

MANAGEMENT SYSTEM FOR BABRAHAM RESEARCH CAMPUS

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1.1 CLINICAL WASTE TRANSFER STATION

Collection Process

On the Babraham Research Campus site, there are a range of independent tenant companies which operate their own facilities. The process for the hazardous clinical waste stream is as follows:

Tenant companies generate waste, in accordance with the information provided by the company to Babraham Research Campus Ltd (BRC) in their waste pre-acceptance audit, within one of the streams below. This waste is placed out in one of a number of communal waste compounds across the site, from which BRC staff collect once daily.

WASTE STREAM	EWC CODE	CONTAINER	COLLECTION PROCESS	PACKAGED FOR TRANSFER TO WASTE CONTRACTOR
CL1/GM1 Infectious Clinical Waste	18-01-03*	30/60L Bio Bins, 30L Econix Bins 6L Pipette box 5L Tip box CL1 bagged waste	<ul style="list-style-type: none"> • Daily collection by BRC. • Weighed for disposal charge to tenant company. 	<p>Loaded into 770L bins, labelled as Class I Infectious clinical waste 18 01 03* for transfer to waste contractor.</p> <p>Waste Transfer Note generated on transfer to contractor.</p>
CL2/GM2 Infectious Clinical Waste	18-01-03*	30/60L Bio Bins	<ul style="list-style-type: none"> • Daily collection by BRC, once BRC has received the CL2 waste record sheet from the tenant company. • Matched to record once collected (record kept electronically) • Weighed for disposal charge to tenant company 	<p>Loaded into 770L bins, labelled as Class II Infectious Clinical waste 18 01 03* for transfer to waste contractor.</p>

				Waste Transfer Note generated on transfer to contractor.
Cytotoxic Waste & Sharps	18-01-08*	5 Litre liquid containers, Sharps waste bin, 30/60L Bio Bin	<ul style="list-style-type: none"> • Daily collection by BRC • Weighed for disposal charge to tenant company. 	<p>Loaded into 770L bins, labelled as Cytotoxic Waste 18 01 08* for transfer to waste contractor</p> <p>Waste Transfer Note generated on transfer to contractor.</p>
Class I and Class II Sharps waste	18-01-03*	Sharps waste bin (varying sizes)	<ul style="list-style-type: none"> • Daily collection by BRC • Class II sharps bins matched up to CL2 waste record sheet from company (record kept electronically) • Weighed for disposal charge to tenant company 	<p>Loaded into 770L bins, labelled as Class I & II sharps waste, 18 01 03* for disposal to waste contractor</p> <p>Waste Transfer Note generated on transfer to contractor.</p>
Anatomical Waste	18-01-03*	Bagged, frozen	<ul style="list-style-type: none"> • Daily collection by BRC • Weighed for disposal charge to tenant company. • Stored in chest freezers until a collection is due 	<p>Transferred to 770L bins, when a collection is due, labelled as Anatomical Incineration waste, 18-01-03*</p> <p>Waste Transfer Note generated on transfer to contractor.</p>

1.2 HAZARDOUS WASTE TRANSFER STATION


WASTE STREAM	EWC CODE	STORAGE METHOD PRIOR TO DISPOSAL	COLLECTION PROCESS
Hydraulic Oils	13-01-09* 13-01-10*	Oil drum, on bunded store	Generated in BRC workshops/maintenance. Waste substances transferred directly to an oil drum. Prior to disposal by hazardous waste specialist. Waste Transfer Note generated on transfer to contractor.
Engine, gear & lubricating oils	13-02-04 * 13-02-05*	Oil drum, on bunded store	Generated in BRC workshops/maintenance. Waste substances transferred directly to an oil drum. Prior to disposal by hazardous waste specialist. Waste Transfer Note generated on transfer to contractor.
Transmission Oils	13-03-06* 13-03-07*	Oil drum, on bunded store	Generated in BRC workshops/maintenance. Waste substances transferred directly to an oil drum. Prior to disposal by hazardous waste specialist. Waste Transfer Note generated on transfer to contractor.
Waste Electrical Items (WEEE)	20-01-35* 20-01-36 13-02-13* 16-06-01* 16-06-02* 16-06-03* 16-06-04 16-06-05 16-02-11* 16-02-13*	Dedicated storage Bay	<ul style="list-style-type: none"> • Daily collection from tenant companies and internal BRC facilities • Weighed for disposal recharge • Stored in a dedicated, under cover, storage bay prior to collection by specialist waste company. • Waste Transfer Note generated on transfer to contractor.
Used COSHH Container Wastes (Solvents, Paints, adhesives sealants containers – with residue)	15-01-10*	Bunded COSHH store	Generated in BRC workshops/maintenance. Waste substances transferred directly to an oil drum. Prior to disposal by hazardous waste specialist. Waste Transfer Note generated on transfer to contractor.

1.3 SITE INFRASTRUCTURE - WASTE YARD LAYOUT PLAN

WASTE YARD PLAN

WASTE LOCATIONS

 DRY MATTER RECYCLING COMPACTOR


 GLASS WASTE SKIP


 CLINICAL WASTE PROCESSING & STORE

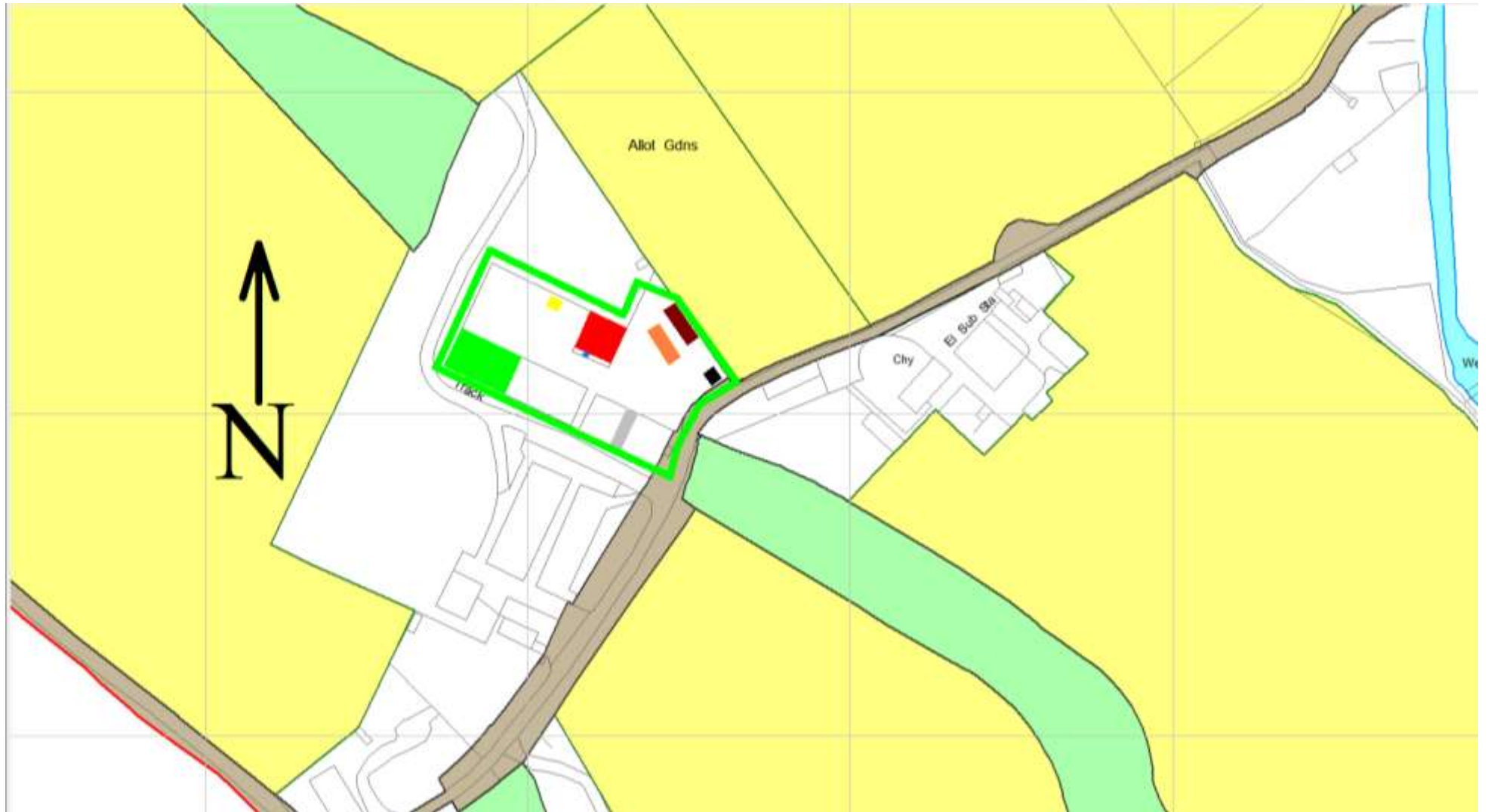
 WASTE ELECTRICAL ITEMS

 GENERAL MUNICIPAL COMPACTOR

 HAZARDOUS WASTE BUNDED CONTAINER

 MUNICIPALE OFFENSIVE STORAGE

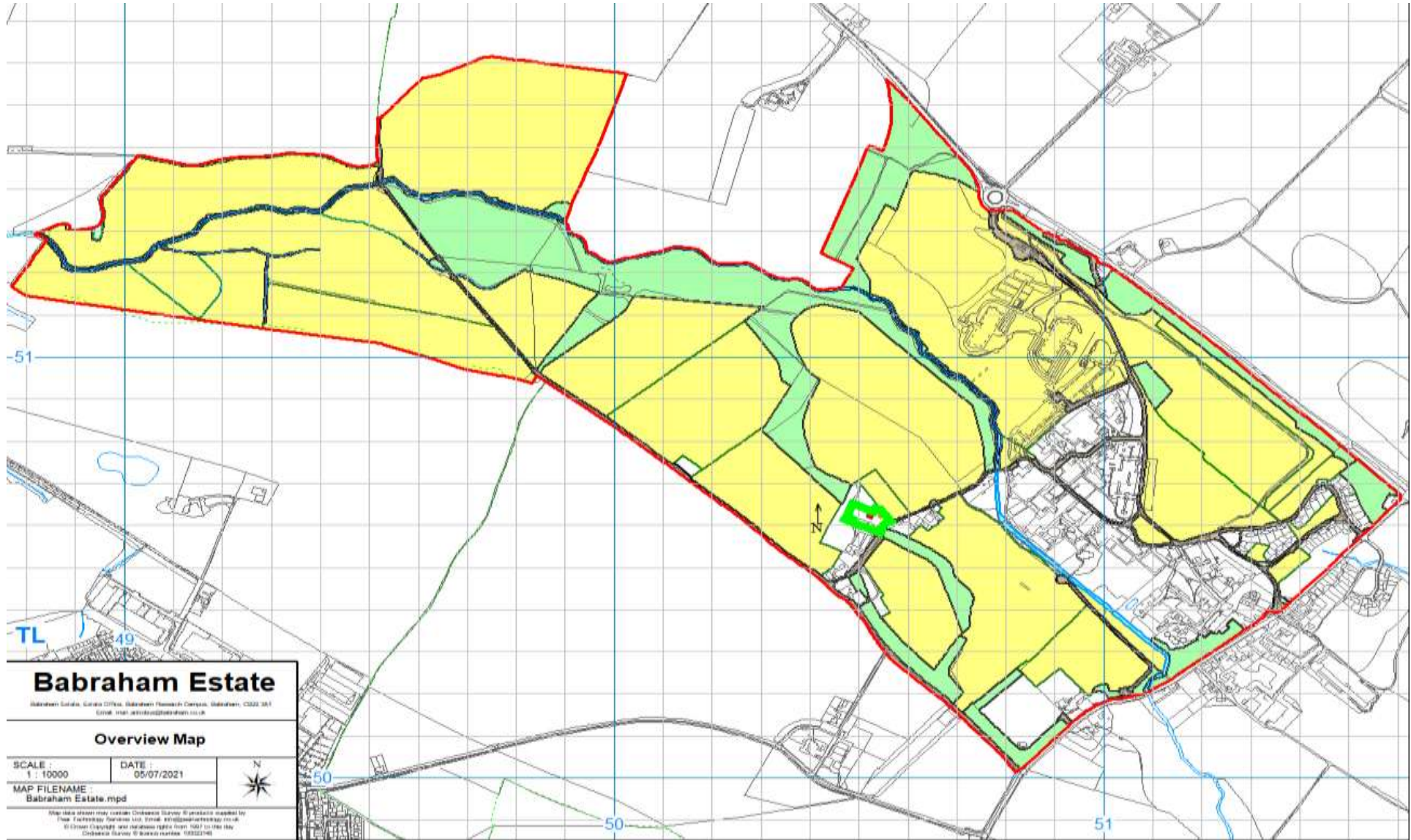
 COMPOSTABLE WASTE PROCESSING



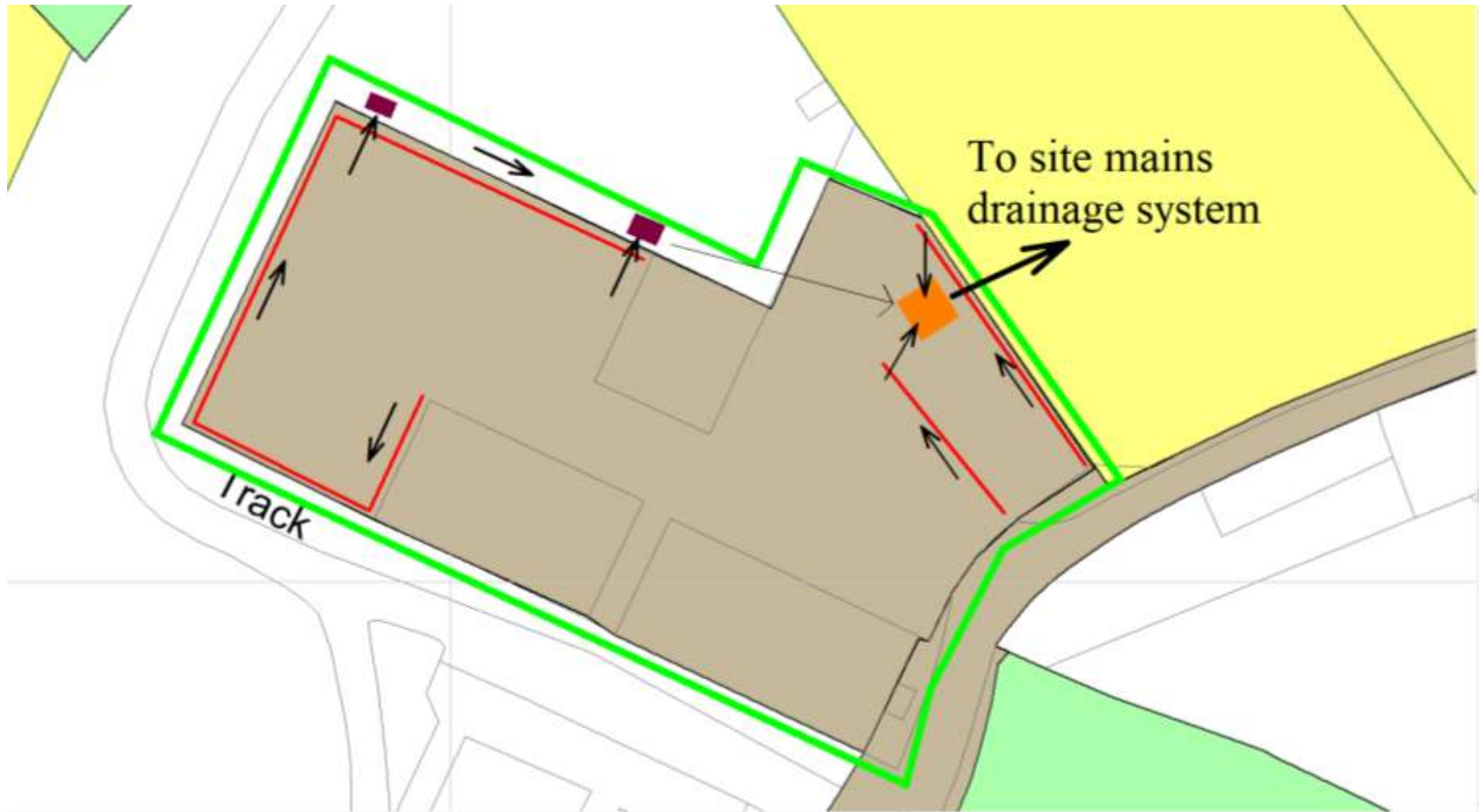
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1.4 SITE INFRASTRUCTURE - OVERALL SITE BOUNDARY PLAN




1.5 VULNERABLE LOCATIONS, DRAINAGE AND SERVICES PLAN



Grey area = Hard surfacing (concrete)


WASTE LOCATIONS

 Run off interceptor tank

 WASTE YARD OUTLINE

 Drainage direction flow

 Chamber

 ACO Drainage channel

1.6 SITE OPERATIONS – RISK ASSESSMENT FOR EACH ACTIVITY

Document History

Date (DD/MM/YYYY)	06.05.2021	Risk Assessment Number	Version 1.0
Date of Next Review	01.01.2022	Signature	

Document Information

Group or Area of Operation	Estates
Building and Room Numbers Where Work Will Take Place	Campus Wide
Title of Risk Assessment	Waste Collection

Version History

Version History	1.1
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General and Special Emergency Procedures

Fire	In the event of a fire Campus fire procedures will be followed (see local policy) and visitors, contractors, engineers etc. MUST be evacuated to the rendezvous point for the building in which they are working. Details of local procedure will be provided on the noticeboard in each area.
First Aid	The emergency number 01223 496662 (Ext. 1111) is to be dialled for a first aid response. Please provide details of location and what has occurred. All adverse events must be reported through the adverse events web which can be found on the Concept Reach Portal

Evaluation of Risks and Controls

Hazard	Who Might Be Harmed and How	Existing Controls	Recommendations	Priority
<p>Collection of Biological Waste Including GM2 Waste</p>	<p>A risk arises from exposure from category one and category two micro-organisms present within laboratory waste.</p> <p>There is a very small risk of exposure to more harmful human pathogens including Hepatitis B and C and HIV if material contaminated with either of these micro-organisms is mistakenly brought onto campus.</p> <p>The general requirement to provide a safe working environment free of the risk of infection is contained within The Health and Safety at Work etc. Act 1974.</p> <p>Exposure to micro-organisms contained within biological waste are covered by the Control of Substances Hazardous to Health Regulations 2002 under biological agents. These are defined as any micro-organism, cell culture, prion or human endo-parasite whether or not genetically modified which may cause infection, allergy or toxicity or otherwise create a hazard to human health. The general requirements of COSHH include risk assessment and prevent or control apply to the collection of biological waste.</p> <p>Further requirements within COSHH relate to work with biological agents within</p>	<p>Clear instructions are provided to tenants on the disposal procedure for hazardous biological waste.</p> <p>Only Class 1 waste can be disposed of through the yellow Euro laboratory waste bins.</p> <p>DNA and protein gels and ethidium bromide absorption pads can be disposed of through the yellow waste bins. All other chemicals must be disposed of through the appropriate leak free container which must be clearly marked and stored in the area behind the stores for processing waste chemicals.</p> <p>Waste will only be collected when a form has been filled in declaring the contents of the bag and an official sticker has been attached.</p> <p>Plastics including pipette tips, used gloves etc. can be disposed of through the yellow Euro waste bins but racks or boxes must NOT be disposed of through this route.</p> <p>Any incident involving the incorrect disposal of biological waste is recorded as a near miss event and is investigated.</p> <p>A policy and guidance document including guidance on the handling of sharps is available on request.</p>	<p>Operators are reminded they are free to reject any waste consignment that does not comply with campus rules on biological waste disposal. Staff must not place themselves at unnecessary risk.</p> <p>In the event of a breach in campus waste collection rules tenants will be warned of their contractual responsibilities to adhere to campus health and safety rules.</p> <p>A simple tool box talk for biological hazards needs to be developed and presented to the estates staff.</p>	<p>High</p> <p>High</p> <p>High</p>

	laboratory areas and is worth noting for this risk assessment. These include:			
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Hazard	Who Might Be Harmed and How	Existing Controls	Recommendations	Priority
Collection of Biological Waste Including GM2 Waste	<p>a) classification of micro-organisms in accordance with hazard grouping – HG1 is least hazardous and HG4 is most hazardous</p> <p>b) implementation of control measures in accordance with hazardous group classification</p> <p>c) listing of employees exposed to certain biological agents</p> <p>d) notification of the use of biological agents to the HSE</p> <p>e) notification of the consignment of biological agents.</p> <p>The exposure and infection of the individual from certain biological agents including Hepatitis B and C and HIV are reportable under The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013.</p>	<p>A policy and guidance for manual handling is provided which clearly details the lifting range in which operators are asked to work within.</p> <p>Staff are instructed to reject biological bins weighing in excess of ten kilograms.</p> <p>Staff are instructed to reject any biological waste bin that has not been sealed correctly.</p>	Recommendations are discussed above	N/A
Exposure to Sharps	<p>The risk arises from a member of staff suffering a needle stick injury. The risk is further increased if the needle is contaminated with a blood borne pathogen including Hepatitis B or C or Human Immunodeficiency Virus (HIV)</p> <p>The general requirement to provide a safe place of work and conduct an appropriate risk assessment is discussed in the section above.</p>	<p>Sealed and enforced sharps bins conformant with BS7320:1990, UN3291, AFNOR NFX 30-500 and ISO 9002 standards are available which are marked with appropriate fill level which must not be exceeded. These must not be disposed of inside the yellow laboratory waste bins.</p> <p>Broken glass must be disposed of through the sharp bins provided.</p>	<p>A simple tool box talk for biological hazards needs to be developed and presented to the estates staff.</p> <p>Staff are reminded to monitor behaviour of tenants with regards to the disposal of waste and to report any incidents where the campus waste rules are not being followed.</p>	<p>High</p> <p>Medium</p>

	The legal requirement to protect staff from hazardous substances is covered by the COSHH regulations as discussed above.	Staff are instructed to reject any sharp bin that has been over filled or cannot be sealed correctly		
Hazard	Who Might Be Harmed and How	Existing Controls	Recommendations	Priority
Exposure to Sharps	The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 place a responsibility on the employer to prevent injury from needle stick injuries. This does not directly apply to BBT and the estates department but it does impose upon tenants the responsibility to avoid using medical sharps where possible and, if this is not feasible to prevent or minimise risk as far as possible	Controls are described above	Recommendations are discussed above	N/A
Incorrect Manual Handling of Waste Bins	<p>A risk arises from the development or aggravation of work-related upper limb disorders and repetitive stress injuries. These conditions may give rise to aches, cramp, tenderness, stiffness, weakness, tingling, numbness and swelling.</p> <p>The general requirement to provide a safe place of work and conduct an appropriate risk assessment is discussed in the section above.</p> <p>Manual handling is covered within the Manual Handling Operation Regulations 1992 which requires the employer to undertake an appropriate risk assessment and implement appropriate controls.</p>	<p>Manual handling training is provided to all estates staff by a trained manual handling trainer. All training is recorded and held with human resources.</p> <p>The moving on large 1100 litre wheeled waste bins has been risk assessed by a competent ergonomist. Staff are instructed to work as pairs in order to lessen the load being transported.</p> <p>The waste collection and processing system is currently being reassessed with a view to making it less physically demanding.</p>	Staff are reminded to request help when it is required. It is important that staff do not attempt to move heavy bins and risk injury.	High
Chemical Waste Disposal Including Cytotoxic Waste	The task of chemical waste collection presents several risks associated with the nature of the chemical and the physical exertion (manual handling) associated with	COSHH assessments are available for some commonly used chemicals. A COSHH database is also available for reference.		

	the collection and disposal of chemical waste.			
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Hazard	Who Might Be Harmed and How	Existing Controls	Recommendations	Priority
Chemical Waste Disposal Including Cytotoxic Waste	<p>Incidents relating to exposure to chemical waste may range from mild skin, eye or respiratory irritation to long term health effects and potentially death. A characteristic of many carcinogenic, mutagens and teratogens are the long-term effects which manifest many years after exposure.</p> <p>There is a small risk of contamination through needle stick injury if sharps are incorrectly disposed of through the normal waste route.</p> <p>Liquid chemical waste is stored in large 10 litre vessels that are stored on shelves in a chemical waste cabinet. Often the vessels are stored on shelves that are at face level to the operator thus placing the operator at increased risk of chemical splash if the vessel is not stored correctly.</p> <p>The loading and unloading of chemical waste vessels is a daily undertaking that involves repetitive movement of the upper body. Over time this may result in the development of repetitive stress injuries – a series of physical conditions that impact upon the individual’s quality of life.</p>			

Monitor and Review

The risk assessment will need to be reviewed:

- One year from the date of issue or
- If there has been a significant change in the hazard profile of these areas or
- A significant in legislation

Declaration by Manager

I confirm that I have considered and understood the hazards associated with this particular task and am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to as low a level as reasonably practicable.

Print Name: M. Antrobus

Signature:



Date: 06.05.2021

1.7 SITE OPERATIONS – WASTE STORAGE PLANS

- the longest amount of time that you will store each type of waste

Hazardous Clinical Waste:

Stream	Longest time of storage on site prior to transfer
Class I/GM1 Infectious Clinical waste	Two weeks
Class I/GM1 Infectious Clinical Sharps Waste	1 month
Class II/GM2 Infectious Clinical Waste	Two weeks
Class II/GM2 Infectious Clinical Sharps Waste	1 month
Cytotoxic Waste/Sharps	1 month
Anatomical	1 month
Municipal Offensive	1 month

Hazardous Waste:

Stream	Longest time of storage on site prior to transfer
Hydraulic Oils	1 year
Gear, Engine & Lubricating Oils	1 year
Transmission Oils	1 year
Waste Electrical Items (WEEE)	4 months
Used COSHH substance containers for disposal	6 months

- how you will make sure you will not exceed these time limits – you need to consider your emissions when deciding how long you can store types of waste for

For all of the hazardous clinical waste streams, we have routine collections set up with our disposal company (twice weekly) to prevent build up of waste.

For the hazardous waste, we have a bunded store and arrange a collection for transfer to a specialist on reaching a set level in the store (well short of the maximum holding amount)

- the maximum amount of each type of waste you will store in terms of volume

Hazardous Clinical Waste:

Stream	Maximum amount of waste to be stored at any one time (Tons)
Class I/GM1 Infectious Clinical waste	3
Class I/GM1 Infectious Clinical Sharps Waste	0.5
Class II/GM2 Infectious Clinical Waste	0.8
Class II/GM2 Infectious Clinical Sharps Waste	0.2
Cytotoxic Waste/Sharps	1.5
Anatomical	1.25
Municipal Offensive	0.2

Hazardous Waste:

Stream	Maximum amount of waste to be stored at any one time (Tons)
Hydraulic Oils	0.2
Gear, Engine & Lubricating Oils	0.2
Transmission Oils	0.1
Waste Electrical Items (WEEE)	2
Used COSHH substance containers for disposal	1

- the maximum height of each storage pile on site

60L Bio Bins to be stacked four high maximum in the event of longer term storage (should there be a break in disposal contractor service for any reason).

- how you will identify the specific types of waste you are storing

All waste streams are colour coded, as well as labelled on the Campus site. The bins for storage & transfer in the waste yard are also labelled to the content.

Class I Clinical waste and Sharps	Yellow lidded bins, sharps containers and demarked bags
Class II Clinical waste and Sharps	Red lidded bins and sharps containers
Cytotoxic	Purple lidded bins and sharps containers
Anatomical	Red labelled bags/bins
Municipal Offensive	Yellow labelled bags

- how you will separate different types of waste if required, for example how far apart you will keep [waste types that cannot be mixed](#)

Storage in 770L/1100L bins, labelled and separated for each waste stream.

- how you will make sure your site only takes waste that your permit allows you to store

Co-ordinated with tenant companies and regular waste audits to confirm companies are conforming with the agreement & procedure for waste. Check of waste label & container type on collection.

1.8 CONTINGENCY PLANS

Contingency plans

How you will minimise the impact on the environment of any:

- **breakdowns**

Within our own on site processes, we have a range of vehicles that can be used for clinical waste collections in the event of a breakdown.

Should the disposal company be unable to collect waste for any reason – there is secure, undercover storage space that could be used to store up to two months worth of waste.

- **enforced shutdowns**

Should the site have to reduce operation, for example under Covid regulations as a recent example – we have contingency plans for staff provision and cover for collection and processing of clinical waste.

Should the site have to under go complete shut down, tenant companies would not be operating and therefore not generating any clinical waste for disposal.

- **any other changes in normal operations, for example due to flooding or other extreme weather**

The waste storage site is on raised ground, out of any flood plain zones. Waste storage and processing is all under cover in a secure fenced yard with access controlled gates.

1.9/2.0 ACCIDENT PREVENTION & MANAGEMENT PLAN & CLIMATE CHANGE CONTINGENCY

Document History

Date (DD/MM/YYYY)	23.11.2021	Risk Assessment Number	
Date of Next Review	23.11.2022	Signature	

Document Information

Group or Area of Operation	Campus
Building and Room Numbers Where Work Will Take Place	BRC Managed Buildings
Title of Risk Assessment	Environmental Risk Assessment

Residual Risk Matrix (R)

Likelihood (L)	5 High	5	10	15	20	25
	4 Medium-High	4	8	12	16	20
	3 Medium	3	6	9	12	15
	2 Low-Medium	2	4	6	8	10
	1 Low	1	2	3	4	5
		1 Low	2 Low-Medium	3 Medium	4 Medium-High	5 High
		Impact (I)				

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
<p>The release of substances that are both hazardous to health and to the environment as a consequence of fire damage to BRC Buildings.</p>	<p>The outbreak of fire is considered a low probability but high impact hazard with short, medium and long-term impacts on business continuity and the environment.</p> <p>There are a number of ways in which fire may break out:</p> <ol style="list-style-type: none"> 1. Through the development of electrical faults either through faulty wiring, the use of equipment unsuitable for the task or through the failure to maintain and PAT test equipment. 2. Through the storage of incompatible materials such as oxidising and flammable materials. 3. Through a failure to safely manage hot works on Campus 4. Through natural phenomenon such as lightning strikes 4. Through acts of arson or terrorist activities. <p>The impacts will include:</p> <p>Potential Loss of Life</p> <ol style="list-style-type: none"> 1. Through inhalation of smoke and fumes from the combustion process. 2. Expose to extreme heat 3. Collapse of structures <p>Environmental Impact</p> <ol style="list-style-type: none"> 1. Through release of toxic smoke and fumes into the environment which will potentially be lifted by the wind and transported to nearby built up and natural areas. 2. Through contaminated water run off entering the water system and causing ecological damage to the nearby River Granta ecosystem. <p>Business Continuity</p> <ol style="list-style-type: none"> 1. Loss of business to tenants. 2. Loss of revenue to BRC. 	1	5	5	<p>Electrical Safety</p> <p>The following controls have been implemented to ensure electrical safety within BRC owned buildings.</p> <ol style="list-style-type: none"> 1. All electrical wiring is subject to fixed wiring testing every five years in accordance with the Requirements for Electrical Installations – BS7671 (IEE Wiring Regulations) 2. All electrical work undertaken by electrical engineers who are in possession of appropriate City and Guilds qualifications. 3. All equipment that is brought into BRC buildings for use within these buildings must be PAT tested before use. 4. Plant equipment is subject to planned preventative maintenance (PPM) with components replaced as required. 5. RCBO's are installed throughout BRC buildings and are designed to prevent electrical surges that may result in the development of fire. 6. Lightning conductors are installed in all BRC buildings and regularly maintained. <p>Fire Mitigation</p> <p>All BRC buildings are constructed with multiple layers of fire safety that exceeds the general requirements for building fire safety.</p> <p>In addition to general fire compartmentalisation that provides one hour of fire resistance there are similar fire resistance structures separating floors to prevent the vertical spread of fire and a Category P1 fire alarm system that monitors each building and provides early warning to the outbreak of fire.</p> <p>The effect that the fire resistance and detection systems will have in relation to preventing environmental pollution will be to allow the emergency services to tackle the fire at the earliest point thus reducing the potential amount of contaminated run off.</p> <p>Contaminated runoff that is produced would be controlled several ways:</p> <ol style="list-style-type: none"> 1. The underground infrastructure provides a number of fail safes to prevent contaminated water from entering the water table including petrol separation units and soakaway units. 2. Drain guards that provide a physical barrier preventing contaminated water from entering the water table. <p>Chemical Incompatibility</p> <p>The following information has been developed to instruct staff on appropriate chemical storage:</p> <ol style="list-style-type: none"> 1. COSHH assessment in relation to environmentally hazardous chemicals. 2. DSEAR assessments in relation to flammable, explosive and oxidising chemicals that might be released into the environment. 3. Guidance on incompatible chemicals in relation to the risk of fire and release into the environment. 4. Chemical database encompassing approximately 1000 commonly or less commonly used laboratory chemicals. 	1	2	2	<p>Annual reviews of fire risk assessments, policies and emergency procedures are required.</p> <p>Ensure continued planned preventative maintenance (PPM) of fire mitigation systems on Campus</p>

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
The release of substances that are both hazardous to health and to the environment as a consequence of fire damage to BRC Buildings.	As described above	1	5	5	<p><u>Hot Works</u></p> <p>The following controls have been implemented to ensure hot works are correctly managed.</p> <ol style="list-style-type: none"> Hot works are managed through a permit to work system. Firefighting equipment is made available to the contractor if required. Safety checks are made before work commences and an hour after work has finished. Only competent contractors vetted through safety in procurement and who have completed the pre-qualification questionnaire are selected. Work cannot commence before risk assessments and method statements (RAMS) have been received. <p><u>Lightning Strikes</u></p> <p>All BRC buildings have lightning mast that allow the safe dissipation of lightning energy. All masts are inspected and maintained through planned preventative maintenance.</p> <p><u>Arson</u></p> <p>Babraham Campus is monitored through 24-hour security surveillance throughout the year.</p>	1	2	2	As described above
Accidental release of hazardous chemicals into the water system	<p>The accidental release of a significant volume of hazardous chemicals into the local water system is considered to be a very low risk with a moderate impact upon the local environment.</p> <p>There are several routes in which laboratory chemicals may be released into the environment:</p> <ol style="list-style-type: none"> Through spillage during the replenishment of stock in the chemical storage areas. Through deliberate release such as pouring chemicals down the sink or drain. Through failure of the water treatment facilities located on campus. Through trespassing and illegal dumping of chemicals. <p>Health Impacts</p> <p>Many of the chemicals used in laboratories are extremely hazardous at low concentrations and may result in cytotoxic effects or in some cases may be linked with the development of cancer or damage to the reproductive system.</p> <p>Environmental Impacts</p> <p>Many chemicals are toxic to aquatic life and have may have an accumulative effect within the food chain resulting in long-term and often permanent damage to local wildlife.</p>	1	4	4	<p><u>Spillage During Stock Replenishment and Storage</u></p> <p>Chemical storage rooms have been designed with two functions in mind in relation to minimising environmental impact:</p> <ol style="list-style-type: none"> To provide appropriate containment of spillages. To prevent ignition of flammable fumes and outbreak of fire. <p><u>Containment of Spillages</u></p> <p>Chemical storage rooms are designed to include bunded areas. Bunded areas consist of small pits approximately three inches lower than floor level with a grate fitted over to allow storage vessels to be stored directly above. There are no drainage points within the bunded areas therefore spillages are contained.</p> <p>For the storage of chemicals BRC either purchases or advises tenants to purchase chemical storage vessels that are rated to BS EN 14470-1:2004 standards. Contained within each cabinet is a bunding facility that is designed to contain a spillage greater than the largest container (usually 2.5 litres).</p> <p>Tenants are instructed to ensure that under no circumstances must the volume of flammable substances stored within each cabinet exceed 50 litres.</p> <p>Spill kits are available in each BRC managed building. Spill kit training has been provided to tenant companies.</p> <p><u>Ignition Mitigation</u></p> <p>Designated storage rooms that have been designed in accordance to Schedule 2 of DSEAR 2002 and which incorporates:</p>	1	2	2	<p>Ensure that spill kits are fully stocked in all BRC managed buildings.</p> <p>Training on the use of spill kits to be arranged where necessary.</p>

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
Accidental release of hazardous chemicals into the water system	As described above	1	4	4	<p>a) Spark free electrical systems including an extraction system rated to Zone 2</p> <p>b) Louvered doors to ensure that solvent fumes are removed through the natural movement of air</p> <p>c) Fire mitigation that includes fire detection and appropriate fire extinguishers for chemical fires</p> <p><u>Sink Disposal.</u></p> <p>A policy has been developed for the safe disposal of materials down the sink. Tenants and staff have been instructed that the following may safely be disposed of down the sink:</p> <ol style="list-style-type: none"> 1. Less than 100ml acids and alkalis that have been diluted with copious amounts of water. 2. Tissue culture supernatant inactivated using an appropriate substance and diluted with copious amount of water. 3. Cleaning chemicals that are safe to the environment and diluted in accordance with MSDS instructions and diluted with copious amounts of water 4. Only soiled water from handwashing sinks can be disposed down the sink <p>The following must NOT be disposed of down the sink</p> <ol style="list-style-type: none"> 1. More than 100ml 1M acids and alkalis. 2. All other chemicals other than acids and alkalis 3. Ethidium Bromide buffer solution 4. Cooking greases and oils <p><u>Failure of Water Treatment</u></p> <p>The water supply to the 900 series building is provided by mains supply through Cambridge Water. A central borehole and water extraction/treatment facility provides water to the rest of the Campus.</p> <p>A petrol capture system is in place to ensure that petrol leakage is prevented from entering the borehole supply. Systems are in place to ensure that potential contamination is captured before it is allowed to enter the borehole supply.</p>	1	2	2	As described above
Accidental Release of Biological Waste	<p>A very small risk exists from the accidental or deliberate act of releasing biological waste into the environment. Much of the waste that would be released would be non-biodegradable.</p> <p>There are several routes in which biological waste could potentially be released:</p> <ol style="list-style-type: none"> 1. Through a damaged biological waste receptacle. 3. Through overfilling of waste bins 2. Through deliberate release as an act of vandalism. <p>Health Impacts</p> <p>Biological waste can present several hazards:</p> <ol style="list-style-type: none"> 1. Exposure to biological agents up to category two bio-containment. 2. Exposure to various chemical agents including cytotoxic and environmentally toxic chemicals. 	1	3	3	<p><u>Spillage Through Damaged Waste Receptacle</u></p> <p>If operators notice that a lid to a bio-waste bin has been damaged they will remove the waste bin from service.</p> <p>Biological materials on campus are classified as Category B which is an infectious substance that does not meet the criteria for inclusion into Category A and therefore must be assigned to UN 3291. Therefore, all bio-waste receptacles that are used on Campus must meet the requirements of UN 3291 for ensuring that bio-waste is effectively contained.</p> <p><u>Through Over-Filling of Waste Bins</u></p> <p>Maximum load weight is clearly marked on each bin.</p> <p>Tenant companies are instructed not to exceed the maximum load weight. This is monitored and tenants reminded of their obligations when bins are overfilled.</p>	1	2	2	Estates staff must be encouraged to report any incidents in which biologically hazardous waste is unsafely stored – this should be reported as an adverse event and investigated where necessary.

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
Accidental Release of Biological Waste	As described above	1	3	3	<p><u>Deliberate Acts of Vandalism</u></p> <p>Biological waste is contained within a secure and fenced waste compound that is monitored 24/7 by Campus Security. There is no public access to the area and it is located some distance from a significant population centre</p>	1	2	2	As described above
Unsafe Collection and Storage of Waste Equipment and Waste Electrical and Electronic Equipment (WEEE)	<p>A very small risk exists that Waste Electrical and Electronic Equipment (WEEE) may be stored insecurely allowing staff, tenants or members of the public to remove it.</p> <p>There are several elements to the incorrect storage and disposal of waste electrical and electronic equipment (WEEE) that may cause harm:</p> <ol style="list-style-type: none"> 1. By allowing damaged or unsafe equipment to re-enter use. 2. Potential release of refrigerant chemicals from fridges and freezers. 3. Release of harmful chemicals such as solvents through leakage or a failure to effectively decontaminate equipment 4. Biological contamination 	1	3	3	<p>A process for management of waste electrical and electronic equipment (WEEE) has been established in which:</p> <ol style="list-style-type: none"> 1. The tenant has the responsibility to ensure that all equipment is correctly decontaminated using an established decontaminant such as Decon 90. 2. A decontamination form is provided which must be completed by the tenant organisation and clearly displayed. All decontamination forms are held on record. 3. Where additional steps are required such as removal of refrigerator doors this needs to be specified on the form provided. <p>If waste electrical and electronic equipment is decontaminated as instructed all environmental and health risks should be effectively reduced.</p> <p>The campus is considered relatively secure but its physical size makes it very difficult in preventing trespassers, especially young children. The estates department are therefore instructed to remove electrical equipment, especially freezers and fridges as quickly as possible.</p> <p>Waste electrical and electronic equipment is stored at the secured waste compound. Security features include:</p> <ol style="list-style-type: none"> 1. Fob access secured gate. 2. Six-foot high perimeter fencing. 3. CCTV monitoring 4. 24/7 security patrols 5. Covered storage area for WEEE <p>Personal protective equipment (PPE) is provided for staff handling waste electrical equipment.</p>	1	2	2	No further recommendations
Unsafe Collection and Storage of Animal Carcasses	A very small risk of zoonotic infection exists when handling animal carcasses. Principally this will occur as a result of the failure of tenants to correctly and safely store animal carcass waste.	1	3	3	<p>There are several routes in which animal carcass waste is generated on campus:</p> <ol style="list-style-type: none"> 1. Frozen rat and mice carcasses which are disposed from B730 (BSU) and B623 (Astrazeneca). These are place in sealed bags and stored in dedicated bins for collection each morning. 2. Animal waste that is collected on demand through tasks raised through FSI and are collected directly from a freezer located in Building B540 procedure room (The Institute) and from laboratory freezers located in BRC buildings (these are usually liver samples). <p>All samples are contained safely within biological waste bags and transferred to the section of the waste compound designated for the storage of biological waste. All biological waste is disposed through a licensed contractor.</p> <p>Personal protective equipment (PPE) is provided for staff handling waste electrical equipment.</p>	1	2	2	No further recommendations

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
Overfilling of Sharps Containers	<p>A risk arises from the incorrect disposal of laboratory sharps. This may lead to exposure to potentially pathogenic organisms or harmful chemical substances through puncture wounds.</p> <p>BRC laboratory staff and estates staff tasked with the processing and removal of biological wastes are particularly at risk of injury. It is the responsibility of the tenant to ensure that all sharps are disposed of in accordance with the guidance provided.</p> <p>The Health and Safety at Work etc. Act 1974 requires that employers must protect the health and safety of their employees and those that may be affected by the way they work – in this instance BRC employees affected by the incorrect disposal of laboratory sharps.</p> <p>Exposure to injuries involving laboratory sharps in the non-healthcare sector is legislated by the Control of Substances Hazardous to Health Regulations 2002. In certain circumstances when sharps injuries lead to infection with specified infectious diseases or acute illness that requires medical attention or a release of an infectious agent or results in a loss of consciousness then incidents will become reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013</p>	2	3	6	<p>Sealed and enforced sharps bins are provided which are marked with a maximum fill level which must not be exceeded.</p> <p>Sharp waste must NOT be disposed of inside the yellow Euro laboratory waste bins.</p> <p>All sharps bins used on campus comply with UN3291 and are manufactured to BS EN ISO 23907:2012 standards</p> <p>Broken glass must be disposed of through the sharp bins provided.</p> <p>Tenants have a responsibility to minimise the risk of injury from sharps both to their own employees and to BRC staff. The following safe laboratory practice should be encouraged:</p> <ul style="list-style-type: none"> - Avoid using needles as far as possible - Make use of alternatives such as retractable or blunting needles where possible. - Use forceps or other appropriate devices for removing needles - Do not re-sheath needles - Dispose of needles safely in an appropriate sharp container. - Replace containers when they become three quarters filled. <p>Staff are required to report tenants overfilling sharps bins and are instructed to not collect any sharps bins that are overfilled.</p> <p>Personal protective equipment in the form of safety work gloves are provided for staff to use.</p>	1	2	2	All incidents of sharps bins being overfilled must be reported to estates manager. Tenant companies who repeat offend will be warned to follow the guidance provided.
Environmental Impact of Flooding	<p>The reasonable proximity to the River Granta and relatively high-water table of the local area results in an increased susceptibility to localised flooding.</p> <p>Increased unpredictable weather may give rise to the possibility of increased or more severe flooding in and around the campus. This may have an environmental impact as there may be a potential for harmful substances being released into the environment. The potential release points include:</p> <p>Diesel Generators and Fuel Storage</p> <p>A potential leakage of diesel fuel from either the diesel generator units used for emergency power or from the diesel refuelling point located at the farm.</p> <p>Chemical Storage Facilities</p> <p>A potential leakage of laboratory chemicals from either the central chemical store located near Building B570 or from the satellite chemical stores located at B250, B270, B910, B900, B940 and B950. Approximate distances from the River Granta range from 250 to 700 metres.</p> <p>Campus Waste</p> <p>Campus waste can be divided into hazardous and non-hazardous waste.</p> <p>Hazardous waste would include biological and chemical waste, waste electronic and electrical equipment and food waste.</p>	3	4	12	<p>Babraham Research Campus has in place a Business Continuity Plan which incorporates a number of Standard Operating Procedures (SOP's).</p> <p>Contained within the SOP's is the Combined Flood Plan and Security SOP and action list. This is detailed below:</p> <p><u>Environmental Agency Flood Alert Warnings</u></p> <p>Babraham Research Campus has registered with the environment agency which enables email and text notifications of flood warnings for Babraham.</p> <p>Babraham Research Campus has registered with the River Levels UK website specifically for the River Granta and which provides specific flood warnings for the area.</p> <p>Key members of the response team should be signed up to the environmental agency flood warning service. This will include as a minimum:</p> <ul style="list-style-type: none"> - The IMT Chair (BRC CEO) - BRC Director of Campus and Facilities and their deputy - Security Manager and their deputy - Estate Manager and their deputy <p>On receipt of the EA flood warning the key members are instructed to report it to security control using the telephone contact number provided.</p> <p>On receipt of the EA warning the security SOP for flood plan action will be issued and referenced for Security Duty Officer Actions</p>	2	2	4	The Campus flood risk assessment will need to be reviewed periodically to ensure that changes in climate are correctly incorporated into the business continuity planning.

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
Environmental Impact of Flooding	<p>Non-hazardous wastes would include recyclable waste such as cardboard and general waste collected from office areas for recycling</p> <p>Sewerage Treatment Plant</p> <p>The sewage plant is operated by the institute and is located behind buildings B250 and B260 and covers all foul discharge from buildings on campus with the exception of Buildings B940 and B950.</p> <p>A potential but unlikely risk exists of the release of raw sewage in the event of substantial flooding. With current climate modelling the risk is considered very small but this risk may change as climate change progresses.</p>	3	4	12	<p><u>River Levels</u></p> <p>The river levels are measured locally with two water level indicators, one located at the old bridge location outside of B522 and the second upstream of the "top" weir. These are manually read level indicators and are notated in metres.</p> <p>The base line readings at normal levels are as follows: - Top Weir Measure 0.6m - B522 Measure 21.5m</p> <p>Active monitoring of the river levels at the security control desk will start on receipt of the EA flood warning, using both levels of indicators. The B522 visual indicator can be monitored from the control room using local CCTV cameras.</p> <p><u>Action</u></p> <p>The following river levels require the action allocated - At the B522 indicator 23 metre level issue an "On Standby" warning to the BBT Director of Campus and Facilities, the Campus Security Manager and BBT Estates Manager. If these members of staff are unavailable, please inform their respective deputies.</p> <p><u>Impacts of Flooding from River Granta</u></p> <p>Information has been obtained from the environment agency flood risk assessment. The information obtained from the EA flood risk assessment may not be entirely accurate.</p> <p>The Environmental Agency (EA) flood risk assessment suggests that the areas potentially impacted would include a small area of B900 that includes the storage areas and the area extending from B730 to B570 incorporating the Forum and Riverside.</p> <p>Diesel generators do not fall within the flood zone</p> <p>The central chemical store is considered very low risk with a risk of 0.1% that incorporates existing defences.</p> <p>Laboratory chemicals are stored within sealed containers which are stored in chemical cabinets. Larger bottles are contained within Winchester bottles that are reinforced with a plastic coating that prevents leakages.</p> <p>No information was available for the sewage treatment works.</p> <p>The Farm and Waste Compound are located outside the flood zone</p> <p><u>Impacts of Surface Water Flooding</u></p> <p>The Environmental Agency (EA) flood risk assessment suggests that the areas potentially impacted would include the roadway from MRC ARES to B730 and also the storage area at B900.</p> <p>The diesel generator located at B270 may potentially be exposed to surface water flooding up to 900mm. Diesel storage tanks are double jacketed to prevent leakages.</p>	2	2	4	As described above

Hazard	Who Might be Harmed and How	L	I	R	Existing Controls	L	I	R	Recommendations
Environmental Impact of Flooding	As described above	3	4	12	<p>The chemical storage area located at B900 may potentially be exposed to surface water up to 300mm. The risk is considered between 0.1 and 1%</p> <p>The farm and waste compound will not be impacted by surface water flooding.</p> <p>No information was available for the sewage treatment works.</p> <p><u>Recorded Flooding Incidents Based Upon Babraham Research Campus</u></p> <p>Flood events have resulted in water levels from the River Granta reaching the section of B730 closest to the river.</p> <p>Diesel generators have not been previously impacted by flooding.</p> <p>Chemical storage facilities have not been previously impacted by flooding.</p> <p>The sewage treatment works have not been impacted by previous flooding events.</p> <p>The farm and waste compound have not been impacted by previous flooding events</p> <p><u>Defended Climate Change Model</u></p> <p>Areas principally impacted will include the area around B730, the back garden green to The Hall and car park areas located between B260 and B270.</p> <p>It is unlikely that diesel generators will be impacted by flooding as a consequence of climate change.</p> <p>It is unlikely that diesel generators will be impacted by flooding as a consequence of climate change.</p> <p>Flooding may potentially reach the electrical substation located at The Farm but the Waste Compound will not be impacted.</p> <p>The sewage treatment works may potentially be impacted by flooding as a result of climate change.</p>	2	2	4	As described above

Adverse Events

Adverse events are reported electronically through the facilities management system – Concept Evolution.

Ensure that all adverse events are reported as soon as possible to ensure clarity of facts.

If you are unsure on how to use the system, please contact BRC Helpdesk.

Emergency Contacts

Name	Position	Email	Telephone Number
Derek Jones	Chief Executive Officer	derek.jones@babraham.co.uk	
Chris Chapman	Director of Campus and Facilities	chris.chapman@babraham.co.uk	
Daniel Cole	Deputy Director of Campus and Facilities	dan.cole@babraham.co.uk	
Daniel Almond	Security Manager	daniel.almond@babraham.co.uk	
Matt Antrobus	Estates Manager	matt.antrobus@babraham.co.uk	07789920085
Adam Johnson	Deputy Estates Manager	adam.johnson@babraham.co.uk	

2.1 COMPLAINTS PROCEEDURE

- any complaints you receive in relation to activities covered by your permit (for example complaints from neighbours about noise, odour or dust from your site)

BRC has close ties with the local community and places a high importance on PR. Any received complaints would pass through the following procedure.

- how you investigate those complaints

Full gathering of details from the issuer of the complaint.

Full analysis and assessment from internal H&S and Senior Management team.

From findings, the complaint is either proved or disproved. Rectification of the cause carried out if required.

Complaint may be escalated to investigation by an external body should the complaint issuer not be satisfied with BRCs internal assessment.

2.2 MANAGING STAFF COMPETENCE AND TRAINING RECORDS

BRC Estates Staff

POSITION	TECHNICAL COMPENANCY	RESPONIBILITIES	TRAINING PROCEEDURE
Estates Manager	CiWM Trained WAMITAB – (Pending)	Overseeing the clinical & hazardous waste collection, processing, storage and transfer on the BRC	Training records held by our HR team. Reminders/records for refresher training and CPD are managed by IT software.
Estates Supervisor	CiWM Trained EPOCH	Leading the Estates team in the daily waste operations	Training records held by our HR team. Reminders/records for refresher training and CPD are managed by IT software.
Senior Estates Worker	EPOCH	Supporting the Estates Supervisor in the above	Training records held by our HR team. Reminders/records for refresher training and CPD are managed by IT software.
Estates Worker (x4)		Carrying out the daily collections, processing, storage and preparation for dispatch of clinical & hazardous waste.	Training records held by our HR team. Reminders/records for refresher training and CPD are managed by IT software.

2.3 RECORDS KEEPING

You must keep any records required by your permit. In some cases the permit will tell you how long to keep a record for. Otherwise you must consider how long you'll need to keep different records for (and write this in your management system).

You must keep records to show how your management system is being implemented in line with the requirements of your permit and this guide.

- permits issued to the site
All company documents and permits are retain on a central repository.
- your risk assessment
All company risk assessment are kept and retained in a central repository, and managed by line managers & our Health and Safety Advisor. Revised annually or at a change in procedure.
- all management system plans
Kept in a central repository. Action points generated using facilities management software which tracks task history
- all operating procedures
Kept in a central repository. Revised annually or at a change in procedure.
- staff competence and training (for example qualifications, courses attended)
Staff training records are recorded and raised for refreshing through facilities management software.

For all waste accepted under this license, Babraham Research Campus (BRC) Limited generates a Waste transfer note that includes the below information – with a copy being sent to the producer, and a copy going into a digital version for records keeping (for seven years).

- its quantity (weight or volume)
- its [List of Waste \(LoW\) Code](#)
- its origin (for example, the location the waste sent from)
- the identity of the producer of the waste (for example the company name)
- the date the waste arrives at your site
- the date the waste was first produced, if the waste is likely to cause odour
- any quarantined materials that are part of the delivery, and what you did with them

Duty of care for all waste which BRC transfers off site.

Traceable waste transfer notes are generated by our chosen waste disposal provider and kept in paper format within a fire safe, for seven years.

2.4 MANAGEMENT SYSTEM REVIEW PROCESS

The Estates Manager, with the assistance of the Estates Supervisor, will make sure that proper procedures are following in the handling and transfer of hazardous/clinical waste at a practical level.

They will also monitor the correct documentation and record keeping.

The management system will be updated and reviewed annually, or should the below occur:

- changes to the site, operations or equipment are made
- whenever BRC applies to the EA to make a variation in the permit
- after any accident, complaint or breach of permit
- if BRC encounters a new environmental problem or issue, and have to implement new control measures to control it

Any changes to the management system, (such as the below) will be amended into the records and the EA informed.

- a change to the maximum amount of waste stored on your site
- New storage procedures
- implementation of new control measures