

**DEPARTMENT OF
OPERATIONS**

Dean Clapworthy
Bury Council Development Control

Date 5 March 2024
Reference CL295.050324.1

Dear Helen

Site of Radcliffe Leisure Centre, Spring Lane, Radcliffe, Manchester, M26 2SZ, Planning Application: 70002 – Contaminated Land

I write regarding the above planning application. The Environment Section has received copies of the following reports:

- Management Survey for Asbestos-Containing Materials, Spring Lane School & Radcliffe Leisure Centre, Spring Lane, Radcliffe, Manchester, M26 2SZ, Eton Environmental Group Ltd, Reference: J060024 V1, 20 May 2022.
- Phase II Geo-Environmental Assessment Report, Star Academy (Temporary Accommodation), Brownfield Solutions, Reference: CM/C5394/12669 Interim, 8 December 2023. **Final version needed**
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- ~~Desk Study, Star Radcliffe, Geotechnics, Reference: PN228400 Rev 1, May 2022.~~
- ~~Preliminary Ground Investigation Report with Interpretative Chapter, Star Radcliffe, Geotechnics, Reference: PN224390 Rev 1, August 2022.~~

The Environment Section has reviewed the above information in order to assess whether the following items requested in my previous correspondence have been adequately addressed:

1. Pre-demolition asbestos survey report and confirmation asbestos containing materials have been removed.
2. An updated risk assessment for the proposed temporary school.
3. A remediation statement.
4. A materials management plan, if the CL:aire Definition of Waste Code of Practice is to be used.
5. After completion of site works, a verification report is required to validate that the work undertaken conforms to the remediation proposals received and agreed by this Section.

The site is currently in use as Spring Lane School (a pupil referral unit) and a Leisure Centre including a temporary swimming pool, and a former electricity sub-station. Current uses in the surrounding area include housing, a Metrolink Line and station and commercial buildings. Previous uses at the site have included open land associated with a farm, followed by railway land including a goods shed and goods station. By 1979 the site had been developed as a school. Surrounding

former land uses have included a former railway line, a gravel pit, mineral water works, iron works, a rope walk, sawmill, unspecified works, a colliery and residential developments. The site is within 250m of one landfill site, known as Darbyshire Street Landfill, which is an infilled railway cutting. There are two surface watercourses are situated within 250m of the site including the Manchester, Bury and Bolton Canal which flows along the northwest boundary of the site and the River Irwell to the south. The site is situated above the Carboniferous Middle Coal Measures Secondary A Aquifer which is overlain by River Terrace Deposits. It is likely that deposits of made ground exist at the site.

It is understood that the proposed development comprises the demolition of existing school buildings/temporary leisure centre and the construction of a two-storey temporary school building, external landscaping and associated site infrastructure.

1. Pre-demolition asbestos survey report and confirmation asbestos containing materials have been removed

An asbestos survey report has been submitted. The survey identified asbestos (chrysotile and amosite) containing materials comprising insulating board, floor tiles with adhesive, textured coatings, gaskets, a resin toilet cistern and bitumen. These materials will require removal prior to demolition.

Validation information including waste disposal documentation will be required for the asbestos containing materials identified.

2. An updated risk assessment for the proposed temporary school

A site investigation and risk assessment report has been provided which covers the temporary school:

- Phase II Geo-Environmental Assessment Report, Star Academy (Temporary Accommodation), Brownfield Solutions, Reference: CM/C5394/12669 Interim, 8 December 2023.

The report is an interim version and therefore, a final version of the report is required.

The preliminary site investigation was carried out by Geotechnics in May 2022 and covered the wider Spring Lane School and Radcliffe Leisure Centre site. The following locations were located within or near the redline boundary of the application for the temporary school building:

Technique	No.	Comments
Window samples	3	Excavated to a depth of between 3.45m and 5.0m bgl (DS05, DS06, DS07).
Hand dug pits	3	Excavated to a depth of between 0.6m and 1.2m bgl (HD01, HD02, HD04). All locations were terminated at obstructions within the made ground.

Soil sampling	2	Samples of made ground (HD01 1.0m and DS05 0.5m) analysed for a suite of analysis that included metals, TPH CWG, speciated PAHs, phenol, VOCs and asbestos.
Soil leachability sampling	1	Sample of made ground (HD01 1.0m) analysed for a suite of analysis that included metals, inorganics and phenol.

Further investigation was undertaken by Brownfield Solutions in August 2023, which also covered the wider site. The following locations were located within or near the redline boundary of the application for the temporary school building:

Technique	No.	Comments
Window samples	2	Excavated to a depth of between 1.2m and 5.45m bgl (WS104 and WS106).
Trial pits	1	Excavated to a depth of 2.2m bgl (TP108).
Hand dug pits	2	Excavated to a depth of between 1.1m and 1.2m bgl (HP101 and HP102).
Soil sampling	3	Samples of made ground were analysed for a suite of analysis that included metals, TPH CWG, speciated PAHs, BTEC, MTBE and asbestos: • WS106 0.15-1.2m • TP108 0.1-1.0m • HP101 0.3-1.0m

Site Ground Conditions and Human Health Risk Assessment: Both investigations found similar ground conditions at the site comprised locally of tarmac, concrete sub-base, concrete slabs or topsoil, over granular made ground typically to approximately 2.0m but locally to in excess of 3.45m bgl (DS07) containing ash, brick, concrete, coal, glass. Slight hydrocarbon odours were noted in the made ground in DS05 and TP108.

The natural strata comprises glacial clays and glaciofluvial sand and gravel deposits to in excess of 5.45m bgl. Bed rock was not encountered.

The soil analysis results have been compared to the Defra C4SLs and CIEH/LQM S4ULs residential without homegrown produce land use:-

The following elevated concentrations of contaminants were found in the made ground during the Geotechnics and Brownfield Solutions investigations:

- Arsenic – Samples TP108 0.1-1.0m (43mg/kg), HP101 0.3-1.0m (43mg/kg), based on C4SL of 40mg/kg.
- Naphthalene - DS05 0.5m (21mg/kg) based on S4UL of 5.6 mg/kg.
- Benzo(a)anthracene - DS05 0.5m (23mg/kg) based on S4UL of 14mg/kg.
- Benzo(b)fluoranthene - DS05 0.5m (23mg/kg) based on S4UL of 4mg/kg.
- Benzo(a)pyrene - DS05 0.5m (19mg/kg) based on S4UL of 3.2mg/kg.

- Dibenzo(ah)anthracene – Samples HP101 0.3-1.0 (0.33mg/kg) and DS05 0.5m (2.1mg/kg) based on S4UL of 0.32mg/kg.

No asbestos was encountered. Based on the findings of the site investigations, the consultant considers that there is a potential risk to future site users and that remedial action is required.

Site Water Conditions and Controlled Waters Risk Assessment: Within the current application area groundwater strikes were encountered in the sand and gravel deposits in DS05 and DS06 at 3.0m bgl. During the Brownfield Solutions investigation perched groundwater was encountered within made ground in TP108 (1.5m) and HD102 (1.1m).

The results of the soil leachability sampling carried out as part of the Geotechnics investigation (HD01 1.0m) identified potentially elevated levels of copper. Levels of 1.7 µg/l exceeded the EQS of 1µg/l but was lower than the UK DWS of 2000 µg/l. Based on the findings of the preliminary site investigation the overall risk to controlled waters is considered low, as no significant sources of contamination have been identified at the site. This Section is satisfied with this assessment.

Site Ground Gas Conditions and Risk Assessment: Ground gas monitoring was carried out by Geotechnics and Brownfield Solutions within the wider site, but none of the locations are located within the application site.

Two phases of gas monitoring have been carried out:

- Geotechnics undertook a total of six visits were carried out over a period of five weeks between 16 June and 20 July 2022 with atmospheric pressure less than 1000mb on one occasion. The response zones were as follows:
 - BH01 (glacial sand and gravel)
 - BH02 shallow (made ground/glacial sand and gravel).
 - BH02 deep (glacial sand and gravel)
 - BH03A (made ground/glacial sand and gravel).
 - BH04 (made ground/glacial sand and gravel).
- Three additional visits were carried out by Brownfield Solutions over a period of one month between 30 August and 27 September 2023 with atmospheric pressure above 1000mb on all occasions. The response zones were as follows:
 - WS101 0.6-1.2m (made ground)
 - WS102 0.5-1.5m (made ground)
 - WS103 0.5-1.5m (made ground)
 - WS104 1.0-2.0m (made ground)
 - RO103 18.0-20.0m (mudstone) – flooded on all occasions.
 - RO104 17.5-20.0m (mudstone) – flooded on all occasions.

WS104 (the nearest location to the temporary school building) was flooded on a number of occasions.



During the Geotechnics investigation, no methane was recorded. The maximum carbon dioxide concentration was 4.0%v/v. Flow rates were typically <0.1 l/h with a maximum flow rate of 0.7 l/h. Flows rates of 3.6 l/h was recorded in BH02 on the final visit, however this is likely attributed to a significant rise in groundwater levels within the borehole.

During the Brownfield Solutions monitoring, significantly elevated concentrations of methane (32.3%v/v, 41.6%v/v, 23.9%v/v) were recorded in WS101. No methane was recorded in any of the other boreholes. Elevated levels of carbon dioxide (maximum 11.7% in WS104). The maximum flow rate recorded was 37.8 l/hr in RO103 within the mudstone, but this can be attributed to changes in groundwater levels within the borehole. Typical flow rates within the shallow boreholes were between <0.1 and 0.4 h/l.

The consultant has used the methodology set out in CIRIA 665 and BS8485:2015 to assess the gas regime at the site. Worst-case Gas Screening Values (GSVs) of 0.0166 l/h methane and 0.0456 l/h carbon dioxide have been calculated for the shallow boreholes (WS101-WS104) targeting the made ground (41.6%v/v methane, 11.7%v/v carbon dioxide and 0.4 l/h flow). No GSVs were calculated for the deep boreholes (RO103 and RO104) as these were designed to target possible mine gas and the response zones of these boreholes were flooded on all occasions.

The GSVs place the site into Characteristic Situation 1 (CS1) for carbon dioxide, however, where the maximum concentrations of methane and carbon dioxide exceeds 1%v/v and 5%v/v respectively, the consultant should consider increasing the gas regime at the site to Characteristic Situation 2. Consequently, a detailed gas risk assessment has been completed.

The elevated levels of methane recorded in WS101 were attributed to introduction of oxygen to the localised cohesive organic made ground, as a result of the installation of the borehole. The recorded flow rates were low indicating no significant ongoing gas generation. The consultant considers that these levels of methane could not be generated in normal conditions. Additionally, it is considered likely that this soft cohesive made ground would be removed during construction of the main school and no other boreholes recorded elevated concentrations of methane during either period of monitoring.

Ground gas ratio plots have been completed which indicate that the source of the elevated levels of carbon dioxide encountered in WS104 are due to microbial respiration and naturally occurring oxidation of the organic material within the made ground. No elevated levels of carbon dioxide were encountered in the other boreholes.

Consequently, the consultant considers that the gas regime at the site is representative of Characteristic Situation 1 and that no special gas protection measures are required. This assessment appears reasonable.

3. A remediation statement

The following outline measures are proposed so that the contamination identified on site no longer presents a risk:

- Limited confirmatory post-demolition intrusive site investigations to gain additional coverage comprising trial pitting and window sample boreholes.
- Cover system with 450mm thick of 'clean' validated topsoil/subsoil in soft landscaping areas.
- Production of Materials Management Plan (MMP) under the CL:AIRE Definition of Waste Protocol for the re-use of soil materials on site.
- UU water supply pipe risk assessment to determine if barrier pipe is required on site.
- Watching brief to identify and deal with any previously unidentified contamination.

The proposed outline remediation actions are acceptable to this Section.

A remediation strategy has been received for the wider permanent school site, which pre-dates the geo-environmental assessment for the Temporary School:

- Remediation Strategy, Star Academy, Radcliffe, Brownfield Solutions Ltd, Reference: JM/C5394/12387 Original, October 2023.

A remediation strategy and validation plan are required, which clearly identifies which measures are required to allow construction of the temporary school only.

4. A materials management plan, if the CL:aire Definition of Waste Code of Practice is to be used

It is understood that a material management plan will be provided in due course.

5. After completion of site works, a verification report is required to validate that the work undertaken conforms to the remediation proposals received and agreed by this Section.

It is understood that a verification report will be submitted in due course.

Conclusion

In order for this Section to be satisfied that this development does not pose a risk to human health or the environment, the following information needs to be submitted to the Council for approval:

- (i) Final version of the Phase II Geo-Environmental Assessment Report, Star Academy (Temporary Accommodation), Brownfield Solutions, Reference: CM/C5394/12669 Interim, 8 December 2023.
- (ii) A remediation strategy and validation plan for the proposed temporary school.
- (iii) Validation information to confirm that the asbestos containing materials identified have been removed, including waste transfer documentation.
- (iv) A materials management plan, if the CL:aire Definition of Waste Code of Practice is to be used.
- (v) After completion of site works, a verification report is required to validate that the work undertaken conforms to the remediation proposals received and agreed by this Section.



This Section cannot recommend discharge of Condition 4 until items (i) and (ii) above have been submitted and approved.

Condition 9 requires the submission and approval of a verification report.

All parties involved with waste and soil movement at the site should be aware that materials illegally deposited or deposited at inappropriate sites may be subject to relevant landfill taxes, payable by all parties. Only robust due diligence is a defence against joint liability. Illegal deposits can include moving waste soil material on sites, or between sites, without the appropriate permits, exemptions or duty of care.

Please Note: The Environment Section has used all reasonable endeavours to determine the risk from contaminated land and ground gas based upon the information available to it. However, the comments made above should not be taken to imply that the land is safe or otherwise suitable for this or any other development. The ultimate responsibility for safe implementation of the development scheme resides entirely with the landowner and/or Planning Applicant.

Please do not hesitate to contact me if you require any clarification of the above.

Yours sincerely

Rebecca Jones
Environmental Protection Officer

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