

Global Centre of Rail Excellence

Dust Management Plan

GCRE

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Executive Summary

The present document represents the Dust Management Plan (DMP) as specified by condition n.5 of 20/0738/FUL (Powys County Council) and n.4 of P2020/0362 (Neath Port Talbot Council) for the Nant Helen Complementary Restoration Earthworks.

This DMP details the mitigation and management techniques to minimise the generation of dust during the construction phase of the Nant Helen Complementary Restoration Earthworks (the project).

Main roles and responsibilities have been specified, in addition to a monitoring regime appropriate to the site; the monitoring regime mainly consists of visual observations, with the requirement for further monitoring to be reviewed throughout the construction works, if there is any evidence of off-site impacts (evidenced by complaints or observed dust deposition). To address any complaints received relating to dust, the DMP defines a procedure for the recording and handling of complaints, in addition to pursuing corrective action.

The Health and Safety Manager is responsible for implementing the monitoring regime, the methods for visual monitoring and control of dust; as set out within this document.

The DMP is to be reviewed and updated as required to ensure that the stipulated mitigation remains relevant and effective.

1. Introduction

1.1. Purpose

In July 2020 Full Planning Permission was approved for the Nant Helen Complementary Restoration Earthworks to create 2 looped landform platforms within the Global Centre for Rail Excellence (GCRE), located at the Nant Helen surface mine and Onllwyn coal washery; at the head of the Dulais and Tawe valleys.

GCRE has commissioned Atkins, part of SNC-Lavalin group, to complete a Dust Management Plan (DMP) as specified by condition n.5 of 20/0738/FUL (Powys County Council) and n.4 of P2020/0362 (Neath Port Talbot Council) for the Nant Helen Complementary Restoration Earthworks.

This DMP details mitigation and management techniques to minimise the generation of dust during the construction phase of the Nant Helen Complementary Restoration Earthworks (the project).

1.2. Project Overview

The Nant Helen Complementary Restoration Earthworks scheme is the first phase of the Global Centre of Rail Excellence. It has been designed to create 2 looped landform platforms (part in cutting and part on embankment) with associated drainage infrastructure and areas of landscaping and habitat creation to create a flexible and adaptable area of land that could be used for a variety of uses including amongst others the proposed rail testing, research and development and storage facility).

The landform proposed for restoration covers an area of approximately 179 hectares. The extent of the site reconciles the area of the former Nant Helen Surface Mine which is currently under restoration and parcels of land to North, South and East of the Opencast site that have previously been restored or form part of the Drum Common.

The Nant Helen earthworks comprise a combination of cuttings and embankments to create the loop forms shown in Figure 1.

The works will be completed over a period of 73 weeks (approximately 18 months) and will include site preparation, creation of cuttings, temporary drainage works, excavation, embankments, drainage works and soiling and seeding.

1.3. Objectives

The primary objective of this DMP is to define the dust mitigation measures and management techniques to be implemented at the Nant Helen site during the construction phase of the project. The aim is to minimise the generation of dust and reduce the potential for adverse effects on the surrounding environment and receptors.

Mitigation measures and management methods within this document are based upon best available and practicable techniques.

The means of implementation is communicated through the DMP, a point of reference which also defines the roles and responsibilities required as part of the delivery of the plan. The DMP also sets out the procedure for complaints handling, event investigations and a proportionate level of proactive site observational monitoring.

The DMP is considered to be a 'live' document and is to be subject to both regular review and reactive amendments should there be any changes to the activities undertaken, or unexpected impacts that require additional mitigation.

Figure 1 – Earthworks area showing cuttings and embankments



2. Roles and Responsibilities

2.1. Site Responsibilities

It is recognised that all those participating in the delivery of the Project have a role to play in the minimisation and mitigation of dust impacts. However, it is also recognised that certain key roles within construction teams will play a more active role in ensuring the dust management requirements and mitigation measures are implemented. The key dust management roles and responsibilities are shown in Table 2-1.

Table 2-1 – Dust management roles and responsibilities

Role	Responsibility
Project Manager (Contractor)	Ensure all works are carried out with mitigation controls set out in this document. Examine results of regular dust audits, and any dust monitoring records at weekly progress meetings. Examine the outcomes of any dust complaints and ensure rectification measures have been put in place. Approve Working Methods. Support any measures to mitigate dust as far as reasonably practicable.
Site Agent (Contractor)	Ensure all works are carried out with mitigation controls set out in this document. Incorporate requirements of this document within Working Methods and ensure appropriate dust monitoring is undertaken, including daily dust logs/checklists. Undertake site inductions to all new starters and brief individuals/groups on site dust management rules.
Works Manager (Contractor)	Ensure Works Briefings on working methods and restrictions are given to supervising foreman.
General Foremen (Contractor)	Carry out Works Briefings to workforce on approved Method Statements and any specific mitigations and restrictions. Ensure all works are carried out in accordance with approved Method Statements. Report any non-compliances with the DMP and/or any dust related environmental incidents to supervisor.
Health and Safety Manager (Contractor)	Provide specific training in relation to dust management to all levels of staff. Undertake regular dust audits/inspections to ensure adherence to agreed working methods and correct implementation of mitigation measures.
Stakeholder Manager (Contractor)	Liaise with stakeholders and advise on progress of the works through regular meetings, letter drops and updates on site notice boards. Be available to answer any stakeholder concerns. To log and investigate any dust complaints and report outcomes to Project Manager and Client. Attend meetings with regulatory bodies.

3. Planning Context and Commitments

3.1. Planning condition

Planning approval for the proposed activities was granted in June 2020. As part of the approval, conditions were imposed on the planning permission (n.5 of 20/0738/FUL (Powys CC) (and n.4 of P2020/0362 (NPTCBC)) which require a DMP to be submitted and approved by the local planning authorities (LPAs) prior to commencement of development.

3.2. Environmental Statement: Air Quality Assessment

Air quality impacts were considered within the May 2020 Environmental Statement¹ (ES). The air quality assessment used guidance documents from professional institutions to determine a proportionate level of assessment based on the expected activities.

These guidance documents included:

- IAQM 2017, Land-Use Planning & Development Control: Planning for Air Quality²
- IAQM 2016, Guidance on the Assessment of Mineral Dust Impacts for Planning³
- IAQM 2014, Guidance on the assessment of dust from demolition and construction⁴

The ES concluded that the dust impacts of the development were likely to be negligible and that a detailed assessment was not required. The ES conclusions are replicated below:

Although not specifically relevant to consideration of construction dust, the ES also found that no further assessment of air quality pollutant emissions from vehicles on the local road network was required.

Although impacts of dust and PM₁₀ were assessed to be insignificant, it is implicit in the IAQM methodology and as an overarching principle of good practice for the project to adopt proportionate and practicable measures to minimise dust emissions during construction. This DMP is the mechanism for committing the project to the implementation of proportionate and practicable measures to minimise, the monitoring of dust generating activities and the logging and addressing of complaints

¹ Nant Helen Complementary Restoration Earthworks, Environmental Statement, May 2020

² IAQM, Land-Use Planning & Development Control: Planning For Air Quality, January 2017

³ IAQM, Guidance on the Assessment of Mineral Dust Impacts for Planning, May 2016

⁴ IAQM, Guidance on the assessment of dust from demolition and construction, February 2014

4. Potential Impacts

4.1. Receptors

The Project is located within the Dulais Valley located within the boundaries of Powys County Council (PCC) and Neath Port Talbot County Borough Council (NTPCBC), with the Brecon Beacons National Park Authority boundary immediately to the north. Nearby settlements include Onllwyn, Seven Sisters, Ystradgynlais, Caehopkin, Abercrave or Coelbren.

The nearest residential receptors are within 100m of the proposed work areas and approximately 25m from the site boundary to north and northeast.

The closest statutory ecological receptors to the site are two Sites of Special Scientific Interest (SSSI): Gorsllwyn and Nant Llech. Gorsllwyn is located approximately 870 m to the south-east of the proposed development and is designated due to its raised mire. Nant Llech is located approximately 100 m, to the northeast of the proposed development and has been designated for: Broadleaved Semi-natural Woodland; Bryophytes (mosses and liverworts); Westphalian Sedimentary Rocks; and Westphalian Fossil Plants. Statutory ecological sites are shown in Figure 2 below.

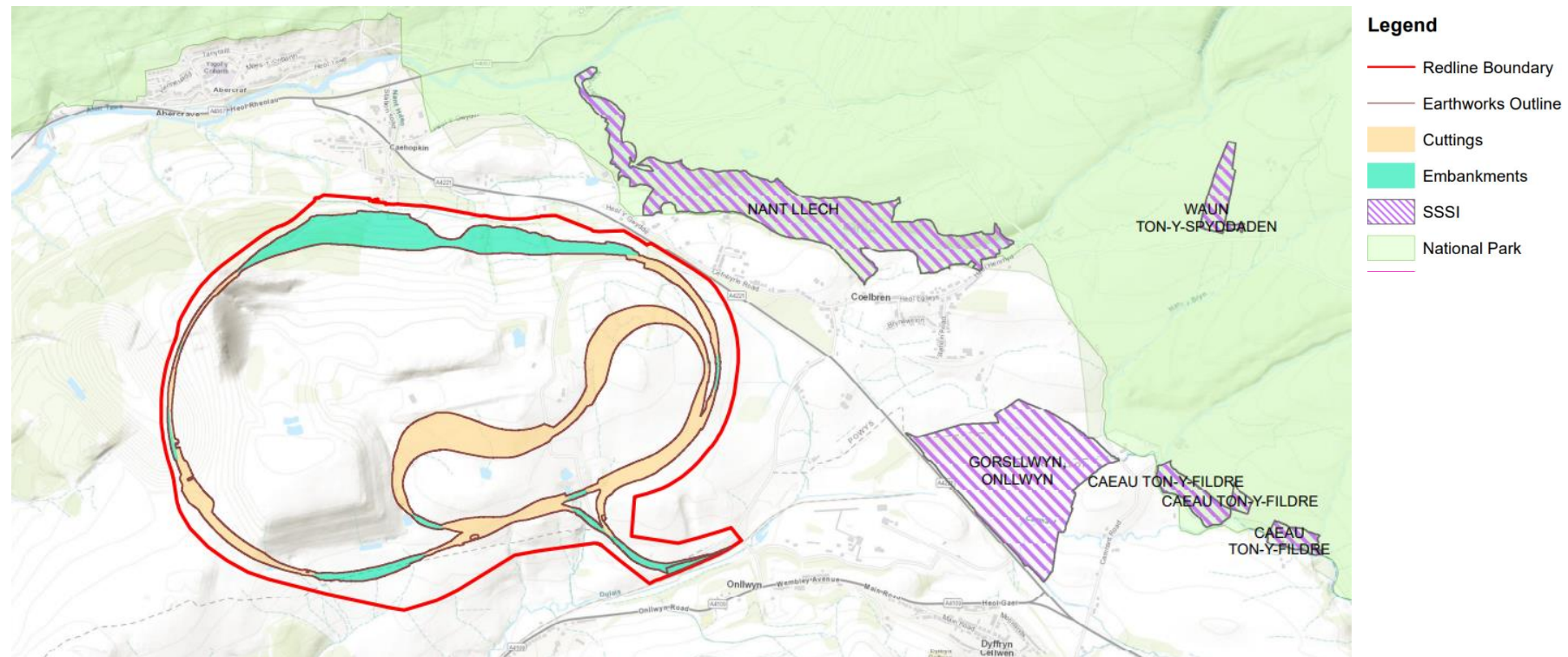
It is unlikely that there will be a significant impact of the proposed construction activities on any sensitive receptors as a result of dust generating activities, provided that the measures outlined within this DMP and best practice mitigation measures are applied.

4.2. Dust generating activities

The specific phases of development and details of potential dust generating activities are defined in Table 4-1. Each phase of the project includes a range of potential dust raising activities, however through adherence to the measures set out within this DMP, the impacts of the development in this regard are predicted to be minimal.

Table 4-1 - Potential dust generating activities

Activities	Description
Site Preparation	Ecological mitigation works, vegetation clearance/stripping, protection of services and fencing.
Temporary and permanent drainage works	Construction/installation of temporary drainage systems – Installation of culverts, watercourse diversions, drainage channels.
Creation of cuttings and embankments	Excavation, movement, storage and use of soils/materials.
Landscaping/habitat creation	Seeding of soils with appropriate species mixes, creation of ponds and scrapes, planting, construction of landscape bunds.



5. Mitigation Measures

5.1. Control Measures within CEMP

Dust control and mitigation measures that aim to minimise the creation of dust and particulate matter emissions are detailed within the CEMP. Where relevant, these measures are replicated within this document, to create one single point of reference for dust management.

5.1.1. CEMP General Measures

- The Contractor is to instigate behavioural policies for all the site personnel with regards to traffic/vehicle management with the aim of minimising impacts to air quality and dust creation. Behavioural policies are to cover:
 - Minimisation of traffic to site by 'sharing' vehicles or by the use of a site bus;
 - Avoidance of part load deliveries;
 - Utilisation of pre-booked delivery policy to minimise holding vehicles prior to loading or unloading;
 - Ensuring that all construction plant, vehicles and equipment are turned off rather when not in use, avoiding idling; and
 - Where feasible, considering the use of hybrid generators.
- Vehicle/ equipment washing facilities are to be positioned a minimum of 10m from any watercourses and constructed with a drainage system.

Note - The last measure is not directly a dust mitigation measure but highlights commitment to provide vehicle and equipment washing which will support the effort to reduce off site track out onto the local road network, and therefore the creation of dust.

5.1.2. CEMP Vehicle and Plant Movements

- Haul routes are to be regularly inspected and maintained to minimise sediment laden run off.
- Haul roads to be dampened down to minimise dust generation by plant movements.
- All vehicles, plant and equipment to be regularly inspected and maintained in accordance with Manufacturer recommendations. Records of inspections are also to be maintained on site.
- Areas of hard standing to be provided at site access and egress points, where practicable. The areas will be regularly inspected and cleared.
- Site wheel washing facilities will be established at ~~access~~ and egress points and located a minimum of 10m from any watercourse and outside of the flood plain.
- Good practice guidance for vehicle washing and cleaning from GPP13 to be implemented

5.2. Additional Dust Mitigation Controls

In addition to the mitigation measures set out within the CEMP, this DMP detailed comprehensive and site-specific dust/air quality control measures. These are set out below and are in line with best practice measures provided in the IAQM^{3,4}.

5.2.1. Communication

- The name and the contact details of Stakeholder Manager will be communicated to local residents and displayed at the site boundary, allowing contact to be made if there are any air quality/dust concerns or complaints.
- LPAs and local communities to be kept informed of works at the site.

- All dust and air quality complaints will be recorded. An investigation into the cause will be undertaken and appropriate remedial measures implemented to avoid recurrence.
- A record of any implemented remedial measures will be available on-site. The complaints log will be made available to the local authority, should it be required.

5.2.2. Planning of Activities

- Machinery, equipment and dust generating activities to be undertaken a minimum of 100m from sensitive receptors, where practical.
- Where possible, activities close to sensitive receptors, with the potential to create significant dust will be undertaken during favourable weather conditions, avoiding extended periods of dry and windy conditions.
- Where possible, exposed soil to be minimised through scheduling vegetation and topsoil stripping immediately prior to commencement of construction activities.
- A separate paved parking area with no access to construction areas to be provided for non-construction vehicles.

5.2.3. Site Management

- All working areas will be kept in a clean and tidy condition.
- No burning of material on-site.
- An adequate water supply will be provided on the site for effective dust suppression/mitigation from existing lagoons, using non-potable water ~~where possible and appropriate~~. Suppression techniques will be used more frequently during periods of dry weather and may include the use of water guns, cannons, and/or misting fans.
- Weekly inspections of haul routes will be undertaken, and any subsequent action will be recorded in a site logbook.
- Appropriate wheel washing facilities are to be available at access and egress points.
- Crushing and screening will take place within enclosed/sheltered areas of the site, away from boundaries with off-site receptors. Dust suppression for these operations will be undertaken locally using water canons or mist fans when required.
- Where required, dust screens will be employed.

5.2.4. Vehicle Movements

- Standard good practices are to be followed for site haulage:
 - Abrupt changes in direction to be avoided;
 - Regular clearing, grading and maintenance of haul routes;
 - Vehicles to be evenly loaded to avoid spillages;
 - Site speed limits of 15mph to be adhered to; and
 - If within 100m of site boundary, local dust suppression means, i.e. canons or mist fans if there is a risk of dust being generated and overspilling the site boundary
- Appropriate wheel washing facilities are to be available at access and egress points.
- Where required, road sweepers to be mobilised.
- Loaded vehicles carrying dust generating materials will be covered when leaving site.

5.2.5. Monitoring

- On and off-site visual inspections to be included within daily operational checks. Any evidence of abnormal dust levels in air or accumulation on surfaces will be logged and remedial action taken as required.
- The frequency of off-site inspections will be adjusted based on the dust risk (higher frequency in dry and windy conditions). Further details on monitoring are provided in Section 6.

- Where possible, particularly dusty activities will be avoided during extended periods of dry and windy conditions.

6. Dust Monitoring

6.1. Monitoring Regime

A monitoring regime appropriate to the site is to be implemented to ensure effective application of dust mitigation techniques.

As identified receptors are typically not within 100m of dust raising activities, it is not considered proportionate to supplement visual observations with deposition dust gauges or continuous particulate matter monitoring. The requirement for further monitoring is however to be reviewed throughout the construction works if there is any evidence of off-site impacts (evidenced by complaints or observed dust deposition).

The contractor shall keep records of inspections and visual monitoring. The records should be:

- Kept on site;
- Maintained by the contractor for at least two years; and
- Made available for the Local Authority EHO on request.

The Health and Safety Manager is responsible for implementing the monitoring regime and the methods for visual monitoring and controlling dust are set out in the following sub sections.

6.2. Visual Monitoring

The day-to-day effectiveness of on-site dust management and mitigation measures shall be visually assessed by the Health and Safety Manager. Visual observations can be used to assess dust emissions from certain activities, for example stockpiling and excavation.

Noted that visual observations of dust emissions are subjective; however, this can be overcome by the monitoring predominantly undertaken by same, trained personnel.

A daily site log/ checklist (Table 6-1) is to be completed. Initially, inspections are to be carried out and recorded on a daily basis; however, should there be continued evidence of no dust deposition at receptors beyond the site boundary, the frequency of visual checks can be reviewed and potentially reduced to a more proportionate level.

The following information will be recorded in the site log/checklist, as a minimum, during each visual check:

- Time and location;
- Dust generating activities being undertaken on-site;
- Any visible emissions of dust arising from the activities;
- Evidence of deposition of dust beyond the working area;
- Details of whether the control measures are in place and in working order; and
- Weather conditions (description of wind speed, direction, rainfall) now and in future.

Where, in the opinion of the person undertaking the inspection, there is evidence of airborne dust travelling beyond the site boundary, corrective action is to be taken without delay. If the source of the emission is uncertain the operator should undertake further investigation, and where necessary undertake further monitoring to identify operations giving rise to the dust.

Incidents reported outside the regular visual checks, along with all environmental incidents will be recorded and reported to the Site Foremen and Project Manager. Following a review of the incident, the Contractor's Health and Safety Manager will instigate an appropriate change in the procedures where necessary.

Table 6-1 - Pro Forma for Visual Dust Monitoring Checklist

Week commencing:					
Person completing form:					
Visual inspection of:	Day of week:				
	Mon	Tue	Wed	Thu	Fri
Time of day					
Activities being undertaken					
Dust generation observed					
Dust control measures available and being applied where required <i>E.g. sheeting, bowsers</i>					
Mud/debris evident beyond site boundary on haul route					
Dust soiling evident e.g. on cars, windowsills etc					
Wind speed/direction					
Rainfall					
Remedial action taken:					
Further action required:					
Forecast for next week					
Form sent to:					
Date and time form sent:					

6.3. Incident response

In the event that a dust incident occurs, e.g., off site dust migration observed or dust soiling of properties reported, an investigation will be undertaken to determine the likely source.

The investigation shall include:

- Confirmation of source of the observed dust generation or soiling;
- Evaluation of impacts beyond the site boundary and at receptors;
- Examining the effectiveness of control measure(s);
- Adjusting the dust generating activity or re-establishing mitigation control;
- Identifying additional controls if required; and
- Re-visiting the location of impact after implementation of revised control measures to ensure it is effective.

All observed dust events shall be recorded, including the suggested remedial actions and confirmation that the issue has been resolved.

A log of any dust incidents and subsequent actions will be maintained and will be available for inspection by the local authority EHO should it be required.

It is important to note that if off-site dust migration is observed beyond the site boundary, while an indication of potential elevated dust emissions from site activities, this does not imply an impact at a receptor location.

7. Complaints

The procedure for the management of complaints outlined in this subsection is concerned only with complaints received related to the construction activities.

As previously stated, a Stakeholder Manager will be responsible for complaint management, reception and investigation of any complaints and discussion of any concerns with stakeholders.

All complaints will be made to a dedicated phone number and, after being recorded and logged, an initial investigation will be completed as soon as practicable.

The Stakeholder Manager will maintain a log of all complaints received, subsequent actions taken to investigate the complaint and any necessary actions which have been put in place to rectify the situation.

A dust complaint form has been provided at Appendix A. The form prompts the complainant to provide a detailed analysis of the dust emission observed/settlement experienced to support the investigation. The following key information is requested within the form:

Date(s) and time(s) dust emissions were observed

Understanding the date(s) and time(s) the dust emissions were observed will allow the cross-referencing of the complaint with on-site activities. If dust emissions occurred at a time when site activity was minimal, the cause of the complaint could be traced to other activities. Information on weather conditions (e.g. wet / dry, windy or calm) will provide context on the likely risk of dust emissions and settlement occurring.

Dust emission source

The complainant is invited to identify the perceived source which together with other information submitted will be used to investigate the potential cause of complaint.

Description of the dust

The description of the dust is important and is therefore the largest section on the page, prompting the Stakeholder to give a good level of detail. The questions prompt the Stakeholder to provide an objective and subjective description of the dust which has resulted in the complaint, the characteristics of the dust, (e.g. particle colour, size and texture) and where it is deposited.

How often dust emissions / settlement is observed

Information on the frequency and duration of dust emissions may assist in identifying if the source is associated with regular day to day operations or is an isolated incident.

Where the effects of dust emissions / settlement are observed

Information on where dust settlement is observed and any requirement for increased frequency of cleaning of surfaces may assist in identifying the direction of the dust source relative to the receptor and the frequency of emissions.

Additional factors

Understanding the impact of the dust emission / settlement on the level of amenity enjoyed or a requirement for increased cleansing of affected surfaces can inform an appraisal of the magnitude of the dust emission.

Additional contextual factors which may have contributed to the complaint, such as windows open due to hot weather, will assist in investigating the complaint as part of the overall Stakeholder engagement processes.

Appendix A. Dust Complaint Form

Contact details	Name					
	Address & Post Code					
	Contact	Tel.:	Email:			
Date(s) and time(s) dust emission / settlement was observed						
Weather conditions at time of observation e.g. sunny / raining / dry calm / light winds / gusting wind direction (e.g. blowing from east)						
Can you identify the source of the dust emission / the activity causing the dust arisings? e.g. <i>visible</i> plume arising from <i>named location</i> observed specific activity						
Please describe the dust emission / settlement (Where possible, please record a short video clip of visible dust plumes and / or photographs) Was it constant / intermittent? What colour is the dust? Is the dust light or dark in tone? Is the dust fine / coarse grained? Is it granular or fibrous in texture? Other features, please describe						
How often does the observed dust emission / settlement occur?	Rarely	Sometimes	Weekly	Daily		
	☐	☐	☐	☐		
Where is deposited dust observed? e.g. indowsill (external / internal) private vehicle local highway garden plants or furniture other, please describe						
How often do the surfaces require cleaning?	Rarely	Sometimes	Weekly	Daily		
	☐	☐	☐	☐		
Are there any additional factors that have contributed to the issue you wish to share with us?						

Have you taken any other action to address this issue? e.g. contacted the Local Authority	
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