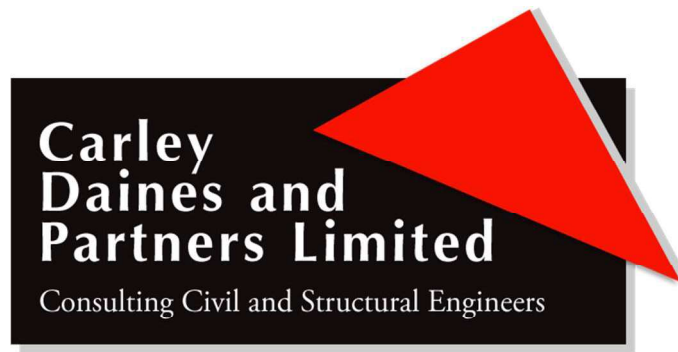




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Email: mail@carleydaines.co.uk Web: www.carleydaines.co.uk

SITE 1
THE STRAND PHASE 2
ROCHDALE
OL11 2JG

VALIDATION REPORT

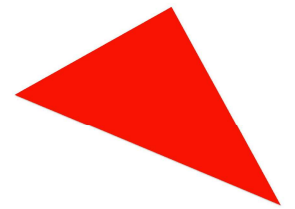
UNDERTAKEN FOR

LOVELL PARTNERSHIPS LTD

Ref: 18-B-12322/The Strand Site 1

September 2022

Principal: **D.J. Middleton BEng(Hons) CEng MStructE**
Company Number: **11006567**
Address **11 Bridgewater Road, Walkden, Worsley, Manchester M28 3JE**
VAT Number: **285 0439 91**

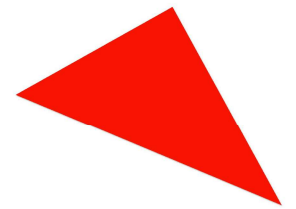


CONTENTS

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- 3 RELEVANT PARTIES**
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- 5 REMEDIATION STRATEGY**
- 6 VARIATIONS TO REMEDIATION STRATEGY**
- 7 SITE VALIDATION**
- 8 VALIDATION STATEMENT**

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- 1 - SITE PLAN**
- 2 - REMEDIATION STRATEGY**
- 3 - TOPSOIL TEST RESULTS**
- 4 - GAS MEMBRANE VALIDATION REPORT**



1.0 INTRODUCTION & OBJECTIVES

This report has been prepared in response to Planning Condition 3 of Rochdale Borough Council Planning Approval: Land at Kirkway, Aldwych and the Strand, Kirkholt, Rochdale, OL11 2JG – 21/01608/VRCON. This relates to the construction of 32 new affordable dwellings at NGR 389650,410800.

The purpose of this Validation Report is to provide a summary of investigation works undertaken on the site, to summarise the agreed Remediation Strategy, and to present relevant documentation to demonstrate that the works have been completed in accordance with the agreed methodology.

2.0 SITE DEVELOPMENT

It is understood that the Planning Approval 21/01608/VRCON gave permission for a proposed residential development of 32 affordable properties with highway works, car parking, private gardens and drainage and was approved on 15th July 2022.

3.0 RELEVANT PARTIES

The relevant parties to the development are as follows:

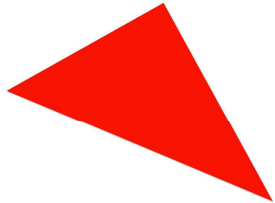
- Planning Authority – Rochdale Borough Council
- Client – Rochdale boroughwide Housing
- Contractor – Lovell Partnership
- Architect – Triangle Architects
- Engineering Consultant – Carley Daines & Partners
- Site Investigation Consultant – Carley Daines & Partners/Terraconsult
- Specialist Sub Contractors – Various
- Building Regulations Authority – Rochdale Borough Council
- Highway Authority – Rochdale Borough Council
- Drainage Authority – United Utilities

4.0 SITE APPRAISAL & KEY REFERENCE DOCUMENTS

To fulfil the requirements of the Planning Condition, the following procedure has been adopted and the following documents reviewed:

- Carley Daines Phase 1 PRA dated May 2014
- Carley Daines Phase 2 report dated April 2016
- Terraconsult Phase 2 report 4375/01 dated May 2019
- Terraconsult Supplementary Phase 2 report 4794/R001 dated December 2019
- Terraconsult Phase 2 report 4794/02 dated March 2020

Principal: **D.J. Middleton BEng(Hons) CEng MStructE**
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VAT Number: **285 0439 91**



These are detailed assessments of on-site contamination and its implications. Testing was carried out for a variety of contaminants, specifically metals / heavy metals, polyaromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH).

The report indicated that there are very slightly elevated concentrations of contaminants present on the site, but these are shown to be well under recognised thresholds and therefore below the depth of human influence. This level of contamination can therefore be considered as not a potential risk to human health.

Ground gas monitoring confirmed that mitigation and protection measures are required, with a classification of CS2/Amber 1. This related specifically to plots 19-32.

Also, a ventilated sub-floor void below a beam and block concrete floor sealed with a screed would be prudent.

5.0 REMEDIATION STRATEGY

The Remediation Strategy is included in full in Appendix 2. This pulls together all previous reports and recommends:

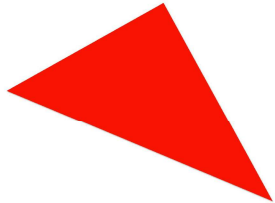
- The construction of a capping layer 600mm thick to soft landscaped areas, comprising the following.
 - An upper layer of 150mm clean inert topsoil
 - A lower layer of 450mm clean inert subsoil.

This was proposed, however, **only on the basis that site works uncovered conditions previously unidentified in the various Phase 2 site investigations**. This, as noted in section 6.0 below, was not the case so the capping layers in soft landscaping areas were deemed unnecessary. Clean topsoil, however, has been imported.

6.0 VARIATIONS TO THE REMEDIATION STRATEGY

There have been no significant variations to the Remediation Strategy during the course of the works.

As a general comment, site conditions were found to be as had been anticipated and were generally in line with the comments above in the various site investigation reports, and the Remediation Strategy.



7.0 SITE VALIDATION

7.1 Topsoil Placement/Capping Layer

As noted earlier in the report no capping layer is required.

Topsoil test sample results have been taken for all imported material, which can be confirmed as clean, chemically uncontaminated and fit for purpose. A total volume of 325m³ has been imported and soil tests have been undertaken. Testing has been carried out for metals, PAH, TPH, asbestos, toluene, benzene, ethylbenzene and xylenes. This exceeds the sampling rate recommended in the Remediation Strategy. The soil test results are presented in Appendix 3.

7.2 Gas Membrane installation

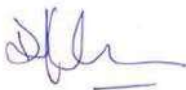
A validation report including photographs and details of the installation of the gas membrane is presented in Appendix 4.

8.0 VALIDATION STATEMENT

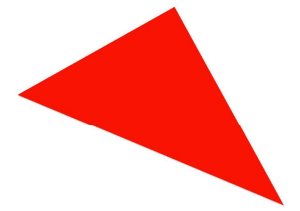
Based upon our site visits and documentary evidence from Lovell Partnership Ltd, together with on-site testing and appraisal, it is our opinion that the works undertaken have been carried out satisfactorily and the remediation targets have been achieved.

Given this we are of the opinion that health risks from the ground should be considered to be minimal in the future.

SIGNED



D.J.MIDDLETON



APPENDIX 1

SITE PLAN

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CHECK ALL DIMENSIONS ON SITE.
DRAWING TO BE READ IN CONJUNCTION WITH THE HEALTH & SAFETY PLAN AND ALL RELEVANT RISK ASSESSMENTS AND THE FOLLOWING DRAWINGS.

Schedule of Accommodation
Phase 2 Site

Type	Description	Total
A4	2 Bed	6
A4.1	2 Bed	1
A4.2	2 Bed	1
A4.3	2 Bed	1
A4.4	2 Bed	1
B2	3 Bed	1
B2.1	3 Bed	4
B2.2	3 Bed	1
B2.3	3 Bed	1
B2.4	3 Bed	1
B2.5	3 Bed	1
B2.6	3 Bed	2
B2.7	3 Bed	2
B6	4 Bed	1
B6.1	4 Bed	1
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B8	3 Bed	1
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Boundary Treatments

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- Car Parking Space
- Grass
- Planting/ Grass
- New Tree
- Existing Tree Retained
- Existing Tree Removed
- Bin Location
- Buff Paving (450x450 Paving)
- Black Tarmac
- Shared Surface

Rev. Date By Remarks

Client: Rochdale Boroughwide Housing

Project Name: The Strand Phase 2, Rochdale

Drawing Name: Proposed Phase 2

Drawing Purpose: Planning

Project Number: 18-003 Drawing Number: 03 Revision: 01

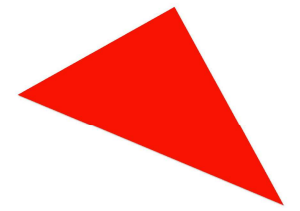
Project Origin Vol/Sys Level Type Role Number

Status: Scale @ A2: 1:500 Drawn: AD Checked: AJD Date: Jan 2020

TRIANGLE ARCHITECTS

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APPENDIX 2

REMEDIATION STRATEGY

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Carley Daines and Partners Limited

Consulting Civil and Structural Engineers

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Tel: 0161 799 2720 Fax: 0161 790 3474
Email: mail@carleydaines.co.uk Web: www.carleydaines.co.uk

PHASE 3 REMEDIATION STATEMENT

SITE 1

THE STRAND PHASE 2

ROCHDALE

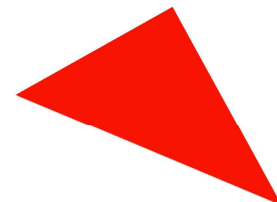
OL11 2JG



19-B-12322

OCTOBER 2020

Principal: **D.J. Middleton BEng(Hons) CEng MStructE**
Company Number: **11006567**
Address **11 Bridgewater Road, Walkden, Worsley, Manchester M28 3JE**
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Report Title:	Site 1, The Strand Phase 2
Report Reference:	19-B-12322
Client:	Rochdale Borough Housing
Issue Date:	12th October 2020
Authorised By:	D.J. Middleton

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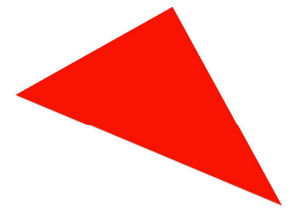
The findings and opinions provided in this document are given in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined within this document. The findings and opinions are relevant to the dates when the assessment was undertaken but should not be necessarily relied upon to represent conditions at a substantially later date.

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Address **11 Bridgewater Road, Walkden, Worsley, Manchester M28 3JE**
VAT Number: **285 0439 91**



1.0 INTRODUCTION

This report has been prepared in response to a request from Messrs Rochdale Borough Housing to facilitate the remediation management during site works. This is in support of Planning submission Application reference 20/00293/FUL 'Land at Kirkway. Aldwych and the Strand Kirkholt, Rochdale OL11 2JG'.

The site is located off Daventry Road in Rochdale, at approximate National Grid Reference NGR 389650,410800 and at post code OL11 2JG.

2.0 PROPOSED DEVELOPMENT

The proposed development comprises of 32 new houses with associated drives and gardens and an adopted access road.

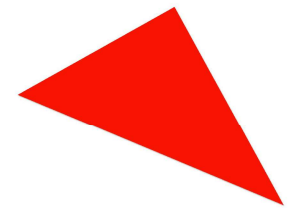
3.0 PHASE 1 / 2 SITE INVESTIGATIONS

Separate Phase 1 & Phase 2 investigations have been undertaken by Messrs Carley Daines and Partners and Terraconsult as below. This report is strictly in accordance with the findings of these reports. Appendix 2 shows which reports relate to which areas.

- Carley Daines Phase 1 PRA dated May 2014
- Carley Daines Phase 2 report dated April 2016
- Terraconsult Phase 2 report 4375/01 dated May 2019
- Terraconsult Supplementary Phase 2 report 4794/R001 dated December 2019
- Terraconsult Phase 2 report 4794/02 dated March 2020

The subject site is irregular in shape and covers an area of approximately 8000m² (0.80 hectares). The site is at a mean elevation of 170m AOD.

The site currently previously comprised significant development, comprising mixed usage of a Community Centre, residential units, shops, highways, and hard & soft landscaping. After demolition the site is now clear.



The surrounding area is generally similar in nature, forming a large residential housing estate constructed in the 1950s.

The risk of mining is low.

The Phase 2 Ground Investigations from 2016 comprised of 10 window samples to a maximum depth of 6.0m, as well as 2 trial pits. The 2019 Phase 2 investigation comprised of a further 14 window samples to a depth of 5.5m.

4.0 REVIEW OF CONTAMINATION RESULTS

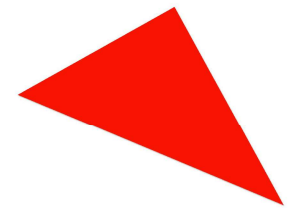
Testing was carried out on soil samples selected from trail pits and window sample holes. Tests were undertaken for the following contaminants:

- Heavy metals/metals
- PAH (USEPA16)
- Asbestos
- TPH

The various report indicated that there are slightly elevated concentrations of contaminants present on the site, but generally these are shown to be below the depth of human influence. This is aside from zone 2 (See Appendix 2) where the report indicated that there are slightly elevated concentrations of benzo(a)pyrene. However, this elevated level (2.8mg/kg) was predicated on a threshold at the time (2016) of 0.83mg/kg – legislation has now changed and the threshold is 5.0mg/kg. This level of contamination can therefore be considered as not a potential risk to human health.

5.0 REMEDIATION STRATEGY

Following a review of the Phase 2 Site Investigations, and comparison with published sources, it is our opinion that the identified levels of soil contamination are not sufficient to pose a threat to future health.



Generally, it is also widely accepted that there is a significant factor of safety built into maximum soil contamination levels, and therefore the recorded levels are typically well below safe levels, rather than being close to the actual threshold.

However, it is important that a “watching brief” is maintained during the course of the groundworks. This is to identify and investigate any unexpected/unforeseen contamination that might arise or be identified.

The watching brief should be undertaken by a suitably qualified equivalent professional firm. In the event that contamination is identified or suspected, notification should be by the contractor’s on-site personnel as soon as possible. If elevated levels of contamination are encountered, then we would recommend that in soft landscaping in such areas are constructed as follows:-

- An upper layer of 150mm of clean inert topsoil
- A lower layer of 450mm of clean inert subsoil

Also reference to section 7.0 (below) should be made but in this scenario we would concur with the findings of the Phase 2 Investigations that contaminated material may be safely left on site, providing the end user is protected by a suitable clean capping layer in the areas stipulated.

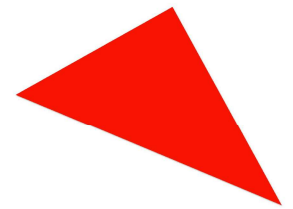
6.0 GROUND GASES

Ground gas monitoring confirmed that mitigation and protection measures are required to Zone 3 only (see attached Appendix 2), with a classification of CS2/Amber 1. In all other areas the site is given a classification of CS-1/Green.

Also, a ventilated sub-floor void below a beam and block concrete floor sealed with a screed would be prudent.

7.0 VALIDATION (REQUIRED ONLY IF SITE WORKS UNCOVER GROUND CONDITIONS PREVIOUSLY UNIDENTIFIED IN PHASE 2 SITE INVESTIGATIONS)

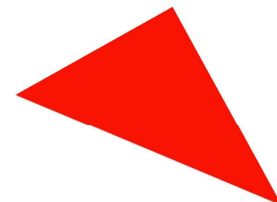
Validation may be required on completion. In order to ensure that all elements of this Remediation Statement are properly implemented, a final Validation Report will be prepared by Carley Daines



and Partners Limited or an alternative appropriately qualified consultant, confirming that the remedial works have been completed.

The validation report will confirm the following:

- Confirmation that the proposed clean cover materials are suitable for the proposed end use. This will be undertaken by recovery of representative soil samples after importation for testing.
- A testing regime on imported material will be carried out, including testing one sample per 50m³ of imported material (from a brownfield source) and one sample per 200m³ of imported material (from a greenfield source). A minimum of 3 such samples will be carried out for materials from differing types and from different sources.
- Depths of imported material will be verified by photographs on a plot by plot basis.
- Any material removed from site must have appropriate waste transfer documentation to confirm appropriate removal and disposal.



A summary of actions is listed in the table hereunder:

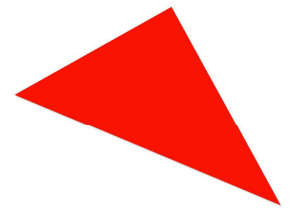
Summary of Action	
Action	Person Responsible
Site Management procedures to protect site neighbours, environment and amenity during works, including a) Health & Safety plans and procedures b) Dust, noise & odour suppression/controls, including monitoring protocols c) Control of surface water runoff d) Site Waste Management Plan (SWMP)	Main Contractor
Assessment of ground conditions if unanticipated or obviously very high levels of contamination are uncovered, plus appropriate additional testing of such material.	Main Contractor CD&P Ltd. NHBC Building Control
Method Statement indicating the procedure for removal of potentially contaminated material, and placement of clean cover throughout all areas of soft landscaping within the development	Main Contractor
Provide suitable protection to site utilities in accordance with the requirements of the service provider	Main Contractor/Engineering consultant
Witness/verify the placement of correct thickness of clean cover materials in accordance with the methodology	CD&P Ltd.
Laboratory testing to confirm the suitability of the clean cover materials post placement	CD&P Ltd
Completion of post-site works Final Validation Report	CD&P Ltd

SIGNED

DAVID MIDDLETON

CARLEY DAINES AND PARTNERS LIMITED

Principal: **D.J. Middleton BEng(Hons) CEng MStructE**
Company Number: **11006567**
Address **11 Bridgewater Road, Walkden, Worsley, Manchester M28 3JE**
VAT Number: **285 0439 91**



APPENDIX 1

SITE LAYOUT



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- Buff Paving (450x450 Paving)
- Black Tarmac
- Shared Surface

Rev. Date By Remarks

Client: Rochdale Boroughwide Housing

Project Name: The Strand Phase 2, Rochdale

Drawing Name: Proposed Phase 2

Drawing Purpose: Planning

Project Number: 18-01 Drawing Number: 03 Revision: 01

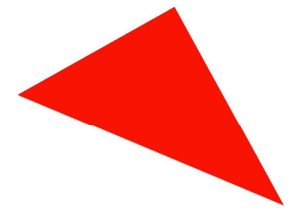
Project Origin Vol/Sys Level Type Role Number

Status: Scale @ A2: 1:500 Drawn: AD Checked: AJD Date: Jan 2020

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APPENDIX 2

ZONING PLAN



Terraconsult Phase 2 report 4375/01 dated May 2019

Carley Daines Phase 2 report dated April 2016

Terraconsult Phase 2 report 4794/02 dated March 2020