



**BROWNFIELD
SOLUTIONS LTD**

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

MORGAN SINDALL

Star Academy, Radcliffe (Temporary Accommodation)

Remediation Validation Report – Temporary Accommodation

TM/C5394/13333

BIM Ref. FS1013-BSL-XX-XX-T-O-1006

Revision: P01

July 2024

PROJECT QUALITY CONTROL DATA SHEET

Site Name:	Star Academy Radcliffe (Temporary Accommodation)		
Document Name:	Remediation Validation Report		
Reference:	TM/C5394/13333		
Status:	-	30/07/2024	Interim.

Issued By:	Client:	Engineer:
Brownfield Solutions Ltd William Smith House 173 – 183 Witton Street Northwich Cheshire CW9 5LP Tel: 01606 334 844 brownfield-solutions.com	Morgan Sindall 6 th Floor 2 Anchorage Quay Salford M50 3YW	Renaissance Associates Ltd Carvers Warehouse 77 Dale Street Manchester M1 2HG
	Contact: Jon Gaskell	Contact: A Isherwood

Written by:



T Mayall
MGeol (Hons) FGS
Senior Project Engineer

Checked by:



A J Stokoe
BSc (Hons) CSci MEnvSc FGS
Associate

CSci
Chartered
Scientist

Approved by:



A J Stokoe
BSc (Hons) CSci MEnvSc FGS
Associate

CSci
Chartered
Scientist



Connect with us on
LinkedIn

CONTENTS

1.0	INTRODUCTION	1
1.1	CONTEXT	1
1.2	OBJECTIVES	1
1.3	PROPOSED DEVELOPMENT	1
1.4	PREVIOUS REPORTS AND CORRESPONDENCE	1
1.5	LIMITATIONS	2
2.0	GROUND MODEL SUMMARY	3
2.1	DESCRIPTION OF SITE	3
2.1	ENVIRONMENTAL SETTING	3
3.0	SUMMARY OF RISK ASSESSMENTS	6
3.1	GENERAL	6
3.2	HUMAN HEALTH RISKS	6
3.3	PERMANENT GROUND GASES AND VAPOURS	6
3.4	RISK TO CONTROLLED WATERS	7
3.5	SUMMARY	8
4.0	REMEDIATION STRATEGY	9
4.1	OUTLINE	9
4.2	SITE REMEDIATION REQUIREMENTS	9
5.0	SITE REMEDIATION AND VALIDATION	10
5.1	GENERAL	10
5.2	CHEMICAL SUITABILITY OF IMPORTED AND SITE-WON MATERIALS FOR RE-USE	10
5.3	INSTALLATION OF CLEAN COVER SYSTEM / BREAK LAYER	12
5.4	MMP VERIFICATION REPORTING	12
6.0	CONCLUSIONS	13
6.1	GENERAL	13
6.2	SUITABILITY OF IMPORTED / SITE-WON SOILS	13
6.3	VERIFICATION OF CLEAN COVER SYSTEM	13
6.4	MATERIALS MANAGEMENT PLAN	13
6.5	WATCHING BRIEF	13
6.6	LONG TERM MONITORING AND OTHER REQUIREMENTS	13

DRAWINGS

Drawing Number	Re	Title
FS1013-ALA-EX-ZZ-D-L-0101-S2	P06	Temps Whole Site Plan
FS1013-ALA-EX-ZZ-D-L-0001-S4	P14	Whole Site Plan
C5394/01A	-	Site Location Plan (Temp Accommodation)

APPENDICES	
Appendix	Title
Appendix A	Chemical Specification for Soils
Appendix B	Materials Management Plan
Appendix C	U1 Waste Exemption
Appendix D	Chemical Testing Results
Appendix E	Quarried Aggregate Provenance Information
Appendix F	Site Visit Records and Photographs
Appendix G	Delivery Notes

1.0 INTRODUCTION

1.1 Context

This Remediation Validation Report has been produced by Brownfield Solutions Limited (BSL) on behalf of Morgan Sindall Construction for a site off Spring Lane, Radcliffe.

As of July 2024, remedial works are ongoing, and this report will be updated upon satisfactory completion of the remediation.

1.2 Objectives

The objective of the validation works is to provide evidence demonstrating implementation of appropriate remediation measures. The remedial works were carried out in order to make the site suitable for the proposed end use as a school, as per the BSL Remedial Strategy, reference PH/C5394/12924 Rev A dated July 2024, which is understood to have been accepted by the Local Planning Authority (Bury Council).

This report is intended to provide evidence demonstrating implementation of the remedial measures detailed in the Remedial Strategy, in order to support the discharge of planning conditions, specifically condition 5 of Bury Council Planning Permission ref. 70002.

1.3 Proposed Development

The proposed development involves the construction of a 'Temporary Accommodation' school building in the place of the former school building onsite. The building will consist of modular units, approximately two storeys high with associated infrastructure and hardstanding as shown on the Temps Whole Site Plan, drawing No. FS1013-ALA-EX-ZZ-D-L-0101-S2-P06 provided to BSL by Renaissance Associates Ltd.

It is assumed that the temporary accommodation development will remain onsite until the 'super teaching block' with a sports hall annexe and extensive MUGA / Sports Pitches is developed as part of the wider site, as detailed on the Whole Site Plan, drawing No. FS1013-ALA-EX-ZZ-D-L-0001-S4-P14.

The development of the wider site is being carried out under a separate planning permission and the remedial works required for wider site are detailed separately in BSL Remedial Strategy ref. JM/C5394/12470 Rev A, although requirements generally align with those for the Temporary Accommodation.

1.4 Previous Reports and Correspondence

The following reports are applicable to the site and should be read in conjunction with this validation report:

-
- Geotechnics, Desk Study Report, ref PC228400, dated May 2022.
 - Geotechnics, Preliminary Ground Investigation Report with Interpretive Chapter, ref: PN224390, dated August 2022.
 - BSL Coal Mining Risk Assessment, ref: PH/C5394/12312, issued August 2023.
 - BSL Phase II Geo-Environmental Assessment Report, ref: PH/C5394/12387 Rev D, issued July 2024.
 - BSL Phase II Geo-Environmental Assessment Report, ref: CM/C5394/12669 Rev B, issued June 2024.
 - BSL Remedial Strategy – Temporary Accommodation, ref. PH/C5394/12924 Rev A, issued July 2024.
 - BSL, Materials Management Plan, ref. TM/C5394/13199, issued June 2024.
-

It is assumed that the Local Planning Authority will have provided the above reports to the appropriate statutory consultees and the recommendations therein have been accepted.

1.5 Limitations

This report has been carried out based on information obtained from a number of areas, BSL have assumed that this information is correct.

There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this report and therefore not been taken into account by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Morgan Sindall. No other third parties may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report, they rely on it at their own risk and BSL do not owe them any Duty of Care.

This report has been based on the proposed planning layouts provided. Any subsequent change to the planning layout may have an impact on the validity of recommendations made within this report. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

Any recommendations made in this report should be confirmed with the Regulatory Authorities to ensure compliance.

2.0 GROUND MODEL SUMMARY

2.1 Description of Site

The site is located off Spring Lane, Radcliffe, M26 2SZ. It is situated approximately 0.5 km north of Radcliffe Town Centre, centred on National Grid Reference 378700, 407630 as shown on the Site Location Plan, Drawing No. C5394/01A.

The main site features and potential issues identified during the time of the intrusive investigation are detailed below.

Feature	Description
Site Area	The site covers approximately 0.05 hectares.
Site Access	Access to the site is gained off Spring Lane to the south.
Current Land Use and Site Features	The site previously comprised a secondary school (Spring Lane School) and leisure centre (Radcliffe Leisure Centre) with associated hardstanding car parking areas. The school and leisure centre have since been demolished, with underground infrastructure grubbed out. As of May 2024, the site was level, surfaced with demolition material. A public footpath runs along the south-west border of the site (Banana Path). Prior to the demolition there were several manholes and services present in the proximity of the secondary school and leisure centre, some of which remained to the north and south of the former school post-demolition. An electricity substation to the south-east of the former school has been retained for the temporary accommodation development.
Potential Sources of Gross Contamination	Potential sources of gross contamination included the boiler house associated with the school development. There was also a chimney associated with the boiler house, although BSL understand this was disused and new gas boilers were installed in 2015 and 2019 for the school and leisure centre.
Vegetation / Ecology	Small clusters of trees are present near the entrance to the site off Spring Lane. A wooded area is also present to the west of the former school building but lies outside of the temporary accommodation site.
Topography	The site generally appears to gently slope to the south-east.
Site Boundaries	The site is enclosed by steel palisade fencing along the eastern border of the site, a wooded area to the north of the site, steel railings to the west and Spring Lane to the south.
Surrounding Area	The site is set within a mixed commercial and residential area, with a park and ride car park present to the south, residential properties to the west, a railway to the east, the disused Manchester Bolton and Bury Canal to the north-west and a wooded area to the north.

2.1 Environmental Setting

Site History

The site has been shown to have been developed from 1850, with a railway track transversing through the centre of the site. The historical site features are generally related to the railway development with associated goods yards and sidings, present until 1978. From 1987 a school is present onsite with associated playing fields and infrastructure, and an associated disused boiler room which is located in the eastern area of the site.

The surrounding developments include both industrial and residential. Evidence of mining has been present on the historical maps from 1850 with a colliery (Whittaker's Bridge Colliery) being present from 1891 to 1909, 200m NW of the site. Various industrial works have been present within 100m of the site.

Published Geology and Hydrogeology

From the Desk Study Assessment and published geology, it was anticipated that ground conditions would comprise the following sequence of strata (top down):

- Made Ground; over
- Glaciofluvial Deposits; over
- Pennine Middle Coal Measures Formation.

Hydrogeology

Based on the inferred geology, a summary of the Environment Agency aquifer designations is presented in the table below:

Stratum	Coverage	Aquifer Designation
Glaciofluvial Deposits	Full Site	Secondary (A) Aquifer. These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
Pennine Middle Coal Measures	Full Site	Secondary (A) Aquifer. These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

The site does not lie within 500m of a Source Protection Zone.

Hydrology

The nearest named watercourse and surface water feature is the Manchester, Bolton and Bury Canal, 190m to the north-west of the site at its closest approach.

Radon

Information from the environmental database report and BGS Radon Report dated 11th October 2023 indicates the extent of the proposed new building is not in a radon affected area and therefore no radon protective measures are necessary in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2023 Edition.

UXO Risk

There is no indication of former military use from the desk study. A non-specialist review of online Zetica mapping indicates the site to be in an area where the bomb risk is a low and no further consideration of UXO is required.

Observed Geology and Groundwater

From the investigations carried out within the temporary accommodation site area, the ground conditions can be summarised as below (top down):

- Made ground encountered from ground level to between 0.60m and >3.45m bgl, where proven the base of the made ground was generally circa 2.00m – 2.50m bgl.
- Natural strata encountered from 2.00m to between 3.20m and 4.10m bgl.
- Solid geology was not encountered.
- Perched groundwater recorded between 1.10m and 3.50m bgl.

Contamination Observations

During the works undertaken by BSL, observations for both visual and olfactory evidence of contamination were undertaken.

Ash and clinker were observed to be a constituent within made ground in the majority of exploratory holes.

A slight hydrocarbon odour was recorded within the granular made ground within TP108 during pre demolition works. A slight hydrocarbon odour was recorded within the granular made ground within TP108 during pre-demolition works and within TPSA301.

During the post demolition investigation works, which took place alongside the demolition of the site allowing a watching brief to be in place, no evidence of gross hydrocarbon contamination was noted.

A suspected asbestos cement pipe was encountered by the demolition contractor and was subsequently removed prior to BSL commencing the post-demolition investigation works. No other evidence of visible asbestos within soils or below the building footprint has been noted to date.

3.0 SUMMARY OF RISK ASSESSMENTS

3.1 General

The pre and post demolition phases of site investigation has confirmed the following:

- Localised asbestos, heavy metal and PAH contamination within the made ground.
- Impaction of shallow groundwater in superficial deposits (Secondary A Aquifer) by metals and minor exceedances recorded in PAHs and petroleum hydrocarbons.

3.2 Human Health Risks

Made ground or made ground topsoil underlies the whole site, with heavy metal contamination (arsenic and lead) encountered above residential without homegrown produce screening levels identified within four soil samples spread across the temporary accommodation site.

PAH contamination above residential without homegrown produce screening values is also present within three soil samples located in the temporary accommodation site. In addition, several additional exploratory hole locations on the wider site have been found to contain elevated concentrations of PAHs, which are likely attributable to ash and clinker within the granular made ground, which was encountered throughout the temporary accommodation site.

Asbestos has also been detected at trace (<0.001% w/w) within one sample of made ground, taken from the location of a former asbestos cement pipe which was removed during demolition.

Based on the above, mitigation measures will be required.

It was considered unlikely that the site is being affected by offsite contamination sources as the site is underlain by clay strata and therefore contamination is unlikely to migrate onto the site.

3.3 Permanent Ground Gases and Vapours

A summary of the ground gas monitoring carried out by BSL is presented below:

- The available data set for the wider site exceeds the minimum requirements suggested by the guidance for assessment.
- Whilst no monitoring wells have been installed within the immediate vicinity of the proposed temporary accommodation building, the potential source of concern (made ground) has been targeted and monitored in close proximity; the similarity in ground conditions in addition to the consistent site history across the eastern part of the site means the dataset for the onsite made ground can be used to assess the gas generation potential of the primary ground gas source.
- It is considered that the ground gas concentrations and flows have been monitored to enable a predication of “worst case” conditions; rapid and short pressure decreases are within the dataset.
- Although the methane concentrations place the site into CS2 based on the gas screening values, the levels are likely caused by the disturbance and oxygenation of the low organic content within the made ground; this is considered to be a highly limited low volume source.
- The organic made ground responsible for the methane concentrations is highly localised, has not been encountered elsewhere on site, and is therefore not representative of the ground conditions as a whole.
- Soft organic clays are geotechnically unsuitable and are likely to be removed anyway as part of the enabling works and earthworks programme likely to be required to create a development platform.
- In addition, the location in question is well away from the proposed temporary building site, further reducing the risk.

- The typical threshold concentration for carbon dioxide of 5% has been exceeded on a number of occasions within the spot monitoring data.
- Despite the carbon dioxide concentrations, the dataset as a whole is characterised by very low to negligible flow rates and low methane concentrations.
- However, based on the conceptual site model, likely generation sources and detailed assessment via ternary plots, the carbon dioxide concentrations are likely due to microbial respiration, where there is no requirement to increase the characteristic situation simply because the carbon dioxide concentration exceeds 5%.
- The gas flows from the rotary boreholes have been discounted due to the groundwater being above the response zone and creating a piston effect.
- CL:AIRE Research Bulletin RB17 states the minimum level of ventilation required to deal with condensation is capable of dealing with quite onerous ground gas regimes. In addition, the requirements of Part L of the building regulations relating to the air tightness of buildings also leads to the need for a well-sealed floor slab (NHBC Foundation, 2009).
- Therefore, the structures on the development will also have an inherent level of ground gas protection, thus adding an additional layer of mitigation to the already low assessed level of risk.
- Based on the evidence suggesting an absence of coal mining beneath the site, high ground water table, low permeability superficial deposits, and gas monitoring data, the overall risk from mine gases has been assessed as low.

The site has been assessed as Characteristic Situation 1 (CS1) in respect to permanent ground gases (carbon dioxide and methane) and no specific gas protection measures are required.

3.4 Risk to Controlled Waters

Chemical testing of groundwater to date shows exceedance of the Environmental Quality Standards (EQS) and Drinking Water Standards (DWS) for various metals as well as minor exceedances in short chain aliphatic hydrocarbons and PAHs. However, these were not considered to represent a significant risk of pollution of Controlled Waters due to the following reasons:

- There does not appear to be any clear linkage between contaminant concentrations within soils and leachates when compared to exceedances within groundwater.
- No visual or olfactory evidence of gross contamination has been encountered during the site investigations within the temporary accommodation site to date, including during post-demolition investigation targeting former plant rooms and railway infrastructure.
- There is no indication under present conditions of pollution of controlled waters and conditions following development of the site will not be any worse, indeed they may improve with increased hard cover and water retaining imported garden soils.
- The post-demolition ground investigation has confirmed the widespread presence of cohesive superficial deposits immediately underlying the shallow made ground, and a consistent perched groundwater body indicating very low permeability of the cohesive soils, as confirmed by infiltration testing.
- Based on the above, the cohesive soils are likely acting as an aquiclude inhibiting lateral and vertical contaminant migration.
- It would be technically challenging and probably disproportionately costly to remove the contaminants from the water to the pre-input stage.
- The above is especially pertinent given the generally minor and highly localised exceedances of PAHs.
- The nearest named watercourse is the Manchester, Bolton 190m away from the site at its closest approach, and >250m from the isolated highest exceedance of PAH in TP307, which provides considerable distance for attenuation and contaminant degradation.
- The site is underlain by low permeability clays which will.
- The site does not lie within 500m of an SPZ.
- There are no potable (sensitive) water abstractions within 2000m.

Based on the above, the site is not considered to pose an unacceptable risk to controlled waters. Therefore, no specific remedial requirements for controlled waters are necessary.

3.5 Summary

A summary of the findings of the previous investigations and assessments where a risk is present (i.e. an unacceptable source-pathway-receptor linkage) which requires mitigation is presented in the table below.

Source	Receptor
<- Poses an unacceptable risk to ->	
Elevated concentrations of heavy metals (arsenic and lead), PAHs, and trace asbestos present within the made ground	Human health / construction workers (Residential without homegrown produce screening criteria adopted)
Hydrocarbons above laboratory limits of detection in made ground and groundwater	Water Pipe/ Human Health

Based on the above, it was recommended that a Remedial Strategy was prepared that identifies the specific remediation requirements for the site.

4.0 REMEDIATION STRATEGY

4.1 Outline

Based on the site investigations undertaken at the site and the contaminant sources identified within the CSM, the following require appraisal to determine the most suitable remedial options:

- General Made Ground – Pervasive contamination in the form of arsenic, lead, PAHs and localised trace asbestos has been identified within the made ground, presenting a risk to human health (site end users).

4.2 Site Remediation Requirements

Following an options appraisal in the Remedial Strategy (PH/C5394/12924 Rev A), remedial measures were selected for each of the identified sources. Full details are available within the Remedial Strategy, with the key requirements summarised in the table below.

Source	Contaminants of Concern	Remediation Method	Further Details / Remedial Requirements
Made Ground	Arsenic, Lead, PAHs, asbestos	Installation of Clean Cover System	In proposed new soft landscaping areas, a 450mm cover system comprising “clean” validated topsoil/subsoil should be installed. A warning geo-membrane or hard dig layer should also be installed at the base of the clean cover system.

In addition to the specific remedial requirements listed in the tables above which are intended to mitigate the risks from known sources, it was recommended that a watching brief be maintained during the groundworks and construction for any evidence of contamination and BSL consulted for advice.

With reference to the remedial requirements, “clean” soils are defined by the site-specific Human Health Remediation Targets, presented in Appendix A, which are derived from C4SLs/S4ULs for a residential without plant uptake end use.

Materials Management Plan

In order to enable the re-use of materials on site as part of the enabling works under the current regulatory regime and waste regulations, a Materials Management Plan was produced and declared to CL:AIRE. The Materials Management Plan is presented in Appendix B.

Small quantities of topsoil were required to be imported for creation of limited new areas of soft landscaping. Due to the relatively low import volumes required which are significantly below 1000 tonnes, a U1 waste exemption was registered by the client for the purposes of importing soft landscaping soils onto the site. A copy of the U1 exemption is provided in Appendix C.

5.0 SITE REMEDIATION AND VALIDATION

5.1 General

The remediation process was undertaken between May and July 2024 and are ongoing at the time of writing this interim report.

A summary of the site works undertaken in accordance with the Remedial Strategy (report ref. PH/C5394/12924 Rev A) is detailed below.

5.2 Chemical Suitability of Imported and Site-Won Materials for re-use

As detailed in the Remedial Strategy, any soils or materials to be imported or re-used as part of the works should be tested for chemical compliance and suitability for the proposed end use. This section of the report summarises the evidence demonstrating suitability for use for each specific material type imported or re-used at the site.

It should be noted that, with respect to imported soils, at the time of writing the interim report only limited quantities of soils have been imported to date. The testing results presented for imported soils in this section are provided to demonstrate chemical suitability of the proposed imported materials and offer the Local Authority the opportunity to review these results and suitability assessment as part of their review of this verification report as part of the planning approval process.

Chemical suitability Imported / Re-used soils

The requirements for testing, as outlined within the approved Remedial Strategy, are detailed below:

Material and Source	Testing Suite	Sampling Frequency
Testing requirements for use as general fill (>600mm depth and beneath buildings / hard standing)		
First Generation (i.e. quarried stone)	No testing required. Certificate of material provenance is required.	
Site Generated / Imported 6F2	BSL Default Suite, Asbestos Screen	1 sample per 1000m ³ (minimum of 3 samples per source)
Testing requirements for use within cover systems		
Topsoil – Brownfield / recycled source	BSL Default Suite, TPH CWG Asbestos Screen	1 sample per 150m ³ (minimum of 6 samples per source)

Suitability of site-won crushed material as general fill

A stockpile of 6F2 was created from crushing of brick and concrete generated during the demolition of the former school and leisure centre buildings.

BSL carried out visual inspection and sampling of the site won fill in May 2024. The material consisted of greyish brown gravelly sand with high cobble content including concrete and brick, and the total volume was estimated at approximately 2000m³.

The material was sampled by BSL and 3 No. samples were tested for a broad suite of potential contaminants including heavy metals, PAHs and asbestos, in line with the requirements of the Remedial Strategy for material proposed for use as general fill. A further sample was tested by the demolition contractor, PP O'Connor, for an equivalent suite of contaminants. Chemical testing of the stockpiled 6F2 and initial assessment is presented in Appendix D (i2 analytical report 24-022856, samples SP01-SP03 & Chemtech Report ref. 133312). A summary assessment sheet is also enclosed, in which testing results were compared against the site-specific Human Health Remediation Targets as detailed in the Remedial Strategy and Appendix A, which reflect the LQM S4ULs for commercial end use (for site-won materials to be re-used as general fill beneath buildings and areas of hard standing).

The results confirm the results to be below the relevant screening criteria and are therefore considered acceptable for use as general fill beneath buildings and hard standing.

Chemical testing results and a summary assessment sheet are presented in Appendix D.

Imported MOT Type 1 as general fill

The groundworks contractor, Chartrange Ltd, has provided certification from their aggregate supplier, Tarmac, for MOT Type 1 aggregate which is required for use as general fill and sub-base.

The information provided comprises an aggregate properties report, which confirms that the material is a primary aggregate comprising carboniferous limestone derived from Tunstead Quarry. In accordance with the Remedial Strategy, no chemical testing is required for first generation quarried limestone aggregate which is considered chemically suitable for use.

The supplier certification is presented in Appendix E.

BSL attended the site on 30th July 2024, at which time a small stockpile of the MOT Type 1 was present on site. The material comprised a slightly sandy gravel of limestone and was consistent with a quarried source with no evidence of anthropogenic materials, therefore no further chemical testing is considered necessary to confirm suitability for use.

A site visit and photographic record is presented in Appendix F.

Delivery notes for imported materials will be presented in Appendix G.

Imported Topsoil for clean cover system

The groundworks contractor, Chartrange Ltd, has provided certification from their topsoil supplier, Tim O'Hare Associates, detailing the chemical composition and physical properties of the proposed topsoil source, which are presented in Appendix D.

The source of the topsoil is understood to be Eaton Hall, which is considered to be a brownfield/recycled source for the purposes of specifying the testing.

The topsoil is described as a brown, slightly moist, friable, very slightly calcareous LOAMY SAND with a weakly developed, very fine to fine granular structure. The material has been described as stone-free and contained a low proportion of organic fines and occasional woody fragments. No usual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

A total volume of 30m³ was required, meaning a minimum of 6 samples were required for assessment of chemical suitability.

Testing certificates were provided by the supplier for 14 No. samples tested for comprehensive suites of analysis including metals, inorganic compounds, PAHs, TPH-CWG, BTEX and MTBE, and asbestos screen and ID. BSL can confirm that the frequency and scope of chemical testing far exceeds the requirements of the Remedial Strategy.

The testing results were compared to the Human Health Remediation Targets as detailed in the Remedial Strategy and Appendix A, which reflect the LQM S4ULs for residential without plant uptake.

The results confirm the soils to be below the relevant screening criteria and are therefore considered acceptable for use in garden and soft landscaping areas.

Chemical testing results (lab refs. TOHA/23/1136/SS and EMT-23-16922) and a summary assessment sheet are presented in Appendix D.

BSL attended the site on 30th July 2024, at which time a small stockpile of the imported topsoil was present on site. BSL understand a further two loads (circa 40 tonnes) are still to be imported to complete the proposed landscaping. The material comprised a dark brown fine to coarse sand topsoil with fine rootlets with no evidence of contamination and no anthropogenic constituents such as brick, etc.

BSL are satisfied that the topsoil is as expected and matches the description within the laboratory testing report and associated certification provided by Tim O'Hare Associates.

A site visit and photographic record is presented in Appendix F.

Delivery notes for imported materials will be presented in Appendix G.

5.3 Installation of Clean Cover System / Break Layer

At the time of writing this interim report, no new areas of soft landscaping have been completed, therefore this report will be updated once this activity and associated depth validation has been completed.

During the site visit on 30th July 2024, some areas of proposed landscaping had been over-excavated to a depth well in excess of the minimum 450mm required, in preparation for the installation of soft landscaping, with the contractor aware of requirements including the minimum thickness and use of a barrier geotextile at the base of new areas of soft landscaping to prevent soils mixing.

5.4 MMP Verification Reporting

In accordance with the requirements of Section 3.4 of the CL:AIRE DoWCoP, this section of the report will outline how the materials management planning has been carried out over the course of the project. The report will compare the works carried out with the original Materials Management Plan (MMP) and any changes to the works.

At the time of writing, works involving the re-use of site-won materials was ongoing and the project is not yet complete, therefore this section will be updated accordingly upon completion of the works detailed within the Materials Management Plan.

6.0 CONCLUSIONS

6.1 General

The remedial works described within this report were carried out between May and July 2024. BSL has had a limited presence on site during this period, except for site visits carried out during the demolition works, sampling / testing of site-won materials and visual inspection of imported materials to determine suitability for re-use.

Importation of materials for the cover system is ongoing, and independent verification visits will be carried out by experienced BSL engineers during installation of the clean cover system, and this report updated with the findings upon completion of the remedial works.

6.2 Suitability of Imported / Site-Won Soils

Based on the visual inspections and chemical testing of site-won crushed materials, BSL can confirm that site-won 6F2 is chemically suitable for re-use as general fill.

Whilst materials are still being imported to site with final volumes to be confirmed, certification is presented within this report for proposed recycled topsoil and proposed first generation quarried aggregate which will be imported prior to completion of the project. Based on the testing completed and provided to BSL, in addition to visual inspection of initial deliveries of these materials on site, the material is considered suitable for importation and use on site.

6.3 Verification of Clean Cover System

At the time of writing this interim report, no new areas of soft landscaping have been completed to date, therefore this report will be updated once this activity and associated depth validation has been completed.

6.4 Materials Management Plan

At the time of writing, works involving the re-use of site-won materials was ongoing and the project are not yet complete, and this report will be updated accordingly upon completion to form the closure reporting with respect to the Materials Management Plan.

6.5 Watching Brief

A watching brief is being maintained by the groundworks contractor throughout the remediation and redevelopment of the site. To the best of BSL's knowledge, gross contamination has not been identified, and the ground conditions were understood to be broadly consistent with those encountered during the earlier ground investigations. Therefore, at the time of writing, no additional remedial measures were considered necessary at the site over and above those already stipulated within the approved Remedial Strategy.

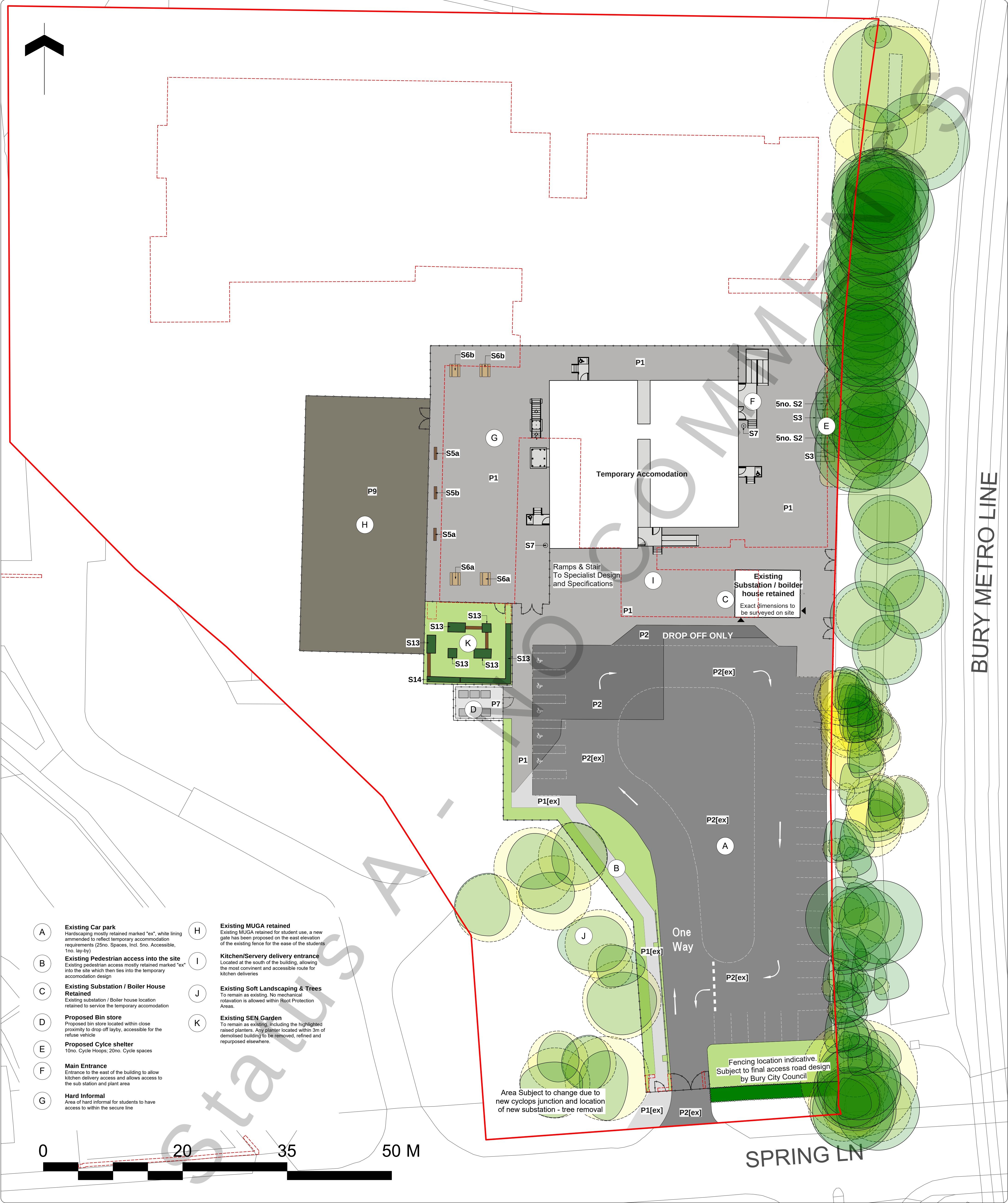
6.6 Long Term Monitoring and Other Requirements

BSL can confirm that there are no long-term monitoring requirements at the site.

Development of the wider site is understood to be scheduled to commence in late 2024 / early 2025, and further groundworks and remediation will be required as part of these works, however this will be

completed in accordance with a separate remedial strategy and verification of the works will be reported under a separate cover.

DRAWINGS



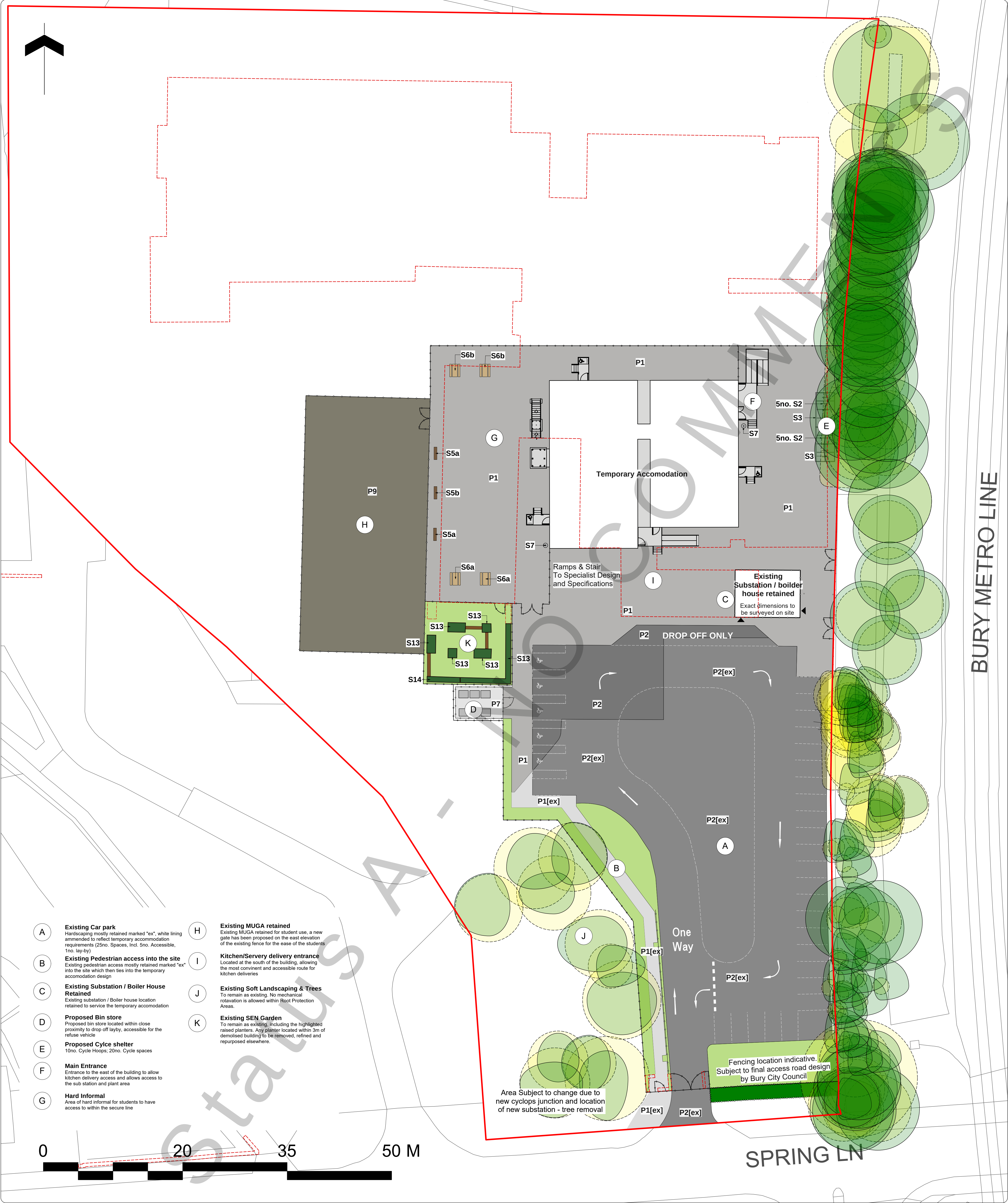
- A** Existing Car park
Handscaping mostly retained marked "ex", while lining amended to reflect temporary accommodation requirements (25no. Spaces, Ind. 5no. Accessible, 1no. lay-by)
- B** Existing Pedestrian access into the site
Existing pedestrian access mostly retained marked "ex" into the site which then ties into the temporary accommodation design
- C** Existing Substation / Boiler House Retained
Existing substation / Boiler house location retained to service the temporary accommodation
- D** Proposed Bin store
Proposed bin store located within close proximity to drop off layby, accessible for the refuse vehicle
- E** Proposed Cycle shelter
10no. Cycle Hoops; 20no. Cycle spaces
- F** Main Entrance
Entrance to the east of the building to allow kitchen delivery access and allows access to the sub station and plant area
- G** Hard Informal
Area of hard informal for students to have access to within the secure line
- H** Existing MUGA retained
Existing MUGA retained for student use, a new gate has been proposed on the east elevation of the existing fence for the ease of the students
- I** Kitchen/Servery delivery entrance
Located at the south of the building, allowing the most convenient and accessible route for kitchen deliveries
- J** Existing Soft Landscaping & Trees
To remain as existing. No mechanical retention is allowed within Root Protection Areas.
- K** Existing SEN Garden
To remain as existing. Including the highlighted raised planters. Any planter located within 3m of demolished building to be removed, refined and repurposed elsewhere.

Note			
1. Do not scale from this drawing			
2. To be read in conjunction with Project Risk Register REF: FS1013-ALA-EX-XX-T-L-0002			
3. To be read in conjunction with all other Landscape Architect's drawings			
4. To be read in conjunction with Outline Landscape Specification REF: FS1013-ALA-EX-XX-SP-L-0001			
1.	Falling on stairs and ramps.	Stairways and ramps to be designed by specialists.	16.11.2023
2.	Collision between pedestrians and vehicles in car park	Pedestrian barrier, kerbs, road markings to clearly denote parking.	16.11.2023
3.	Collision between pedestrians and cyclist accessing cycle storage facilities	School to manage speed on site Clear wayfinding to be developed	16.11.2023
5.	Collision pedestrians / windows	Windows unopenable.	16.11.2023
ID	RISK	MITIGATION	DATE MITIGATED
RESIDUAL PROJECT RISKS			

KEY	
Site	
	Planning Application Boundary
	Proposed Building
	Existing Building to be demolished
	Existing Tree Retained
	Root Protection Area (RPA)
Planting	
	Existing Grass Area to be Overseeded
	Proposed Hedge Planting
Hard Surfaces	
	P1 Proposed Pedestrian Macadam To Engineer's Specification
	P1 Existing Pedestrian Macadam Retained
	P2 Proposed Vehicular Macadam To Engineer's Specification
	P2 Existing Vehicular Macadam Retained
	P7 Proposed Concrete Surfacing To Engineer's Specification
	P5 Existing MUGA Permeable Surface Retained
Furniture	
	S2 Cycle Stands To be Reused in Permanent Scheme
	S3 Cycle Shelter To be Reused in Permanent Scheme
	S4 Door Protection Barrier To be Reused in Permanent Scheme
Fencing and Structures	
	S5 Seating Bench To be Reused in Permanent Scheme
	S6 Picnic Table To be Reused in Permanent Scheme
	S7 Litter Bin To be Reused in Permanent Scheme
	S8 Bollards To be Reused in Permanent Scheme
	S13 Existing Raised Planter and Seating To be retained and refined as part of Temporary Scheme
	S14 Proposed Raised Planter and Seating To be repurposed from demolished raised planters
	Existing Fencing
	Proposed Fencing & Gates
NOTE: Furniture and Fencing to be reused in permanent scheme	

D/E DESIGN DELIVERABLE REF :			
n/a			
DATE	REV	DESCRIPTION OF REVISION	APPROVED BY
22/01/2024	P08	Building location moved north to retain substation and boiler house. Existing SEN garden to be retained including raised planters.	MDS BS
24/11/2023	P05	Updated for CPs Temporary fencing to windows removed	BS -
16/11/2023	P04	Issued for draft CPs	ECJ BS
11/08/2023	P03	Issued for ITT	PH BS
REVISIONS			

STATUS :	
S2 - For Planning	
CLIENT : Morgan Sindall	
PROJECT TITLE : Star Radcliffe Academy, Bury	
DRAWING TITLE : Temps Whole Site Plan	
DRAWING SCALE : 1:250	DRAWN BY : PH
PAPER SIZE : A1	APPROVED BY : BS
DRAWING NUMBER : FS1013-ALA-EX-ZZ-D-L-0101	STATUS : S2
REVISION : P06	



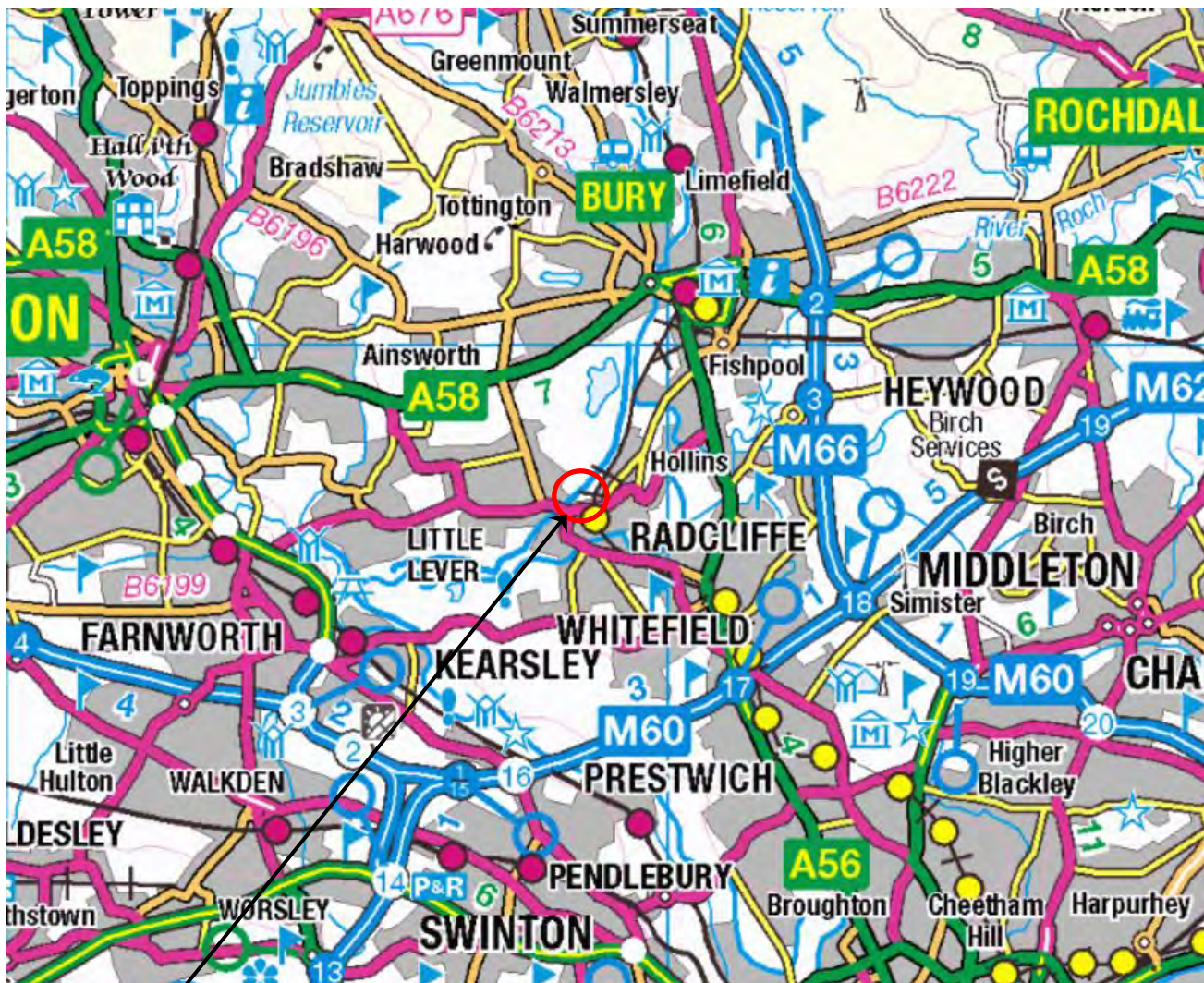
- A** Existing Car park
Handscaping mostly retained marked "ex", while lining amended to reflect temporary accommodation requirements (25no. Spaces, Ind. 5no. Accessible, 1no. lay-by)
- B** Existing Pedestrian access into the site
Existing pedestrian access mostly retained marked "ex" into the site which then ties into the temporary accommodation design
- C** Existing Substation / Boiler House Retained
Existing substation / Boiler house location retained to service the temporary accommodation
- D** Proposed Bin store
Proposed bin store located within close proximity to drop off layby, accessible for the refuse vehicle
- E** Proposed Cycle shelter
10no. Cycle Hoops; 20no. Cycle spaces
- F** Main Entrance
Entrance to the east of the building to allow kitchen delivery access and allows access to the sub station and plant area
- G** Hard Informal
Area of hard informal for students to have access to within the secure line
- H** Existing MUGA retained
Existing MUGA retained for student use, a new gate has been proposed on the east elevation of the existing fence for the ease of the students
- I** Kitchen/Servery delivery entrance
Located at the south of the building, allowing the most convenient and accessible route for kitchen deliveries
- J** Existing Soft Landscaping & Trees
To remain as existing. No mechanical retention is allowed within Root Protection Areas.
- K** Existing SEN Garden
To remain as existing. Including the highlighted raised planters. Any planter located within 3m of demolished building to be removed, refined and repurposed elsewhere.

Note			
1. Do not scale from this drawing			
2. To be read in conjunction with Project Risk Register REF: FS1013-ALA-EX-XX-T-L-0002			
3. To be read in conjunction with all other Landscape Architect's drawings			
4. To be read in conjunction with Outline Landscape Specification REF: FS1013-ALA-EX-XX-SP-L-0001			
1.	Falling on stairs and ramps.	Stairways and ramps to be designed by specialists.	16.11.2023
2.	Collision between pedestrians and vehicles in car park	Pedestrian barrier, kerbs, road markings to clearly denote parking.	16.11.2023
3.	Collision between pedestrians and cyclist accessing cycle storage facilities	School to manage speed on site Clear wayfinding to be developed	16.11.2023
5.	Collision pedestrians / windows	Windows unopenable.	16.11.2023
ID	RISK	MITIGATION	DATE MITIGATED
RESIDUAL PROJECT RISKS			

KEY	
Site	
	Planning Application Boundary
	Proposed Building
	Existing Building to be demolished
	Existing Tree Retained
	Root Protection Area (RPA)
Planting	
	Existing Grass Area to be Overseeded
	Proposed Hedge Planting
Hard Surfaces	
	P1 Proposed Pedestrian Macadam To Engineer's Specification
	P1 Existing Pedestrian Macadam Retained
	P2 Proposed Vehicular Macadam To Engineer's Specification
	P2 Existing Vehicular Macadam Retained
	P7 Proposed Concrete Surfacing To Engineer's Specification
	P5 Existing MUGA Permeable Surface Retained
Furniture	
	S2 Cycle Stands To be Reused in Permanent Scheme
	S3 Cycle Shelter To be Reused in Permanent Scheme
	S4 Door Protection Barrier To be Reused in Permanent Scheme
Fencing and Structures	
	S5 Seating Bench To be Reused in Permanent Scheme
	S6 Picnic Table To be Reused in Permanent Scheme
	S7 Litter Bin To be Reused in Permanent Scheme
	S8 Bollards To be Reused in Permanent Scheme
	S13 Existing Raised Planter and Seating To be retained and refined as part of Temporary Scheme
	S14 Proposed Raised Planter and Seating To be repurposed from demolished raised planters
	Existing Fencing
	Proposed Fencing & Gates
NOTE: Furniture and Fencing to be reused in permanent scheme	

D/E DESIGN DELIVERABLE REF :			
n/a			
DATE	REV	DESCRIPTION OF REVISION	APPROVED BY
22/01/2024	P08	Building location moved north to retain substation and boiler house. Existing SEN garden to be retained including raised planters.	MDS BS
24/11/2023	P05	Updated for CPs Temporary fencing to windows removed	BS -
16/11/2023	P04	Issued for draft CPs	ECJ BS
11/08/2023	P03	Issued for ITT	PH BS
REVISIONS			

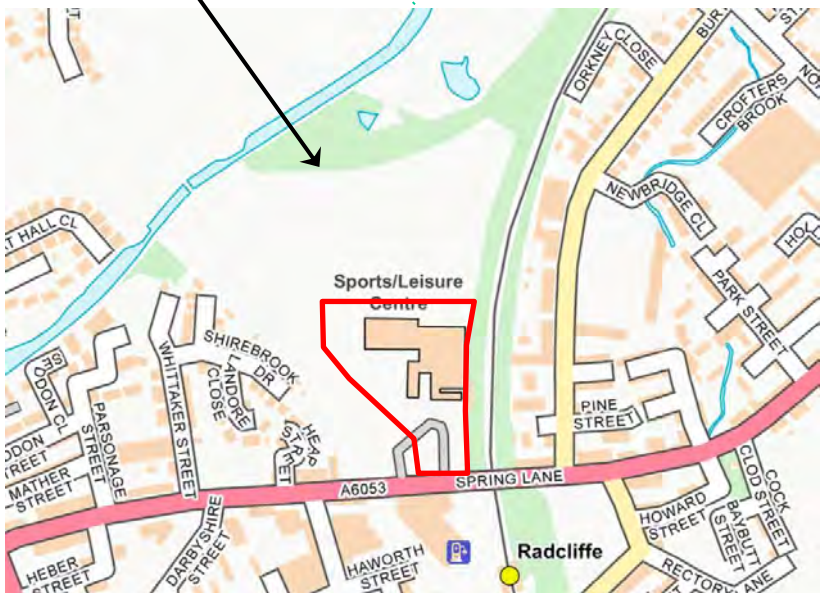
STATUS :	
S2 - For Planning	
CLIENT : Morgan Sindall	
PROJECT TITLE : Star Radcliffe Academy, Bury	
DRAWING TITLE : Temps Whole Site Plan	
DRAWING SCALE : 1:250	DRAWN BY : PH
PAPER SIZE : A1	APPROVED BY : BS
DRAWING NUMBER : FS1013-ALA-EX-ZZ-D-L-0101	STATUS : S2
REVISION : P06	



SITE LOCATION

NEAREST POSTCODE: M26 2SZ

SITE ENTRANCE WHAT3WORDS:
///CHAIR.VERGE.SINGLE



REV	DATE	DESCRIPTION	BY	CKD
BROWNFIELD SOLUTIONS LTD CREATING ENVIRONMENTAL POSITIVE OPPORTUNITIES				
CLIENT MORGAN SINDALL				
PROJECT TITLE STAR ACADEMY, RADCLIFFE, MANCHESTER				
DRAWING TITLE SITE LOCATION PLAN (TEMPORARY ACCOMMODATION)				
DRAWING No. C5394/01A	REVISION -	SCALE NTS	DATE 11/03/23	
DRAWN BY PH		CHECKED BY TM		