


NHS Northumbria
Northumbria Specialist Emergency Care Hospital
Northumbria Way, Cramlington, NE23 6NZ

Risk Assessment

August 2023

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REVIEWED BY	Jane Bond (Project & Business Development Director)	DATE	01.08.2023
SIGNATURES			
VERSION No.	1.0		

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1.0 SITE DETAILS

1.1 General

This Risk Assessment Plan report follows the guidance 'Risk Assessment for Environmental Permits' by the Environment Agency (EA) and accompany the Bespoke Permit application on behalf of the Applicant Northumbria Healthcare NHS Foundation Trust.

1.2 Site Location

NHS Northumbria Emergency Care Hospital
Northumbria Wy
Cramlington
NE23 6NZ

The site where the treatment will occur is within the Hospital building and the public are prevented from gaining access by signage and enforcement by hospital staff. See Location Plan **Appendix A** and site Layout Plan **Appendix B**.

2.0 IDENTIFYING POTENTIAL ACCIDENTS & HAZARDS

The table below lists the potential hazards identified by the risk assessment that have been considered at the site and identifies the possible pathways and receptors. Scores shown in the table were applied to risks identified (in low, very low and high) based on the following:

- The probability of the hazard occurring, without the use of protective measures
- The consequences of the hazard to the environment or human health and
- The magnitude of the hazard occurring.

2.1 Risk Assessment Matrix

The Risk Assessment will be reviewed annually or in the event of any major operational changes or in the event of a major environmental incident or near miss. Appendix C shows the site's Risk Assessment Matrix.

2.2 Autoclave Management & Maintenance

Autoclave will be used by trained staff and according to Manufacturer's Manual, which is detailed in the **Doc Ref_Site Management Plan**. The Management Plan also describes the wastes types and quantities, treatment operation, emissions monitoring plan and maintenance schedule of the autoclave equipment.

Very low quantity of healthcare wastes will be treated on site per day (3.2t maximum). Only specified wastes produced by the hospital will be treated by the autoclave. The treatment and storage of healthcare wastes (pre and post treatment) will be carried out within the building, using appropriate bags and sealed containers (UN) on an impermeable surface with a sealed drainage system. Operations will be carried out in accordance with EPR 5.07 guidelines, Healthcare Waste Treatment EA guidelines, and general EA guidelines on specific healthcare waste operations.

2.3 SSSI Map

The Hospital is not located within 200 metres of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI). See **Appendix D**.

2.4 Flood Risk Summary Map

The Hospital is not located within a flood risk zone, see **Appendix E**. The site has appropriate sealed drainage system, see **Appendix F**.

2.5 Fire Risk Assessment

Healthcare wastes are not considered combustible, the EA advised (at the pre application stage) a Fire Prevention Plan was unnecessary.

2.6 Risk Assessment Conclusion

As the site is not within a flood risk zone a flood risk assessment was not considered.

An odour management plan has been undertaken as advised by the EA at Pre-application stage. Doc Ref_ NSECH_Odour Management Plan

Overall, based on the RA carried out on site, it is concluded that the magnitude of the risks of all the potential hazards identified are considered low and or very low after the risks management specified in the matrix are implemented.

For this reason, the need for the development of Noise Management Plan and Dust Management Plan were not considered necessary as long as the prevention procedures mentioned in the matrix and in the Site Management Plan are followed. (**Doc Ref_ NSECH_ Site Management Plan**).

Appendix A – Site Location Plan



KEY

PERMIT BOUNDARY



Rev	A	B	C	D	E	
Drawn by	RB		Scale	NTS		Original Size A3
Surveyed by	JB		Date	25/07/2023		Dwg File Name 2023-6333

NORTHUMBRIA HEALTHCARE TRUST
 NORTHUMBRIA WY NE23 6NZ
 CRAMLINGTON

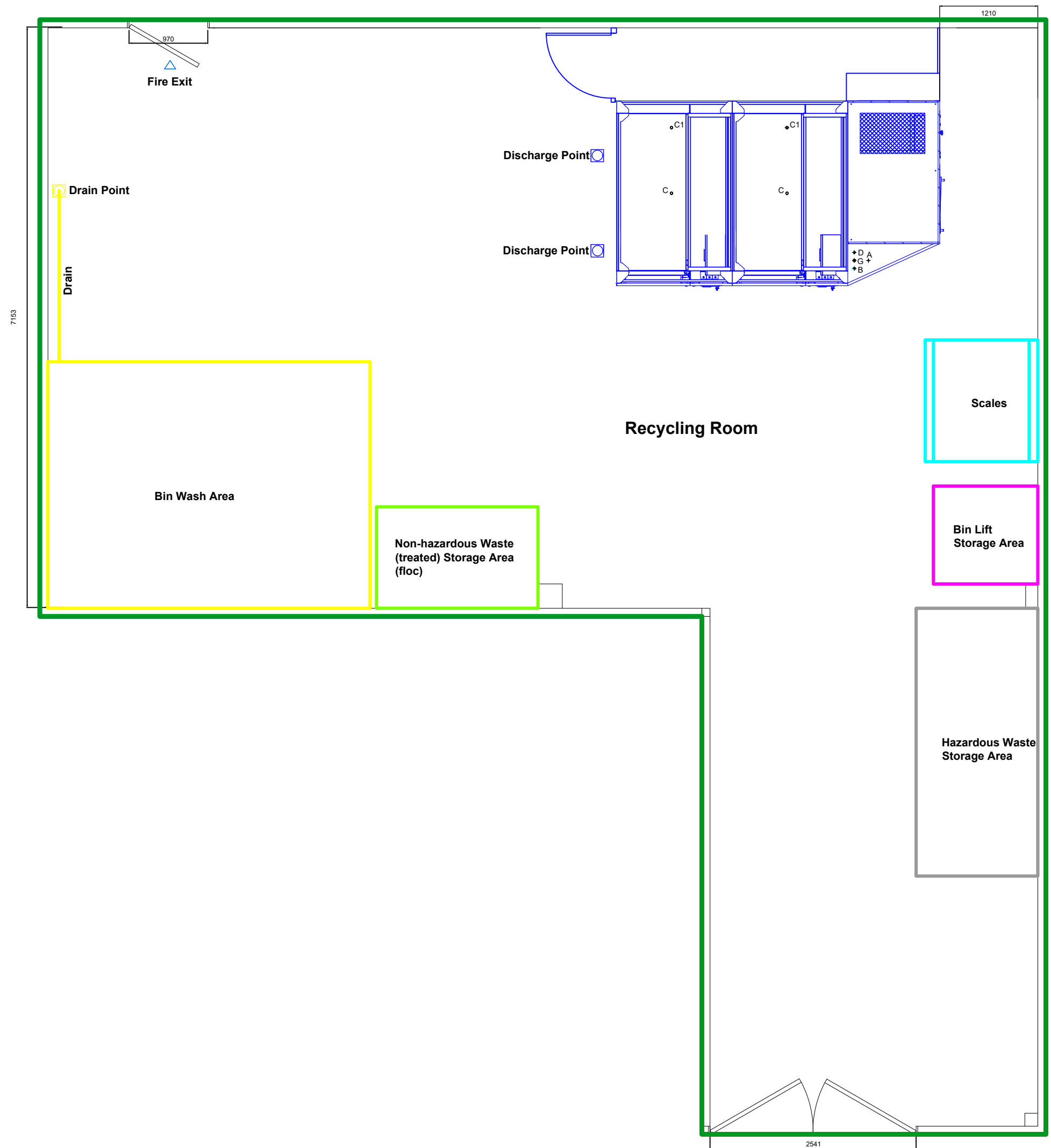
NORTHUMBRIA SPECIALIST
 EMERGENCY CARE HOSPITAL
 SITE LOCATION
 PLAN



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DRAWING No.	REV.
2023-6333-002	REV

Appendix B – Site Layout Plan



- KEY**
- PERMIT BOUNDARY
 - BIN WASH AREA
 - BIN LIFT STORAGE AREA
 - SCALES
 - HAZARDOUS WASTE STORAGE AREA (MAXIMUM STORAGE OF 2 x 770 l BINS)
 - NON HAZARDOUS WASTE (TREATED) STORAGE AREA (FLOC) (MAXIMUM STORAGE OF 2 x 240 l BINS)
- A POWER CONNECTION POINT
 - B COMPRESSED AIR
 - C MACHINE DRAIN
 - C1 VACUUM DRAIN
 - D POTTABLE WATER
 - G SOFTENED WATER



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NORTHUMBRIA HEALTHCARE TRUST
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 NORTHUMBRIA SPECIALIST
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 SITE LAYOUT
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DRAWING No. 2023-6333-005	REV. A
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Appendix C – Risk assessment Matrix

Waste Operation	Waste Operation: Healthcare Waste Physio-Chemical Treatment (autoclave)
Location:	NHS-NSECH Hospital - Northumbria Wy, Cramlington, NE23 6NZ
Location of environmentally sensitive sites (km / m):	Greater than 200m
Risk assessment carried out by:	Jane Bond
Date:	25-Jul-23

Data and information				Judgement				Action (by permitting)	
Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).
Local human population	Releases of particulate matter (dusts) and infectious micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	Medium	Treatment is likely to cause releases. There is potential for exposure if anyone is living or working close to the site (apart from the operator and employees). However treatment equipment (autoclave) is enclosed, located within the building and equipped with HEPA filters.	Waste is kept in appropriate bags within lockable containers. Reusable containers undergo appropriate and regular disinfection. Site surfaces will also be regularly disinfected. Waste treatment is carried out within the building and achieve STAATT Level III. A monitoring plan for the autoclave has been designed.	Low DUST MANAGEMENT PLAN NOT REQUIRED
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	Low	Low	Low	Local residents often sensitive to dust.	As above	Very low

Local human population, livestock and wildlife.	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition	Low	Low	Low	Local residents often sensitive to litter.	As above. Appropriate measures include clearing litter arising from the activities from affected areas outside the building.	Very low
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Low	Low	Low	Road safety, local residents often sensitive to mud on roads.	As above (no appropriate measures defined). Appropriate measures could include clearing waste, litter and mud arising from the activities from affected areas outside the building.	Low
Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Low	Medium	Low	Local residents often sensitive to odour.	Treatment will only occur within the designated building. The autoclave is fully enclosed (including the shredding process) in order to eliminate the potential for the release of pathogens and odour from the waste. The autoclave is equipped with an air extract system that will vent to atmosphere via a HEPA air filter system. The HEPA filter will remove small particulates from the air and trap it, preventing their release to atmosphere also providing odour and dust control.	Low
Local human population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Low	Low	Low	Local residents often sensitive to noise and vibration	Treatment will only occur within the designated building. The autoclave is fully enclosed (it includes the shredding process). The equipment on site is maintained as per manufacturer guidelines and maintenance service is provided periodically and on demand by qualified staff (provided by the contractor Curo/Peacock).clarify Db	Low

Local human population	Scavenging animals and scavenging birds	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land	Low	Low	Low	Permitted wastes may attract scavenging animals and birds.	Waste is kept in appropriate bags within lockable containers (UN). Reusable containers undergo appropriate and regular disinfection. Site surfaces will also be regularly disinfected. Waste treatment is carried out within the building. Wastes will be stored in appropriate lockable containers. Pest control will be managed proactively with an appropriately qualified contractor should the need arise	Very low
Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land	Low	Low	Low	Permitted wastes may attract flies.	As above	Low
Local human population and local environment	Flooding of site	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Medium	Low	Wastes washed off site will add to the volume and hazard of the local post-flood clean up workload, rather than the hazard.	Site flood risk summary map confirmed site has low risk of flooding.	Very low
Local human population and / or livestock after gaining unauthorised access to the waste operation	All on-site hazards: wastes; machinery and vehicles.	Body injury	Direct physical contact	Medium	Medium	Medium	Site security measures at the hospital are normally good to prevent access.	Hospital activities shall be managed and operated in accordance with a management system (including hospital security measures to prevent unauthorised access). Access to designated treatment area and storage only permitted to specified site staff.	Low
Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Medium	Medium	Low	Site security measures at the hospital will prevent unauthorised access.	Hospital activities shall be managed and operated in accordance with a management system (including hospital security measures to prevent unauthorised access). Access to designated treatment area and storage only permitted to specified site staff.	Low

Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	As above.	Low	Medium	Low	Risk of accidental combustion of waste is low. Clinical wastes are considered non combustible. Low quantities of floc will be stored on site.	Site is operated in accordance with site management plan and Hospital management system. The site is non smoking and no ignition sources are used in site operations. Electrical installations are monitored on a regular basis and kept in a good state of repair. Good housekeeping ensures any potentially combustible materials are kept away from any potential ignition sources.	Low
All surface waters close to and downstream of site.	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids.	Acute effects: oxygen depletion, fish kill and algal blooms	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Medium	Low	There is potential for surface water run-off outside the building during heavy rain.	The treatment process will be carried out within the building on impermeable surface. The Hospital has in place an appropriate sealed drainage system to foul sewer.	Low
All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality	As above. Indirect run-off via the soil layer	Low	Medium	Low	As above	As above	Low
Abstraction from watercourse downstream of facility (for agricultural or potable use).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Low	Medium	Low	Wastes will be stored in appropriate bags within lockable containers. Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off.	As above, also the activities shall not be carried out within Groundwater Source Protection Zone 1, or if a Source Protection Zone has not been defined then within 50m of any well spring or borehole used for the supply of water for human consumption. The treatment process will be carried out within the building on impermeable surface. The Hospital has in place an appropriate sealed drainage system.	Very Low

Groundwater	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Low	Medium	Low	There is low potential for rainwater run-off or leakage from site treatment operations and storage.	As above, also the activities shall not be carried out within Groundwater Source Protection Zone 1, or if a Source Protection Zone has not been defined then within 50m of any well spring or borehole used for the supply of water for human consumption. The treatment process will be carried out within the building on impermeable surface. The Hospital has in place an appropriate sealed drainage system.	Low
Local human population	Contaminated waters used for recreational purposes	Harm to human health - skin damage or gastro-intestinal illness.	Direct contact or ingestion	Low	Medium	Low	Unlikely to occur.	As above	Very low
Protected sites - European sites and SSSIs	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Low	Medium	Low	Waste operations may cause harm to and deterioration of nature conservation sites.	Site operations will not be carried out within 200m of a European Site or SSSI. (Distance criteria as agreed with Natural England/Countryside Council for Wales). Hospital site not within 200m of such conservation areas.	Very low

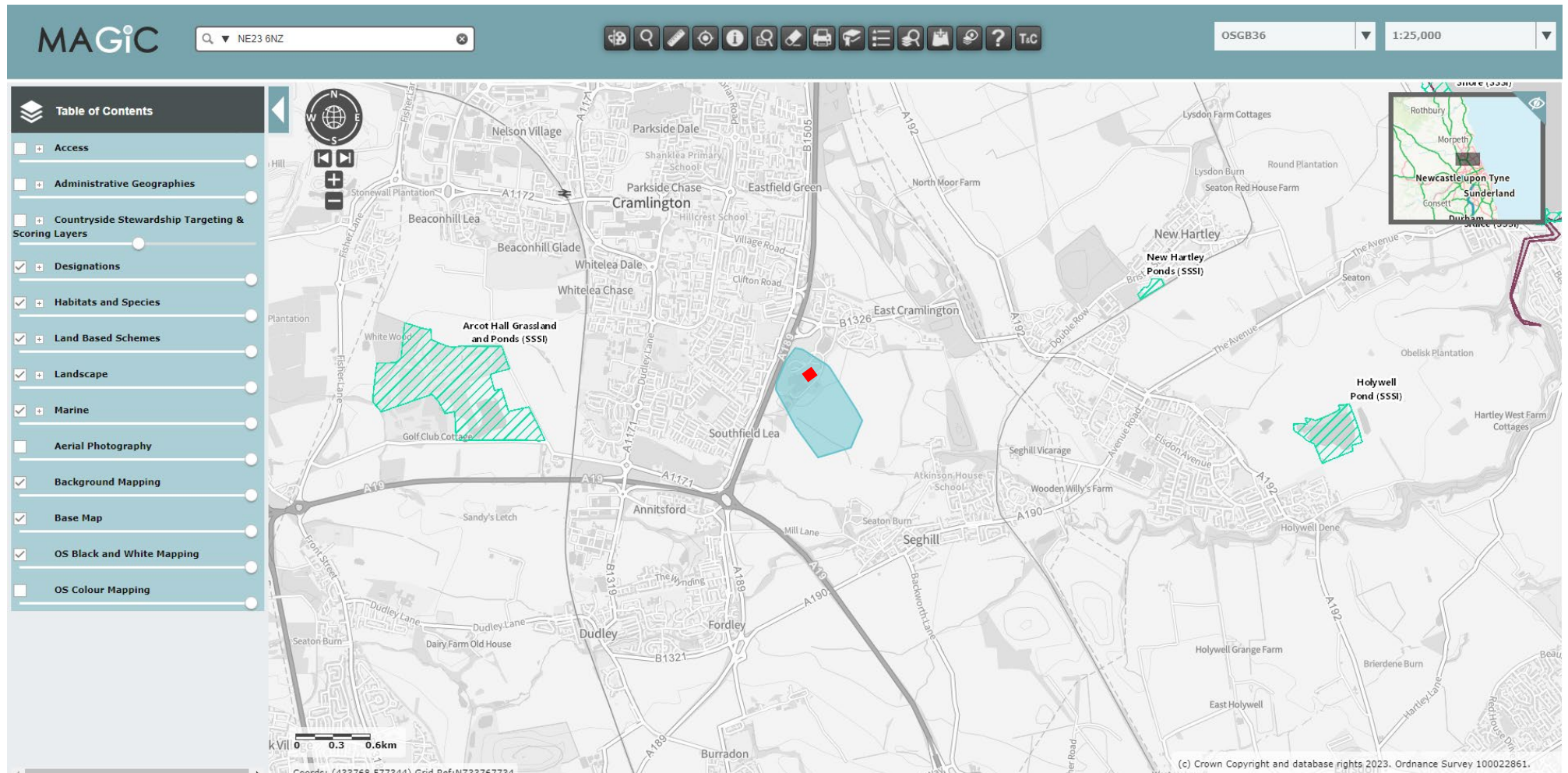
Notes: Red triangle indicates comment containing supporting information


Yellow columns contain drop down menus that allow automatic evaluation of risk in green column

Appendix D – SSSI Map

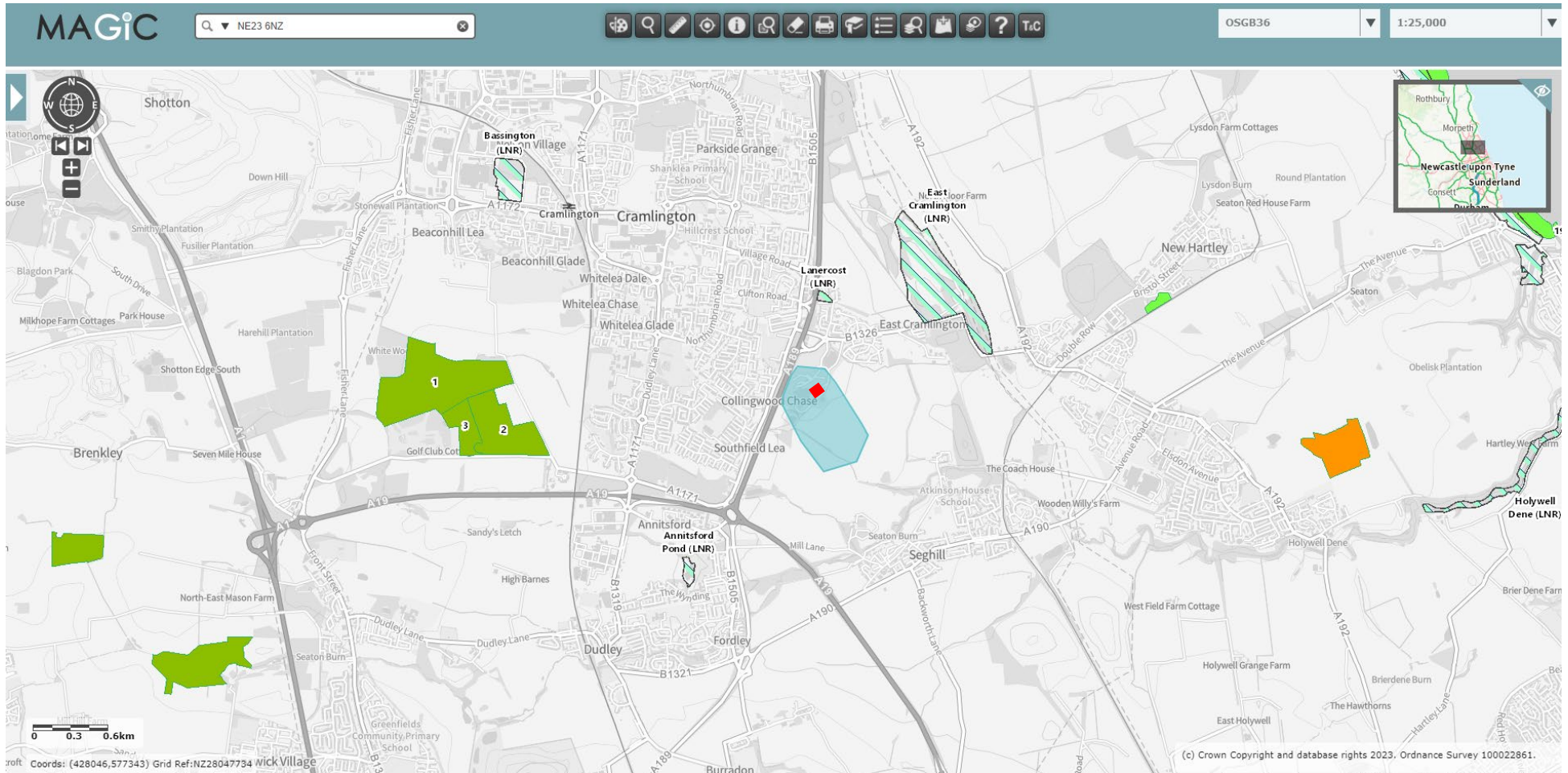
Northumbria Specialist Emergency Care Hospital - Northumbria Wy, Cramlington NE23 6NZ (<https://magic.defra.gov.uk/>)

Map shows that the site is not close to SSSI sites. Closest SSSI is Arcot Hall Grassland and Ponds, which is around 2,000 meters distance from the site. Map further below shows closest Natural Nature Reserves from site.



 Approximate site location

Map below shows closest Natural Nature Reserves from site with Lanercost (over 740m distance) and East Cramlington (over 1000m distance).



■ Approximate site location

Appendix E – Flood Risk Summary

Flood Risk Summary

Northumbria Specialist Emergency Care Hospital - Northumbria Wy, Cramlington NE23 6NZ

Data collated from: <https://check-long-term-flood-risk.service.gov.uk/risk>

Surface Water – Low Risk

Rivers and SEA – Very Low Risk

Reservoirs - Flooding from reservoirs is unlikely in this area

Groundwater - Flooding from reservoirs is unlikely in this area

Appendix F – Site Drainage Plan

