



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Beechfield  
Ninlands Road  
Hathersage  
Derbyshire  
S32 1BJ

Tel: 01433 659071

[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)

## **PHASE 1 SITE INVESTIGATION**

**LAND AT  
CLUB STREET  
OPENSHAW  
MANCHESTER  
M11 1HR**



### **REPORT PREPARED FOR**

**KMM Homes Limited  
31 Sackville Street  
Manchester  
M1 3LZ**

**DOCUMENT REFERENCE: 42163R3  
ISSUED REV A  
NOVEMBER 2023**

## TABLE OF CONTENTS

|                                                                        | <b>PAGE</b> |
|------------------------------------------------------------------------|-------------|
| <b>1.0 INTRODUCTION</b>                                                | <b>2</b>    |
| <b>2.0 PHASE 1 INVESTIGATION FINDINGS</b>                              | <b>3</b>    |
| 2.1 Existing Site Layout                                               | 3           |
| 2.2 Surrounding Land Use                                               | 5           |
| 2.3 Proposed Site Layout                                               | 5           |
| 2.4 Geological, Hydrogeological & Hydrological Setting                 | 5           |
| 2.5 Ecologically Sensitive Areas                                       | 6           |
| 2.6 Site History & Potentially Contaminative Landuse                   | 6           |
| 2.7 Contemporary Potentially Contaminative On-Site & Off-site Landuses | 7           |
| 2.8 Registered Waste Operations, Infilled Land and Pollution Incidents | 7           |
| <b>3.0 PRELIMINARY RISK ASSESSMENT</b>                                 | <b>8</b>    |
| 3.1 Contaminants & Hazards of Concern                                  | 8           |
| 3.2 Source Pathway, Receptor Assessment                                | 9           |
| <b>4.0 CONCLUSIONS AND RECOMMENDATIONS</b>                             | <b>11</b>   |
| <b>5.0 REFERENCES</b>                                                  | <b>13</b>   |

## FIGURES

Figure 1: Site Location Plan

Figure 2: Site Layout Plan

Figure 3: Site Layout Plan showing Areas 1 - 3

Figure 4: Site Features

Figure 5: Aerial Photograph showing April 2022 Site Layout

Studio KMA Drawing No. OCS-KMA-XX-XX-DR-A-7002 RevP2: Proposed Site Layout

## APPENDICES

Appendix A: Limitations & Exceptions of Assessment

Appendix B: Site Photographs

Appendix C: Environmental Information Search

Appendix D: Historical Ordnance Survey Maps

Appendix E: Risk Classification Matrix

|                                                                                                                             |                                          |                          |                     |                            |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------|---------------------|----------------------------|
|  <b>PEAK ENVIRONMENTAL<br/>SOLUTIONS</b> |                                          | <b>Document Schedule</b> |                     |                            |
| <b>Client</b>                                                                                                               | KMM Homes Limited                        |                          | <b>Project No</b>   | 42163R3                    |
| <b>Project</b>                                                                                                              | Land at Club Street, Manchester, M11 1HR |                          | <b>Document</b>     | Phase 1 Site Investigation |
| <b>Issue</b>                                                                                                                | Issue Date                               | <b>Prepared</b>          | <b>Checked</b>      | <b>Approved</b>            |
| <b>Rev A</b>                                                                                                                | November 2023                            | Clare Dainton            | Christopher Dainton | Clare Dainton              |
|                                                                                                                             |                                          | Notes: <b>Issued</b>     |                     |                            |

## 1.0 INTRODUCTION

This report provides the results of a Phase 1 site investigation completed to assist in preparation for residential development of an area of Land at Club Street in Openshaw, Manchester, M11 1HR ('the site').

Figure 1 (included in the Figures Section) shows the site location (centred on National Grid Reference 389889 397445) and Figures 2 and 3 show the current site layout and boundary location.

This report has been prepared to provide information to help assess potential geo-environmental and land contamination issues that may affect the proposed development.

The report provides details of the environmental site setting based on a site walkover and information gathered from publicly available environmental/geological information from public bodies (including the Environment Agency (EA) (via DATA.GOV.UK) and British Geological Survey (BGS)) via a Groundsure Insight report reproduced in Appendix C. A review of current and historical Ordnance Survey mapping data has also been completed. The assessment includes a site conceptual model, a land contamination preliminary risk assessment, risk evaluation and conclusions and recommendations to assist in furthering development at the site.

The site walkover was undertaken in three parts as the proposed area for development expanded. Walkovers were undertaken on the on the 19<sup>th</sup> July 2021 and the 9<sup>th</sup> February 2022 and the 18<sup>th</sup> October 2023, photographs of the site are included in Appendix B.

### ***Limitations of Assessment***

The report has been prepared under umbrella frameworks laid out in non-statutory UK guidance provided here: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm> and in R&D66:2008 ('Guidance for the safe development of housing on land affected by contamination'), as well as in general accordance with the current National Planning Policy Framework. Information provided to or obtained by Peak Environmental Solutions has been relied upon in good faith. Our investigations exclude (i) surveys to identify the presence injurious and invasive weeds; (ii) surveys to identify the presence of asbestos containing materials in buildings and; (iii) surveys to identify geotechnical risk/issues, including those associated to potential mining legacy concerns. This report is subject to our standard terms of business and the attached limitations and exceptions.

## 2.0 PHASE 1 INVESTIGATION FINDINGS

### 2.1 Existing Site Layout

The ~0.83 hectare site is located in the Openshaw area of Manchester ~6km to the east of the city centre. The site is divided into three parts, as follows:

- **Area 1:** ~0.48 hectares in the centre of the site, is accessed via Club Street and is occupied by the Openshaw AEU Club and Institute.
- **Area 2:** ~0.18 hectares in the north and west of the site is accessed separately via Burman Street (through a yard area used by Termstall, a fencing contractor), the area is disused.
- **Area 3:** ~0.17 hectares of disused and overgrown land in the east of the site accessed via Club Street and Gransmoor Avenue.

The three areas are shown in Figure 3, site features are shown in Figure 4.

The site walkover for Area 1 was completed in July 2021, photographs are included in Appendix B. The following features were present:

- Club Street. An asphalt surfaced dead-end road that extends ~50m north off Ashton Old Road and leads to the Openshaw AEU Club main entrance located at the head of Club Street and to the east.
- An asphalt surfaced car parking area located to the east of Club Street in the centre/south of the site.
- A brick built social club building located in the east of the site. The main part of the building is a single storey structure with a pitched roof that has been extended at its northern, southern and western elevations.
- An overgrown and disused strip of land that is partially hard surfaced with paving slabs located to the east of the main building.
- A small, asphalt surfaced area is located to the north of the main building and gives access to a spectator stand and toilet facilities attached to the main building.
- To the west of the main building is a grass surfaced crown bowling green surrounded on all sides by a shallow gutter and an asphalt surfaced walkway. Hard surfaced viewing areas are located alongside the walkway in the south and west of the site, extending to the site boundaries. Small spectator stands are present around the green to the south, west and north.
- A detached bungalow, surrounded by an overgrown garden occupies the northern part of the site, with the garden extending to the north-western tip of the bowling club area.

Site boundaries are formed by high brick walls to the south, west and north and a palisade fencing to the east.

The main building includes a bar area and a cellar beneath most of the original structure. The cellar was damp, but without standing water at the time of the walkover. The building has gas central heating and is connected to mains water and drainage.

No areas of temporary or permanent waste storage or disposal were identified during the walkover. No bulk liquid (including oil) storage was on-going. Other than the main building basement, no underground structures (excluding underground services) were identified. No visual or olfactory evidence to suggest the presence of ground contamination was observed.

Area 2 is accessed via gates in the northern boundary via the adjacent fencing company yard. The area is surrounded by a fencing to the north, west and south and a brick wall to the east. The site walkover was completed in February 2022, photographs are included in Appendix B. The following features were present:

- A northern undeveloped and un-surfaced area with scrub vegetation where trees have been recently removed. This part of the site has been subject to fly tipping of a wide variety of household waste including car parts and domestic waste, predominantly along the western boundary.
- A southern area, also un-developed and un-surfaced but where small scrubby trees have yet to be cleared. Minor fly tipping has occurred in this part of the site.

No built development is currently present within Area 2. Possible remnant structures are present in the north in particular, where bricks and other construction materials are present at the surface. No underground structures or bulk liquid storage was observed. No visual or olfactory evidence to suggest the presence of ground contamination was observed.

The site walkover for Area 3 was completed in October 2023, photographs are included in Appendix B. This part of the site is divided by a variety of fence lines as follows:

- Two small fenced compounds are located to the east of Club Street. Both areas are disused and heavily overgrown, but are understood to have been formerly accessed via Club Street.
- The site of a recently demolished end of terrace house is located to the west of Gransmoor Avenue in the south of the site.
- A larger, also heavily overgrown and separately fenced area occupies the remainder of Area 3. Remnant structures are common across the north and east, including a broken-down brick wall. Several mounds of unknown materials are also present at the ground surface. Potential asbestos containing materials (ACMs) in the form of corrugated board were observed in some locations.

No underground structures were noted in Area 3, but it is possible that the recently demolished house had a basement that may have been infilled. No bulk liquid storage was observed. Other than potential ACMs, as noted above, no visual or olfactory evidence to suggest the presence of ground contamination was observed.

A potential invasive weed species (Japanese knotweed) was observed in several locations around the site. Its presence should be confirmed by an invasive weed specialist.

The whole of the site (Areas 1 - 3) is flat at an elevation of ~91m above Ordnance Datum (AOD). The area around the site is also flat or very gently sloping to the south.

## 2.2 Surrounding Land Use

The site is located in an area of mixed land use in the Manchester suburb of Openshaw. Land uses surrounding the site are as follows:

- **North:** School playing fields and a fencing contractor's yard are present immediately to the north, with allotment gardens, school buildings and residential houses beyond.
- **East:** Playing fields are also present to the north-east. Immediately east of Area 3 is a church development and beyond ~85m east is a fuel filling station accessed via Ashton Old Road.
- **South:** Houses are present immediately to the south and to the north of Ashton Old Road. South of Club Street and Ashton Old Road, further housing extends ~200m to rail lines beyond. A park is present to the south-west. East of Club Street is a pub and houses on Gransmoor Avenue, with further housing beyond.
- **West:** Houses and a church are present to the west, with houses extending at least 500m.

No industrial land uses are currently present in close proximity.

## 2.3 Proposed Site Layout

The proposed development layout is shown in Studio KMA Drawing No. OCS-KMA-XX-XX-DR-A-7002 RevP2.

The development will comprise a series of residential properties accessed via a central roadway off Club Street. Each of the properties will have hard surfaced parking areas and private or communal soft landscaped garden areas.

## 2.4 Geological, Hydrogeological & Hydrological Setting

The 1:50,000 scale BGS geology map for the area records the presence of superficial deposits beneath the site consisting of Quaternary Devensian Till. Bedrock geology consists of the Permian Collyhurst Sandstone Formation. Carboniferous Coal Measures are present at depth beneath the site.

The BGS hold a database of borehole records that can sometimes provide additional ground condition information. The nearest log is for a borehole drilled in 1988 located ~40m to the south-west of the site and extended to 5m below ground level. The log records a thin layer of made ground over Boulder Clay (Till) extending to the base of the borehole. A thin gravel band was encountered at ~3m bgl. The shallow deposits are described as follows:

*'Firm brown/grey sandy CLAY with fine to medium gravel. BOULDER CLAY'*

These deposits are likely to have a relatively low permeability and may preclude the use of soakaway drainage at the site.

The site is located in an area where the Coal Authority consider that there may be risks associated with past or present coal mining (i.e. it is located within the Coal Authority Reporting Area). The site is not located within the Development High Risk Area, suggesting that the Coal Authority consider it

unlikely that past underground mining will affect development at the site. No mine entries or surface coal outcrops are recorded within 1 km on the on-line planning Coal Authority mapping (viewed November 2023).

Radon Maps provided by Public Health England indicate that the site is located within an area where the maximum radon potential is less than 1%. Radon protection measures should not be required for the proposed properties. This will need to be agreed directly with building control in due course.

The superficial deposits beneath the site are classified as a Secondary Undifferentiated Aquifer suggesting that they are unlikely to represent a significant groundwater resource. The bedrock deposits are classified as a Principal Aquifer and may represent a source for locally and regionally important groundwater supplies. There are no groundwater abstractions recorded on the EA database within 1km of the site however and the site is not located within a Source Protection Zone (SPZ) set by the EA for the protection of important groundwater abstractions (Appendix C).

The nearest surface water feature is the Ashton Canal located ~350m to the north. Surface water runoff is likely to be in a southerly direction however in line with local topography. The nearest surface water feature to the south is the Gorton Reservoir system located more than 600m from the site.

The site is in an area that the EA have categorised as having a low probability of flooding (less than 1 in 1,000 annual probability of river or sea flooding).

## **2.5 Ecologically Sensitive Areas**

The Government Information website [www.magic.gov.uk](http://www.magic.gov.uk) lists conservation designations for the area. There are no designated areas including Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty, Environmentally Sensitive Areas, National Nature Reserves, Local Nature Reserves or Specially Protected Areas within 1km of the site. No Scheduled Ancient Monuments are located near the site.

## **2.6 Site History & Potentially Contaminative Landuse**

Historic Ordnance Survey (OS) maps for the site (1848 to present day) are attached and provide supporting information about previous on and off-site land use, including potentially contaminative land uses on or around the site. Aerial photography for the period between 2000 and 2023 has also been reviewed via Google Earth Pro (selected aerial photographs are included in Appendix C).

At the time of the first OS in 1848, the site was undeveloped and occupied by fields. Ashton Old Road was present to the south, with some houses nearby. Rail lines were also already present in their current location to the south and school buildings in approximately their current locations to the north and north-east.

By 1892, the club building (un-extended), an outline possibly representing the bowling green and Club Street are recorded in their current locations. Houses have been built to the south and tram lines are shown within Ashton Old Road. A pond is recorded ~80m to the north.

Mapping from 1906 no longer records the pond. Further housing development in the area has occurred by this time. The east of the site (Area 3) has also been divided into a number of plots with small buildings in the south of the area (additional small buildings are added on subsequent maps).

The 1906 map records the Fairfield Laundry immediately to the north of the site for the first time. The laundry is expanded gradually with tanks shown adjacent to the main building for the first time in the 1950s.

Within the site, small buildings assumed to be domestic scale garages are established along the western boundary (Area 2) and in the area immediately to the east of Club Street in the south of the site during the 1930s. A second row of garages are added in the east of Area 2 sometime before 1974.

By 1984, the club building has been extended to approximately its current size and the bungalow in the north of the site has been added. The main laundry buildings have been removed by 1991, leaving some small buildings near the site to the north-west.

The aerial photograph record from 2000 shows the western part of the site un-developed, with the two rows of garages having been removed. The former laundry site is also in approximately its current layout as an open yard. The buildings present in the eastern part of the site have also been removed and the area is heavily overgrown. Additional school buildings are added to the north-east in ~2003, and areas of houses beyond Burman Street to the west are removed and re-built between 2009 and 2016. No other significant changes are recorded on the subsequent aerial photographs.

## **2.7 Contemporary Potentially Contaminative On-Site & Off-site Landuses**

No industrial plants or facilities permitted to operate by the EA have been identified within the site boundaries. No current permitted activities have been identified within 500m of the site.

Contemporary industrial land uses have been identified within 500m of the site are as described above (fuel filling station to the south-east and fencing company immediately to the north).

## **2.8 Registered Waste Operations, Infilled Land and Pollution Incidents**

No pollution incidents that are likely to affect the development have been identified on the EA database at the site or in the near vicinity (Appendix C).

No currently operational landfill sites are recorded on the EA database within 500m of the site. A closed landfill is recorded ~280m to the north-west of the site but should not affect the development (see Appendix C).

### 3.0 PRELIMINARY RISK ASSESSMENT

#### 3.1 Contaminants & Hazards of Concern

The Phase 1 process has identified the following potential issues that may affect the development:

- The main bowling club site has been developed since at least the 1890s, with various phases of expansion occurring until approximately the 1980s. The area has been used as a social club, a bowling green and a residential house. Although none of these uses represent a significant sources of ground contamination, developed site use has been on-going for a considerable period and some contamination may have resulted.
- The eastern and western parts of the site (Area 2&3) were developed with domestic scale garages and other small buildings between the 1930s and the 1970s. Some limited areas of ground contamination may be present as a result of this land use.
- The site buildings (including buildings now removed) were constructed at a time when use of asbestos containing materials (ACMs) was common. Site soils may include ACMs.
- Imported materials may have been used to form hard surfaced areas and/or improved drainage for the bowling green. Imported made ground can sometimes include concentrations of contaminants that may not be appropriate in a residential setting.
- Some fly tipping has been carried out in the disused areas of the site in recent years and some limited ground contamination may have occurred as a result.
- A laundry was historically (between ~1900 and ~1980s) located in close proximity to the north of the site. A chimney and a tank are both recorded at various times during this period. Dry cleaning, if it was carried out, represents a potentially significant source of ground contamination in the form of chlorinated solvents which can remain in the ground for long periods. Solvents could migrate onto the site via groundwater movement and have the potential to impact the future site residents and other receptors.
- Land immediately to the north of the western part of the site has also historically also been used to house domestic scale garaging. Some contamination may be present in these areas as a result. Significant impacts at the site are currently considered unlikely.

No other potential contaminants or sources of contamination have been identified during the Phase 1 assessment process.

Some concentrations of the following contaminants in particular may be present as a result of a history of development at the site and local ground conditions:

- Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc.
- Asbestos containing materials (ACMs).
- Banded speciated total petroleum hydrocarbons (TPH) fractions C6-C35.

- Volatile organic compounds including chlorinated solvents.
- Priority 16 polycyclic aromatic hydrocarbons (PAHs): naphthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo-a-anthracene, chrysene, benzo-b-fluoranthene, benzo-k-fluoranthene, benzo-a-pyrene, dibenzo-a,h-anthracene, benzo-g,h,i-perylene, indeno-1,2,3-c,d-pyrene.

Ground gases (methane and carbon dioxide) are currently considered unlikely to affect the site or the development.

### **3.2 Source Pathway, Receptor Assessment**

The qualitative PRA is presented in Table 1 and considers the proposed residential development. The PRA includes an initial conceptual site model to assess the relative significance of risks associated with relevant pollutant linkages identified by a source-pathway-receptor analysis. The relative assessment of risk is based on the following:

- The likelihood (probability) of an event occurring, taking into account the presence of the hazard & receptor, as well the plausibility of the pathway. The likelihood is defined as the chance of a particular event occurring in a given period of time.
- The severity of the potential consequence, taking into account the relative significance of the hazard (typically site specific) and the relative sensitivity of the receptor. Severity or consequence can be defined as adverse effect(s) or harm arising from a hazard that impairs receptor function/condition in the short term (acute) or longer term (chronic).
- Risk classification (very low to very high) using a risk matrix that combines 'consequence' and 'likelihood'; the risk matrix is detailed in Appendix E.
- For the purposes of the qualitative assessment, identified very low and low risks will be considered acceptable for the redeveloped use.

The PRA does not specifically consider risks to construction workers during the development who may come into contact with site soils. Protection of workers should be achieved via routine precautions and compliance with relevant construction health and safety statutory/non-statutory guidance and codes of practice.

**Table 1: Post-Development Conceptual Site Model & Preliminary Risk Assessment**

| Relevant Pollutant Linkages                         |                                                                                                                                                                                                                                 |                                                                | Risk Assessment |                |                                 |                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------|----------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source/Hazard                                       | Pathway                                                                                                                                                                                                                         | Sensitive Receptor                                             | Consequence     | Likelihood     | Preliminary Risk Classification | Comments                                                                                                                                                                                                                                                                    |
| Inorganic/organic substances in soils & groundwater | Direct contact (Ingestion & Dermal)<br>Inhalation of soil dust<br>Internal and external inhalation of organic vapour<br>Migration of organic contaminants into plastic water supply pipes<br>Ingestion of site grown vegetables | <b>Human Health</b><br>Future site users                       | Medium          | Low likelihood | Moderate to Low risk            | Some ground contamination may be present as a result of historic site use or surrounding land use. Sensitive residential receptors will be introduced.                                                                                                                      |
|                                                     | Soils leaching to groundwater<br>Perched water discharge to groundwater<br>Lateral groundwater flow                                                                                                                             | <b>Controlled Waters</b><br>Groundwater                        | Medium          | Low likelihood | Moderate to Low risk            | The site is located in an important groundwater resource area, but a significant thickness of low permeability superficial deposits are present.<br><br>Surface waters are not located in close proximity and are less likely to be affected by contaminants from the site. |
|                                                     | Groundwater discharge to surface waters<br>Direct surface run-off                                                                                                                                                               | <b>Controlled Waters</b><br>Surface water                      | Medium          | Unlikely       | Low risk                        |                                                                                                                                                                                                                                                                             |
| Asbestos fibres/fragments in shallow soils          | Inhalation of soil dust<br>Direct contact (Ingestion & Dermal)                                                                                                                                                                  | <b>Human Health</b><br>Future site users                       | Medium          | Likely         | Moderate risk                   | -                                                                                                                                                                                                                                                                           |
| Aggressive ground conditions                        | Direct contact with contaminated soils & pore water                                                                                                                                                                             | <b>BBM&amp;S</b><br>Buildings, building materials and services | Medium          | Unlikely       | Low risk                        | -                                                                                                                                                                                                                                                                           |

Note: Identified Very Low and Low risks are considered acceptable for the redeveloped use  
BBM&S: Buildings, building materials and services.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

A Phase 1 environmental assessment has been undertaken for the site to support the proposed redevelopment. The purpose of the assessment was to:

1. Determine the potential for land contamination issues arising from the current or historical uses of the site and surrounding area; and
2. Provide an assessment of potential risks that identified land contamination issues may pose to sensitive receptors on the developed site (including future site users, controlled waters and infrastructure).

The PRA has identified moderate to low risks to the identified receptors associated with potential land contamination and other related sources/hazards at the site. The following actions should be incorporated into the development scheme to ensure potential risks are effectively managed:

- Any site buildings should be assessed for potential ACMs via an appropriate HSG264 compliant asbestos demolition survey. The recommendations of the survey should be implemented in line with CAR-2012, with all ACMs handled appropriately and removed for appropriate off-site disposal.
- Potential invasive weed species should be professionally assessed and a management strategy should be agreed and implemented as necessary prior to any ground excavations at the site.
- Following finalisation of the proposed residential development layout, demolition and site clearance, a targeted Phase 2 investigation that is proportionate to the risk levels highlighted in Table 1 should be completed. In particular, the investigation should:
  - *Establish the groundwater regime and groundwater quality in the north of the site in particular.*
  - *Establish shallow ground conditions and soil quality in future garden/landscaped areas.*
- The Phase 2 should be followed by generic quantitative/qualitative human health and controlled water risk assessments, as necessary, to identify the significance of any soil/groundwater contamination present.
- Following the Phase 2 investigation, the initial conceptual model and risk evaluation should be refined, reducing the uncertainties highlighted by this report. It is recommended that the scope of the Phase 2 be agreed in advance with the contaminated land department at Manchester City Council. The Phase 2 report should include conclusions and recommendations for any further investigation or risk assessment work.
- If required, a remediation/protection strategy should be developed to ensure that new buildings and site soils (including imported soils/sub-soil) do not represent a potentially unacceptable risk to the future site occupants.
- A discovery strategy should be developed for use during the redevelopment should unexpected impacted made ground deposits and/or natural soils and waste deposits be

encountered. The strategy should include a protocol for characterising and dealing with any encountered contamination, including liaison with Manchester City Council.

- New site services should be laid in clean service corridors.
- Below ground water supply services should comply with industry best practice for site development and the requirements of the water utility company.

## 5.0 REFERENCES

### *General*

1. DCLG. Current National Planning Policy Framework.
2. DCLG. Current Technical guidance to the National Planning Policy Framework.
3. Environment Agency. Land contamination: risk management. [www.gov.uk/guidance/land-contamination-how-to-manage-the-risks](http://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks). Last updated April 2021. Viewed May 2022.
4. Environment Agency. 2004. Model Procedures for the Management of Land Contamination. CLR 11.
5. Environment Agency, NHBC, CIEH. 2008. Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D 66, Vols 1 & 2.
6. DEFRA, Environment Agency. 2002. Environment Agency R&D CLR-8, Potential Contaminants for the Assessment of Land.
7. DEFRA. 2012. Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.
8. DEFRA. 2012. The Contaminated Land (England) (Amendment) Regulations 2012.
9. BS 10175:2011+A1:2013. Investigation of potentially contaminated sites. Code of practice.
10. BS 5930:2015. 'Code of practice for ground investigations'.
11. BRE. 2004. Cover Systems for Land Regeneration, Thickness of Cover Systems for Contaminated Land. BR465.
12. Environment Agency. 2001. Assessment and Management of Risks to Buildings, Building Materials and Services from Land Contamination. R&D P5-035/TR/01.
13. Environment Agency online. [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency)

### *Human Health*

14. Environment Agency, 2008, Human health toxicological assessment of contaminants in soil, Science Report – SC050021/SR2
15. Environment Agency, 2008, Updated technical background to the CLEA model, Science Report – SC050021/SR3
16. Environment Agency, CLEA Software Handbook, Science Report – SC050021/SR4
17. Environment Agency, 2008, Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Science Report – SC050021/SR7
18. Environment Agency, CLEA Software Handbook, Science Report – SC050021/SR4
19. Department for Environment, Food and Rural Affairs and The Environment Agency, Published SGV & TOX
20. Total Petroleum Hydrocarbon Criteria Working Group Series. 1997-1998. Volumes 1-5.
21. Environment Agency. February 2005. The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils. Science Report P05-08/TR3
22. PHE. 2017. Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs).
23. CL:AIRE, 2020. Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration.
24. Withdrawn: CL:AIRE/CIEH, May 2008, Guidance on Comparing Soil Contamination Data with a Critical Concentration
25. DEFRA & Contaminated Land: Applications in Real Environments (CL:AIRE). December 2013. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report and Technical Appendices A to I.
26. CL:AIRE: SAGTA Funded Phase-2 C4SL Project. [www.claire.co.uk/projects-and-initiatives/category-4-screening-levels](http://www.claire.co.uk/projects-and-initiatives/category-4-screening-levels)
27. Land Quality Management. Nathanail CP; McCaffrey C; Gillett AG; Ogden RC; Nathanail JF. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham. 2015.
28. EIC/AGS/CL:AIRE Soil Generic Assessment Criteria (GAC) for Human Health Risk Assessment, January 2010.
29. Society of Brownfield Risk Assessment (SoBRA). Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater. Version 1.0. February 2017
30. Dr Mengfang Chen, 2010, Analytical Integration Procedures for the Derivation of Risk-Based Generic Assessment Criteria for Soil, Human and Ecological Risk Assessment: An International Journal, pages 1295-1317, Volume 16, Issue 6, 2010
31. Environment Agency. The determination of cyanide and thiocyanate in soils and similar matrices (2011); Methods for the Examination of Waters and Associated Materials; <https://www.gov.uk/government/uploads>
32. WHO, March 2003, DRAFT, Guidelines for Drinking Water Quality 3, Chapter 8

### *Asbestos and ACMs*

33. HSE. Asbestos health and safety; [www.hse.gov.uk/asbestos/](http://www.hse.gov.uk/asbestos/)
34. The Control of Asbestos Regulations 2012. SI 2012 No. 632.
35. HSE. Managing and working with asbestos. Control of Asbestos Regulations 2012. Approved Code of Practice and guidance L143. [www.hse.gov.uk/pubns/books/l143.htm](http://www.hse.gov.uk/pubns/books/l143.htm)
36. HSE. Asbestos: The Survey Guide HSG264. 2<sup>nd</sup> Edition. 2021. [www.hse.gov.uk/pubns/priced/hsg264.pdf](http://www.hse.gov.uk/pubns/priced/hsg264.pdf)
37. CL:AIRE, 2016. Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance. Download at [www.claire.co.uk/asbestos](http://www.claire.co.uk/asbestos)
38. CIRIA C733. Asbestos in soil and made ground: a guide to understanding and managing risks. March 2014.

### **Permanent Gases, Radon Gas & VOC Vapours**

39. NHBC. Guidance on evaluation of development proposals on sites where methane and carbon Dioxide are present Report No 10627-RO1 (04); 2007
40. CIRIA C665, Wilson, S. et al. 2007, Assessing risks posed by hazardous ground gases to buildings
41. CIRIA C682, Baker, K., Hayward, H., Potter, L., Bradley, D. and MacLeod, C., 2009, The VOCs Handbook Investigating, assessing and managing risks from inhalation of VOCs at land affected by contamination
42. CIRIA C716, P Welburn, K Baker, K Borthwick. and C MacLeod, 2012, Remediating and mitigating risks from volatile organic compound (VOC) vapours from land affected by contamination
43. CIRIA C735; Good Practice on the testing and verification of protection systems for buildings against hazardous ground gases, July 2014
44. CIRIA C748; Guidance on the use of plastic membranes as VOC vapour barriers
45. Wilson, S., Card, G., Haines, S., 2009, Ground Gas Handbook
46. CL:AIRE Research Bulletin, RB17, November 2012. A Pragmatic Approach to Ground Gas Risk Assessment.
47. BS 5925:1991 'Code of practice for ventilation principles and designing natural ventilation'.
48. BS 8576:2013. Guidance on investigations for ground gas: permanent gases and volatile organic compounds (VOCs)
49. BS 8485:2015. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
50. BS 5925:1991. Code of practice for ventilation principles and designing natural ventilation.
51. WHO, 2000, Guidelines for Air Quality, Geneva.
52. USEPA, 2004, User's Guide for Evaluating Subsurface Vapor (sic) Intrusion into Buildings, EPA Contract Number 68-W-02-33, US Environmental Protection Agency, Washington DC
53. USEPA, 2002, OSWER, Draft guidance for evaluating the vapor intrusion to indoor air pathway from groundwater and soils (subsurface vapor intrusion guidance), USEPA, Washington DC, USA
54. USEPA, 2017. Documentation for EPA's Implementation of the Johnson and Ettinger Model to Evaluate Site Specific Vapor Intrusion Into Buildings. Version 6.0.
55. Yijun Yao, Rui Shen, Kelly G. Pennell, and Eric M. Suuberg. Estimation of Contaminant Subslab Concentration in Vapor Intrusion Including Lateral Source–Building Separation. School of Engineering, Brown Univ., Providence RI 02912. Published in Vadose Zone J. ; 12(3): . doi:10.2136/vzj2012.0157.
56. DCLG. Building Regulations for England. Approved Doc C. Site preparation & resistance to contaminants & moisture.

### **Planted Areas**

57. BS 3882:2015. British Standard for Topsoil
58. Withdrawn: Interdepartmental Committee for the Redevelopment of Contaminated Land, ICRL Guidance Note 59/83, Guidance on the Assessment and Redevelopment of Contaminated Land, 2nd Edition
59. Ministry of Agriculture, Fisheries & Food (MAFF). Code of Good Agricultural Practice for Protection of Soil. 1998.

### **Controlled Waters**

60. Environment Agency, October 2006, Remedial Targets Methodology; Hydrogeological Risk Assessment for Land Contamination, Product Code: GEHO0706BLEQ-E-E.
61. Environment Agency, October 2006. Remedial Targets Worksheet v3.1: User Manual; Hydrogeological Risk Assessment for Land Contamination. Product Code: SCH01006BLMX-E-E.
62. Environment Agency. On line: Groundwater Protection collection including Groundwater Protection Position Statements and Technical Guidance (incorporating previous GP3).
63. Environment Agency. Technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environmental Protection Act 1990.
64. The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015
65. British Geological Survey, 1997, The physical properties of major aquifers in England and Wales, Hydrogeology Group, Technical Report WD/00/04, Environment Agency R&D Publication 8.
66. British Geological Survey, 2000, The physical properties of minor aquifers in England and Wales, Hydrogeology Group, Technical Report WD/97/34, Environment Agency R&D Publication 68.

### **BBM&S**

67. Environment Agency. 2001. Assessment and Management of Risks to Buildings, Building Materials and Services from Land Contamination. R&D P5-035/TR/01.

## FIGURES

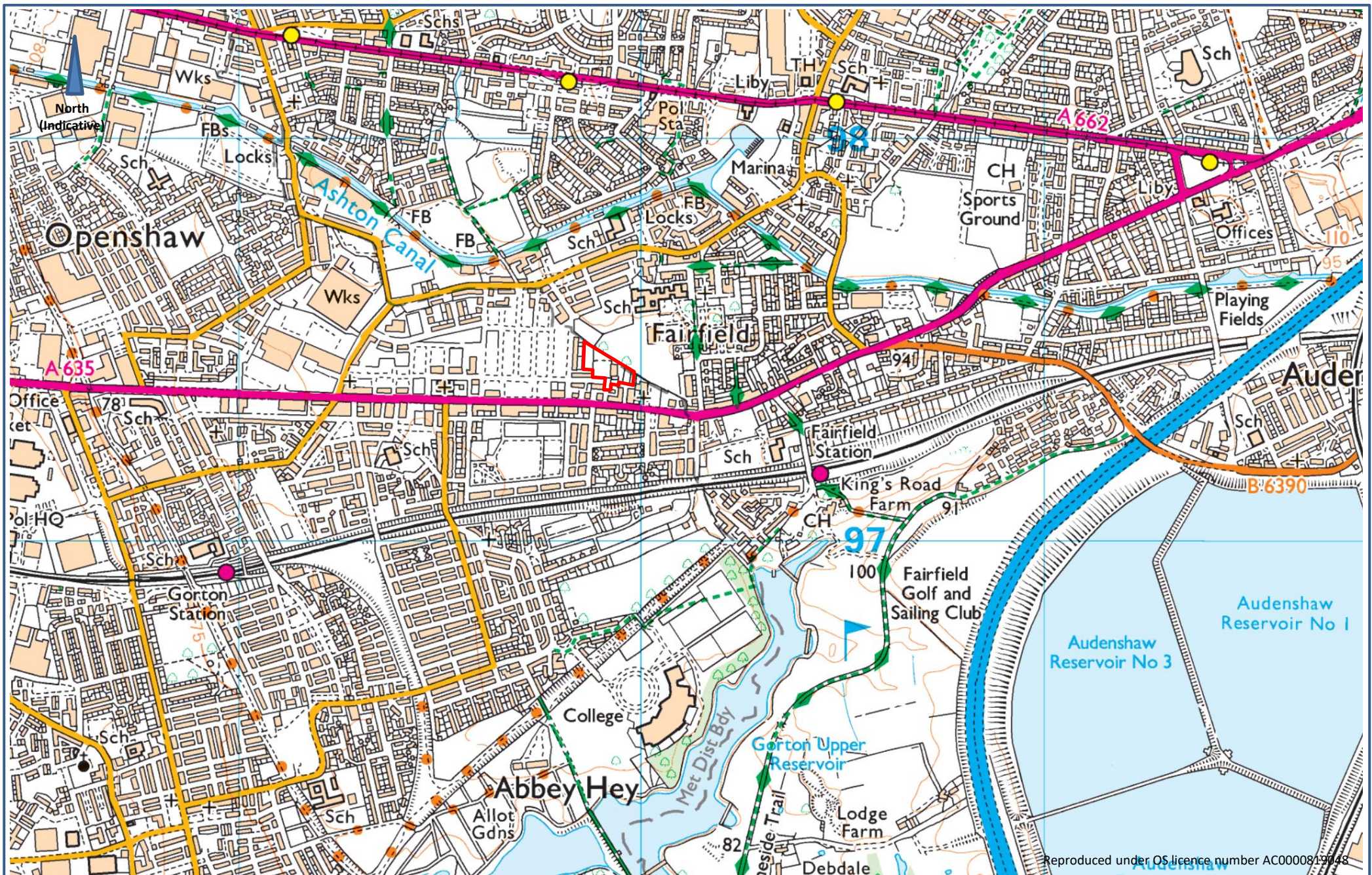


Figure 1 Site Location Plan

 Site Location

Scale: Not to scale

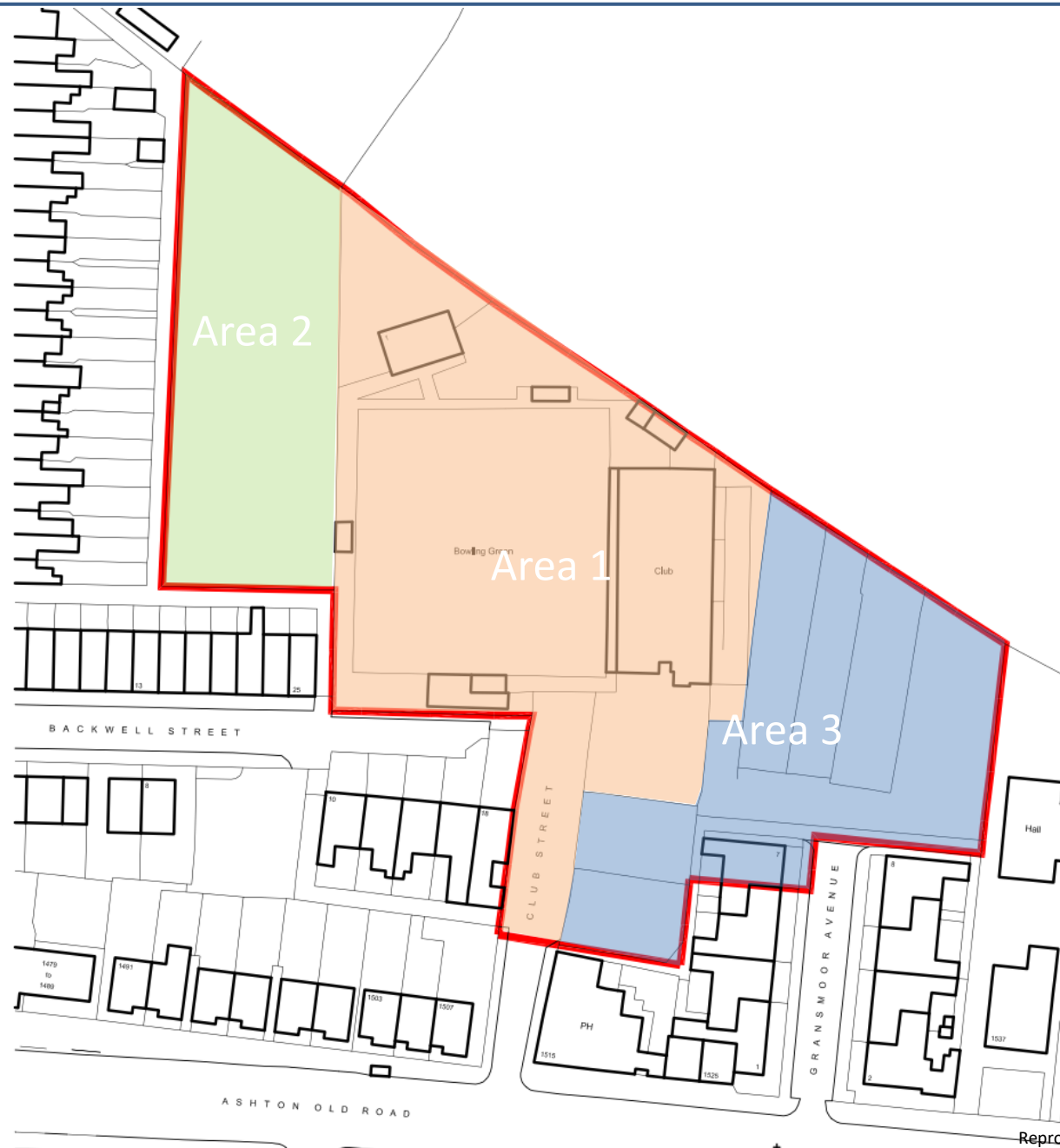


Reproduced under OS licence number AC0000819048

Figure 2 Site Layout Plan

 Site Location

Scale: Not to scale



Reproduced under OS licence number AC0000819048

Figure 3 Site Layout Plan Showing Areas 1 - 3



Site Location

Scale: Not to scale



Site: Land at Club Street, Openshaw, Manchester, M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Reproduced under OS licence number AC0000819048

Figure 4

Site Features

 Site Location

Scale: Not to scale



Figure 5 Aerial Photograph showing April 2022 Site Layout

 Site Boundary (Indicative)

Scale: Not to scale

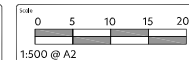


**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester, M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



**Notes:**  
Figured dimensions are to be used in all cases.  
Dimensions shown shall not be scaled from drawings unless for checking and checking purposes.  
Local highway and boundary boundaries are produced by Studio KMA using all reasonable means. Studio KMA cannot be held responsible for such dimensions or other matters by others.  
Any discrepancies to dimensions should be checked with the Architect or the address index prior to commencement of the works.  
No deviation from drawing shall be permitted without the prior written consent of the Architect.  
This drawing is to be used in conjunction with all the relevant mechanical and electrical drawings.  
This drawing is to be used in conjunction with the relevant structural engineer's drawings, structural calculations and reinforcement details.  
This drawing is to be used in conjunction with the relevant fire safety drawings.  
Please note that the use of any quantitative data is done as at the date of issue.  
This drawing is the copyright of Studio KMA and to be returned to the Architect on completion of the contract. No drawing shall be reproduced without the written permission of Studio KMA.

| Revision | Date     | Revision Description  | Drawn | Checked |
|----------|----------|-----------------------|-------|---------|
| P1       | 01.11.21 | Planning to Rev 21-25 | CTW   | AT      |
| P1       | 20.02.21 | Initial Issue         | CTW   | AT      |



Project Name:  
**Openshaw Club Street**

Document Title:  
**Proposed Site Plan**

Drawing Number:  
**OCS-KMA-XX-XX-DR-A-7002**

Project Number:  
**T1180**

Series:  
**A3 Planning**

Revision:  
**P2**

Drawn by:  
**CTW**

Authorised by:  
**AT**

Date:  
**02.11.23**

Studio KMA  
Cheshire Avenue | Broomfield Street | Farnworth | Greater Manchester | M14 6PP  
T: 0161 8737001  
E: info@studiokma.co.uk | www.studiokma.co.uk

## **APPENDIX A**

### **LIMITATIONS AND EXCEPTIONS OF ASSESSMENT**

## LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

KMM Homes Limited (the Client) has requested that a Phase 1 Site Investigation (the 'Project') be performed at the site. The report (and any copies of it) have been prepared for the sole use and reliance of the Client. This report (and any copies of it) shall not be relied upon or transferred to any other parties without the express written authorisation of Peak Environmental Solutions Limited. If an unauthorised third party comes into possession of this report, (and any copies of it) they rely on it at their peril and the authors owe them no duty of care and skill. Findings and opinions conveyed in the services should only be used by competent persons acting on the behalf of the Client and the findings and opinions conveyed in the services should only be used for the intended use. Copyright of reports & documents remains with Peak Environmental Solutions Limited. The project and report are subject to Peak Environmental Solutions standard terms and conditions.

The findings and opinions conveyed via this report are based on information obtained from a variety of sources as detailed within this report, and which Peak Environmental Solutions Limited believes are reliable. Nevertheless, Peak Environmental Solutions Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon. The report represents the findings and opinions of experienced geo-environmental consultants. Peak Environmental Solutions Limited does not provide legal advice and the advice of lawyers may also be required.

The opinions presented in this report are based on a review of records, available investigation reports and historical sources. Peak Environmental Solutions Limited has found indicators that suggest that geo-environmental hazards may exist at the site and these may warrant mitigation or consideration appropriate to the end use stated by the Client. Not finding such indicators does not mean that geo-environmental hazards do not exist at the site. In addition, the Risk Assessment did not include any enquiry with respect to substances not included within the substances of concern.

The Client is advised that the geo-environmental conditions stated within reports supplied to Peak Environmental Solutions Limited are subject to change. Certain indicators of the presence of geo-environmental hazards may have been latent at the time of the most recent site reconnaissance and may subsequently have become observable. It is possible that Peak Environmental Solutions research, while fully appropriate for the Project, failed to indicate the existence of important information sources. Assuming such sources actually exist, their information could not have been considered in the formulation of Peak Environmental Solutions findings and opinions.

Certain indicators or evidence of geo-environmental hazards may have been outside the very limited portion of the subsurface investigated or monitored, latent at the time of this work or only partially intercepted by the works and thus their full significance could not have been appreciated. Groundwater levels are particularly susceptible to variations due to seasonal or other effects. Accordingly, it is possible that Peak Environmental Solutions work, whilst fully appropriate for the Project failed to indicate the presence or significance of geo-environmental hazards. Assuming the presence of a hazard, it could not have been considered in the formulation of Peak Environmental Solutions findings and opinions. The subsurface geological profiles and other descriptions are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

Any geotechnical comments given in this report and the opinions expressed are based on the ground conditions from literature sources and/or encountered during site works and on the results of geotechnical and analytical tests made in the field and laboratory. However, there may be special geotechnical conditions prevailing at the site which have not been disclosed by the literature sources and/or investigations and which have not been taken into account in the report. Accordingly, a careful watch should be maintained in any future groundworks and any geotechnical comments, findings and recommendations of this report be reviewed, as necessary, as work proceeds.

Any interpretation of the results of the Project have been based on the proposed site usage and the findings are not valid should the proposed land use and/or the regulatory regime/guidance change. Where interpretation is based on public domain guidance/protocols/models/software/code, Peak Environmental Solutions is not liable for errors in the guidance/protocols/models/software/code.

Peak Environmental Solutions Limited believes that providing information about limitations is essential to help the Client identify and thereby manage their risks. These risks can be mitigated, but they cannot be eliminated, through additional research. Peak Environmental Solutions Limited will on request, advise the client of the additional research opportunities available, their impact on risk, and their cost.

In preparing this report, it has been assumed that all past and present occupants have provided all relevant and other information, especially relating to known or potential geo-environmental hazards. This report is not required to identify insufficiencies or mistakes in the information provided by the user/owner or from any other source, but has sought to compensate for these where obvious in the light of other information.

Authorised or unauthorised copies of this document may come into the possession of organisations via the Planning Portal or via other means, such as the Freedom of Information Act. Organisations are requested by Peak Environmental Solutions to these Limitations and Exceptions and our standard terms & conditions, especially with respect to confidentiality, report use and copyright.

**APPENDIX B**

**SITE PHOTOGRAPHS**



Photo 1, July 2021: Area 1: Looking north up Club Street



Photo 2, July 2021: Area 1: Site entrance and car park looking north-east from Club Street



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R1

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 3, July 2021: Area 1: Site boundary wall from Backwell Street looking north



Photo 4, July 2021: Area 1: Looking north-west across the car park towards the club



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 5, July 2021: Area 1: Looking south across the car park. Club Street on the right of the photo



Photo 6, July 2021: Area 1: Looking south across the area in the east of the site to the east of the club building



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 7, July 2021: Area 1: Looking north-west across the bowling green towards the bungalow



Photo 8, July 2021: Area 1: Looking south-east across the green, bungalow on the left of the photo



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 9, July 2021: Area 1: Looking south from the northern tip of the site



Photo 10, July 2021: Area 1: Looking north towards the northern tip of the site



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 11, July 2021: Area 1: Looking east across the green towards the main club building



Photo 12, July 2021: Area 1: Inside the main club building



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 13, July 2021: Area 1: Main club building basement area 1



Photo 14, July 2021: Area 1: Main club building basement area 2



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 15, February 2022: Area 2: Access to the west of the site via Burman Street and the Termstall fencing yard



Photo 16, February 2022: Area 2: Looking south across the western part of the site



Photo 17, February 2022: Area 2: Looking north towards the site gates and the Termstall yard beyond



Photo 18, February 2022: Area 3: Fly tipping along the western site boundary



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 19, February 2022: Area 2: Trees in the south of the western site area. Looking south towards houses the back of houses on Backwell Street



Photo 20, February 2022, Area 2: Looking west towards the back of houses on Burman Street across the area of trees in the west of the site.



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 21, October 2023: Area 3: Overgrown areas to the east of Club Street



Photo 22, October 2023: Area 3: Overgrown areas to the east of Club Street



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR

Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 23, October 2023: Area 3: Site of the demolished house at the end of Gransmoor Ave looking west



Photo 24, October 2023: Area 3: Site of the demolished house at the end of Gransmoor Ave looking east



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)



Photo 25, October 2023: Area 3: Looking north at the head of Gransmoor Avenue at overgrown land in the east of the site



Photo 26, October 2023: Area 3: Remnant structures in the north-east of the site



**PEAK ENVIRONMENTAL  
SOLUTIONS**

Site: Land at Club Street, Openshaw, Manchester M11 1HR  
Project: 42163R3

Beechfield, Ninelands Road, Hathersage  
Derbyshire, S32 1BJ  
Tel: 01433 659071  
[www.peakenvironmentalsolutions.com](http://www.peakenvironmentalsolutions.com)