



AC
ENVIRONMENTAL
CONSULTING

Odour Management Plan



Royal Preston Hospital

Sharoe Green Lane, Fulwood, Preston
PR2 9HT.

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Ref: RPH.PT.OMP.2205

AC Environmental Consulting Ltd,
Environment House,
Werrington Road,
Stoke-on-Trent
ST2 9AF

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1. INTRODUCTION

This Odour Management Plan has been developed to manage and mitigate the potential impacts of odour from site operations. It identifies the possible receptors of odour and details in the control measures in place to deal with any issues arising.

Routine monitoring for odour is a central part of the plan and forms part of the Site Inspection Procedure. The response to complaints is key and these shall be dealt with promptly in accordance the Complaints Procedure. In all cases a review of odour events and complaints shall form part of the ongoing management review and shall be discussed at management meetings.

This Odour Management Plan is necessary for the Royal Preston Hospital site to be granted a bespoke environmental permit for their clinical waste transfer station facility.

The permitted area is located within a larger site consisting of hospital buildings situated in an urban setting. The larger hospital site is surrounded by residential housing. The permitted area currently operates a clinical waste transfer station that accepts clinical waste from Royal Preston Hospital as well as other small businesses in the Lancashire area.

There are no records/evidence of any pollution incidents on the site or near the site. The site is in the local authority of Preston City Council. The Air Quality Management Area (AQMA) map from DEFRA has been checked and the site is not located within an AQMA.

At present, the site is operating as a clinical waste transfer station under the permit Ref: ZP3191CY/V002. The site is now seeking to be granted a new bespoke permit for the clinical waste transfer station, as the site is accepting clinical waste from Trusts outside the Royal Preston Hospital and is not suitable for a bespoke permit.

2. POTENTIAL SOURCES

Waste accepted on site will originate from the hospital itself and other small businesses in the Lancashire area. Due to the type of clinical waste accepted on site, the waste is expected to be odorous. As identified in the Environmental Risk Assessment Ref: RPH.PT.ERA.2205, there is the risk of odour is low if the appropriate mitigation measures are implemented. Further detail on the odour sources is shown in Table 2.1. An identification of the possible sources of odour, pathways taken by odour and receptors affected by odours produced on site have been displayed in Table 2.2.

The potential for odour is linked to the inspection procedure on arrival and the length of storage of wastes on site. The site will accept up to 1,750 tonnes per annum. The average weekly tonnage will be 34 tonnes.

Table 2.1 Odour Sources

Parameter	Site Details
Source Description	Clinical Waste Handling and Storage
Odorous materials	Offensive, infectious, cytotoxic/cytostatic, medicine waste
Containment/release point	Bagged or within containers within the sealed enclosed 770 litre wheeled bins and the sealed 770 litre wheeled bins in the refrigerator unit.
Odour description	Offensive, infectious, cytotoxic/cytostatic , medicine waste.
Intensity at or near the point of release (0 not detected to 6 extremely strong)	Variable due to weather conditions and ventilation within building. External odour minimal when doors and bins closed. Potential for odour on opening but diminishing rapidly due to each wheeled bin being equipped with an automatic closing and locking mechanism and the indoor storage being refrigerated (4 to 0).
Pattern of release	Expected to peak during waste receipt, other waste activities and during certain weather conditions.
Potential for problems	Equipment failures or excessive waste inputs may result in extended holding times of accepted waste or the insufficient containment of odorous air produced on site.

Table 2.2 Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Storage	Evaporation of odorous wastes and subsequent atmospheric dispersion	All	Unpleasant odour for surrounding receptors	Maintain the integrity of the sealed 770 litre wheeled bins to prevent odours from escaping the wastes. Maintain sufficient humidity and surface temperature in the immediate environment to reduce evaporation rates.
Tipping and loading	Contamination of odorous wastes. Disruption of odorous wastes and subsequent atmospheric dispersion.	All	Unpleasant odour for surrounding receptors	Thorough inspection of the waste prior to tipping and loading. Ensuring waste is tipped only on the automated bin tipper which is undercover to reduce the disruption of possible odorous wastes

3. CONTROL MEASURES

The nature of the waste types accepted at site mean that odour may become an issue. However, specific control measures are in place to minimise the risk of odour becoming an issue. Implementing control measures to minimise the risk of odours arising is the key to odour management. This is done by ensuring site operations are conducted in accordance with the Environmental Management System Ref: RPH.PT.EMS.2205. It is crucial to note that all waste is received in sealed bags and containers clearly marked according to waste stream. Following being weighed, the sealed bags are stored in the

sealed wheelie bins either externally or indoors within the refrigerator unit. An action plan for odour triggers and information on who the action is instigated by is provided in Section 4.

3.1 Managing Inventory

Odour control begins on receipt of loads with each load being inspected on arrival. Waste arrives in the form of sealed bags and sealed containers according to waste stream. Waste will be inspected at the entrance to the site to ensure that the waste in the load meets the following criteria:

- i) EWC Code on the waste transfer note conforms to the waste inside the bag/container.
- ii) Permit waste acceptance criteria – waste meets with the criteria of the environmental permit and planning permission for example, waste accepted would be within the permissible tonnage and waste type acceptance criteria.

External waste will be received and immediately loaded by the customer into 770 litre wheeled bins. Trust waste is already contained within 770 litre wheeled bins. The bins are moved to the weigh scales which are under cover, to the north of the permitted area to be weighed. Once weighed, each wheeled bin of waste is labelled with the appropriate bin tag indicating source, weight, date and waste type. Clinical waste is received in seven different waste streams; offensive waste, sharps waste, infectious waste, cytotoxic/cytostatic waste, medicine waste and anatomical waste. Each waste stream is clearly identified by the type of waste bag/container it is stored in, as well as the bin tag.

In the event that non-conforming waste is identified, it will be segregated from the load immediately and transferred to the quarantine area within the refrigerator unit. The non-conforming waste will be removed from site as soon as possible to a suitable permitted facility. If the non-conforming waste is from a customer, they are required to remove the waste from site.

It is crucial to note that all of the 770 litre wheeled bins are clearly labelled with the type of waste stream they are assigned for. Each wheeled bin is locked and accessed by the use of a bin key. Once opened and the waste stored inside, each wheelie bin is equipped with an automatic closing and locking mechanism, and therefore the waste will have very little exposure. This will significantly reduce the risk of an issue arising from odour.

The site operates a First in First Out system for waste to ensure that the wastes are not inadvertently stored for long period of time. This ensures that wastes are normally retained for no longer than 48 hours of receipt which is not long enough for the waste to start to degrade and produce foul odours. The site is designed to accept a maximum of 1,750 tonnes of clinical waste per annum which demonstrates that such handling is tightly controlled. The maximum time that waste is stored within the permitted area is 7 days.

This greatly reduces the potential for odour. All waste will be stored within bags and containers according to waste stream within 770 litre wheeled bins on the impermeable concrete surface. Also, it is crucial to note that some infectious waste, waste containing traces of medicines, cytotoxic and cytostatic medicines, and anatomical wastes, are stored within the sealed 770 litre wheeled bins within the refrigerator unit which is indoors and equipped with air conditioning. The remaining 770 litre wheeled bins are stored externally.

Due to the potential risk of odour on site, deodorising equipment is present on site at all times. A Knapsack Sprayer will be used in the event of odour being identified on site to immediately reduce the risk of the spread of odour to nearby sensitive receptors. The Knapsack Sprayer will be used to spray the stockpile identified as odorous by a member of trained staff. As identified within the Environmental Risk Assessment Ref: RPH.PT.ERA.2205, the risk of odour is low with the suitable mitigation measures implemented.

3.2 Controlling Evaporation

Reducing the rate of evaporation of odorous wastes is a valuable control measure in limiting the risk of foul odours being produced on site.

With clinical waste being the only waste streams accepted on site, it is crucial that they are stored appropriately. As previously mentioned, all wastes are bagged/containerised according to waste stream, and sealed within 770 litre wheeled bins according to waste stream. Some infectious waste, waste containing traces of medicines, cytotoxic and cytostatic medicines, and anatomical wastes, are stored within the sealed 770 litre wheeled bins within the refrigerator unit which is indoors and equipped with air conditioning. The refrigerator unit is a controlled environment with a temperature that is continuously maintained and is monitored by site management daily.

All of the 770 litre wheeled bins belong to the Trust's waste contractor and are cleaned by the contractor at every exchange, to further reduce any odours.

All stockpiles, external and internal, are inspected daily by site management to ensure the risk of odour is reduced and controlled. In the event that a stockpile is identified as odorous, trained site staff will use the deodorising equipment consisting of a Knapsack Sprayer to dampen the stockpile, therefore reducing the risk of the spread of odour to nearby sensitive receptors.

3.3 Containment and Abatement

There is the potential for odour to be produced from the waste accepted on site. Therefore, containment methods are necessary to treat emissions.

Keeping the containment at a local level through the placement of waste bags and containers within the sealed 770 litre wheeled bins will contain any potential odour produced. The cover of the bin tipper scales will also act as an effective containment measure by reducing the impact that weather conditions may have on disrupting possible odorous wastes. It is crucial to note that all waste will arrive in the appropriate bag/container according to waste stream prior to being stored within one of the sealed 770 litre wheeled bins. No waste will be unbagged/un-containerised or stored directly on the concrete surface.

3.4 Transport and Dispersion

The site design has considered potential impacts on neighbours and the storage of each stockpile is protected from adverse weather conditions by the sealed 770litre wheelied bins. The waste that is anticipated to have the highest risk of potential odour is stored within the sealed 770 litre wheeled bins indoors within the refrigerator unit.

3.5 Responding to Complaints

In the unlikely event that there is a complaint relating to odour produced on site, various procedures are in place. All complaints will be recorded in a complaint register, a copy of which is attached in Appendix 2, and reported to the Site Manager, who will investigate the circumstances and ensure that the necessary corrective measures are taken. A prompt response will be made to the complaint and a record, including copies of all correspondence and telephone file notes, will be made in the complaints register. Relevant authorities e.g. Preston City Council and the Environment Agency, will be advised in writing within one week if any odour complaint is received, together with details of the findings of the investigation and any corrective measures which have been taken.

In the event of any substantiated complaint, the effectiveness of the Odour Management Plan will be reviewed.

3.6 Ceasing or Reducing Operations

When onsite waste processing is predicted to cause an excessive odorous impact in the surrounding environment and on receptors, operations will be reduced, or in severe cases, cease until conditions have improved. This may be due to weather conditions or a mechanical failure relating to containment.

3.7 Accident Management Plan

The odour risk assessment below will guide the action to be taken in response to any odour event. The site will also operate in accordance with an Accident Management Plan.

4. MONITORING AND RESPONSE

The following table details in the numerous actions that can be taken on site to control the unlikely event of odour, their triggers and who will undertake such actions. Permanent actions in place include the storage of all waste within assigned bags within clearly labelled sealed 770 litre wheeled bins, the placement of the bin tipper scales under cover, and the storage of waste at a higher anticipated risk of being odorous within the refrigerator unit.

Monitoring Method	Trigger	Action	Instigated by
Meteorological	Prevailing winds blowing towards residential housing detected.	On site and off site sniff test	COTC holder, site management or suitably trained site staff
Sniff test	Odour detection through sniff test	Deployment of tarpaulin to cover the stockpile	Site management
Offsite walk over survey	Odour detection complaint	Deployment of tarpaulin to cover the stockpile	Site management

Monitoring records, from both sniff tests and offsite walk over surveys, shall be held on site and made available for inspection by the Environment Agency.

APPENDIX 1 – SNIFF TEST FORM

Appendix 1 - Sniff Test Form

Odour report form					Date
Time of test					
Location of test e.g. street name etc					
Weather conditions (dry, rain, fog, snow etc):					
Temperature (very warm, warm, mild, cold, or degrees if known)					
Wind strength (none, light, steady, strong, gusting) Use Beaufort scale if known					
Wind direction (e.g. from NE)					
Intensity (see below)					
Duration (of test)					
Constant or intermittent in this period or persistence					
What does it smell like?					
Receptor sensitivity (see below)					
Is the source evident?					
Any other comments or observations					

Sketch a plan of where the tests were taken, the potential source(s).

Intensity 0 No odour 1 Very faint odour 2 Faint odour 3 Distinct odour	4 Strong odour 5 Very strong odour 6 Extremely strong odour Ref: German Standard VDI 3882, Part 14	Receptor sensitivity Low (e.g. footpath, road) Medium (e.g. industrial or commercial workplaces) High (e.g. housing, pub/hotel etc)
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APPENDIX 2 – ODOUR COMPLAINT FORM

Appendix 2 - Odour Complaint Report Form

Odour Complaint Report Form	
Time and date of complaint:	Name and address of complainant:
Telephone number of complainant:	

Date of odour:	
Time of odour:	
Location of odour, if not at above address:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (eg from NE):	
Complainant's description of odour:	
o What does it smell like?	
o Intensity (see below):	
o Duration (time):	
o Constant or intermittent in this period:	
o Does the complainant have any other comments about the odour?	
Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure):	
Any other relevant information:	
Do you accept that odour likely to be from your activities?	
What was happening on site at the time the odour occurred?	
Operating conditions at time the odour occurred (eg flow rate, pressure at inlet and pressure at outlet):	
Actions taken:	
Form completed by:	Date Signed

Intensity

- | | | |
|--------------------|------------------|--------------------------|
| 0 No odour | 3 Distinct odour | 5 Very strong odour |
| 1 Very faint odour | 4 Strong odour | 6 Extremely strong odour |
| 2 Faint odour | | |

APPENDIX 3 – ODOUR DIARY

Appendix 3 - Odour Diary

Odour Diary						
Name:		Address:				
Telephone Number:						
Date of odour:						
Time of odour:						
Location of odour, if not at above address (indoors, outside):						
Weather conditions (dry, rain, fog, snow etc):						
Temperature (very warm, warm, mild, cold or degrees if known):						
Wind strength (none, light, steady, strong, gusting):						
Wind direction (eg from NE):						
What does it smell like? How unpleasant is it? Do you consider this smell offensive?						
Intensity – How strong was it? (see below 1-5):						
How long did go on for? (time):						
Was it constant or intermittent in this period:						
What do believe the source/cause to be?						
Any actions taken or other comments:						

Intensity

- | | | |
|--------------------|------------------|--------------------------|
| 0 No odour | 3 Distinct odour | 5 Very strong odour |
| 1 Very faint odour | 4 Strong odour | 6 Extremely strong odour |
| 2 Faint odour | | |

APPENDIX 4 – SENSITIVE RECEPTORS PLAN



EDUCATION

- A. Sherwood Primary School
- B. St Clares catholic Primary
- C. Preston College
- D. Archbishop Temple School
- E. St Pius X Catholic preparatory School
- F. Corpas Christi Catholic Sports College
- G. Queens Drive Primary School
- H. Fulwood St Peters Nursery

MEDICAL

- 1. Preston Hospital
- 2. Lytham Road Surgery
- 3. North Preston Medical Center

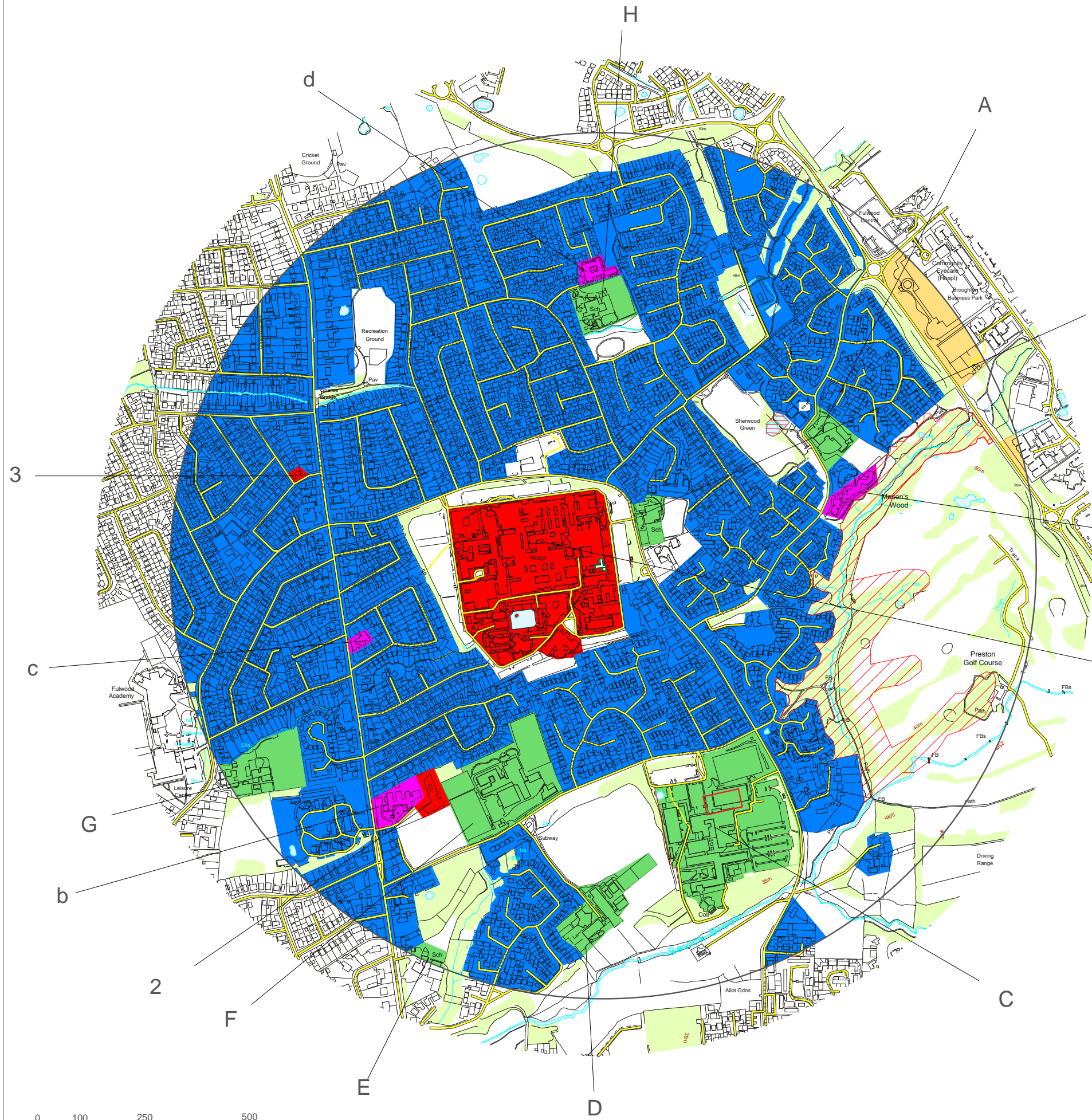
CAREHOME

- a. Barchester - SherwoodCourt Care Home
- b. Springfield Manor Gardens Nursing Home
- c. Oxford House Elderly Residential
- d. Meadowfield House Assisted Living

LOCAL NATURE RESERVE

Fishwick Bottom LNR

- Residential
- Education
- Medical
- Carehome
- Road



CLIENT			
Royal Preston Hospital			
SITE			
Sharoe Green Lane, Fulwood, Preston, PR2 9HT			
PROJECT			
Permit Application			
TITLE			
Key Receptors Plan			
SCALE @A3	DATE	DRAWN BY	CHECKED BY
1:10000	May 2022	T Kearns	D Alcock
DRAWING NO		REVISION	
220525RPH103			

REV	DATE	DETAIL