | 1200 | |
| F22 | 146.150 | 142.930 | 3.220 | 3.070 | 150 | 150 | 1200 | Demarcation |

Surface Water Filter Drainage MH Schedule

| MH | CL (m) | IL (m) | UMH Depth (m) | C.Depth (m) | Dia (mm) | Slope (1:X) | MH Dia (mm) | Notes |
|---|---|---|---|---|---|---|---|---|
| LS1 | 146.500 | 145.750 | 0.750 | 0.600 | 150 | 149.8 | 450 | Catchpit |
| LS2 | 146.500 | 145.449 | 1.051 | 0.901 | 150 | 103.2 | 450 | Catchpit |
| LS3 | 146.485 | 145.150 | 1.335 | 1.185 | 150 | 149.9 | 450 | Catchpit |
| LS4 | 145.900 | 144.850 | 1.050 | 0.900 | 150 | 149.7 | 450 | Catchpit |
| LS5 | 145.460 | 144.550 | 0.910 | 0.610 | 300 | 243.0 | 1200 | Catchpit |
| LS7 | 145.460 | 144.200 | 1.260 | 0.960 | 300 | 237.1 | 1200 | Catchpit |
| LS8 | 145.300 | 144.412 | 0.888 | 0.738 | 150 | 150.0 | 450 | Catchpit |
| LS9 | 145.300 | 144.037 | 1.263 | 1.113 | 150 | 150.1 | 450 | Catchpit |
| LS10 | 145.200 | 143.760 | 1.440 | 1.290 | 150 | 149.8 | 450 | Catchpit |

Trade Effluent MH Schedule

| MH | CL (m) | IL (m) | MH Depth (m) | C.Depth (m) | Dia (mm) | Mn. Slope (1:X) | MH Dia (mm) | Notes |
|---|---|---|---|---|---|---|---|---|
| E1 | 146.600 | 145.230 | 1.370 | 1.220 | 150 | 100 | 1200 | Penstock |
| E2 | 146.600 | 145.055 | 1.545 | 1.395 | 150 | 100 | 1200 | |
| E3 | 146.525 | 144.905 | 1.620 | 1.470 | 150 | 100 | 1200 | Sampling |
| E3A | 146.600 | 145.550 | 1.050 | 0.900 | 150 | 100 | 1200 | |
| E4 | 146.450 | 144.715 | 1.735 | 1.585 | 150 | 100 | 1200 | Penstock |
| E5 | 146.250 | 144.450 | 1.800 | 1.650 | 150 | 100 | 1200 | Sampling |

| REV | BY | DATE | DETAILS | CKD |
|---|---|---|---|---|
| P06 | RH | 13.03.24 | Updated following detailed level review | RH |
| P05 | RH | 22.02.24 | Updated following WA drawing review | RH |
| P04 | SA | 27.11.23 | Amended to reflect client comments and updated site layout | |
| P03 | SA | 22.09.23 | Stage 4 Issue | RH |
| P01 | RH | 19.07.23 | First issue | SA |

STATUS: S3 - REVIEW/COMMENT

CLIENT: Morgan Sindall

PROJECT: Middlemore Lane WTS & HWRC
Walsall

TITLE: Drainage Layout
Sheet 5

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| SCALE | PROJECT NO. | SHEET SIZE A1 |
|---|---|---|
| 1:250 | C4341 | |

| DATE | DRAWN | CHECKED |
|---|---|---|
| 19.07.23 | RH | SA |

DRAWING NO. MMHWRC-HSP-52-D-C-1054 REV P06

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