Asbestos in soil
Our practical approach to remediation
Proposed site for future development of Hinkley C Power Station

Asbestos is a class 1 ‘non-threshold’ carcinogen known to cause serious illnesses such as lung cancer, mesothelioma and asbestosis. Currently it is estimated by the HSE that over 5,000 people die of asbestos related disease every year in the UK.

The management and removal of asbestos from buildings is well understood and has been controlled by relevant legislation and industry best practice for decades. However, how to deal with the occurrence of asbestos in soil is generally less understood yet demands an equally careful and experienced approach. At Hydrock, we offer industry-leading experience in this area.

Industry profiles published by The Department of the Environment list asbestos as being a potential key contaminant on 85% of brownfield land. This illustrates that asbestos in soil is now a major issue that affects the redevelopment of sites.

The introduction of recent industry guidance relating to asbestos in soil has increased its profile and routine asbestos screening is now commonplace. However, if the identification of asbestos in soil occurs late in the process of developing a site, it may lead to delays and expensive retrospective remediation.

Likely sources of asbestos in soil
• Historical sub-standard asbestos removal prior to demolition
• Below ground asbestos lagged pipes/ducts not removed during the demolition phase
• Poor waste management during manufacturing processes
• Debris arising from fire damaged properties
• Redevelopment of former landfills
• Illegally buried waste

Our clients
We have delivered asbestos investigation and remediation works at sites for:
St Modwen
Homes and Communities Agency
EDF Energy
National Grid
Cemex
Crossrail
Wales & West Utilities
Large and small scale housing developers

Understanding the significance of asbestos in soil

1 Health and Safety Statistics: Annual Report for Great Britain 2013/14
How to approach an asbestos contaminated site

There is a perception that the discovery of asbestos in the ground prior to, or during construction works can be excessively disruptive to a site’s future development. However, early or prior engagement with a contractor who fully understands the problem and the steps necessary to mitigate the disruption, can ensure the successful redevelopment of a site. It’s an approach that helps to secure the appropriate permits and also the development and implementation of a cost effective remedial strategy.

Step 1 – Defining the problem
We review all existing information relevant to the site to identify if asbestos is likely to be a contaminant of concern and ascertain any gaps in the existing data. An experienced asbestos soil surveyor will make a preliminary site visit to determine if further investigations are required to gather more information to define the extent of the problem.

Using our extensive experience of conducting brownfield site investigations, we conduct rigorous and robust investigations to enable a remediation options appraisal that gives our clients certainty of value for money. This helps us to establish the most cost effective approach to manage the site. It also helps us in notifying relevant stakeholders and securing licences to deal with the asbestos. Depending on the extent of the problem, an approach could range from tightly controlled materials management for reuse onsite to site-wide remediation works.

Hydrock’s 5-step process At Hydrock, our key specialists have over 15 years of experience dealing with asbestos in soil. We employ a 5-step process to achieve a successful outcome for our clients.

1. Step 1 – Defining the problem
2. Step 2 – Site investigations
3. Step 3 – Remediation options appraisal
4. Step 4 – Legal and regulatory considerations
5. Step 5 – Implementation and monitoring

HINKLEY C POWER STATION
EDF Energy (pictured)

We are responsible for a remediation programme over several phases that targets the safe segregation, removal and validation of c450,000 tonnes of asbestos contaminated soil originating from the 1960’s construction period. The programme is designed to enable the future redevelopment of the site for the first nuclear power station in the UK in over 25 years. It is widely considered that at peak the site will be one of the largest construction projects in Europe. Working with the regulatory bodies and the client, we have assisted in minimising disposal and maximising retention of significant volumes of low level asbestos contamination within the development framework. This has also reduced pressure on the local road network, saving millions in construction costs.
OUR TRACK RECORD

WATERSIDE REGENERATION, NORTHAMPTON
UNIVERSITY OF NORTHAMPTON AND
HOMES AND COMMUNITIES AGENCY

Our specialist remediation expertise has enabled the regeneration of two adjacent sites which form part of the 30 ha Northampton Brownfield Initiative.

With former uses including industrial manufacturing, power generation and landfill, asbestos was initially not the key contaminant of concern. However, its presence was discovered in a number of isolated locations. Having suitably competent staff onsite was key to identifying asbestos in soil and enabling a rapid response to maintain the construction programme whilst achieving the necessary high quality of remediation.

BUSINESS PARK, GUILDFORD
CONFIDENTIAL CLIENT (pictured)

Historic demolition work at the site of a proposed new business park in Surrey had led to concerns being raised by the local HSE and residents about the spread of asbestos fibre.

We supported our client in engaging with local residents and regulators and developed a remediation strategy that satisfied all stakeholders.

A robust site investigation identified the extent of the contamination and informed the design of a safe methodology to remediate, remove or retain soils with appropriate regulatory validation.

Step 2 – Forward planning

Based on the findings we will design a remedial strategy that fits with the proposed land use and redevelopment programme.

By assessing a site holistically we can determine the best approach to the safe removal or retention of the asbestos contaminated soil.

Many factors can influence the approach, for example:

- Characteristics of the asbestos materials, distribution and soil type
- Proposed land use and programme
- Cost/benefit analysis
- The attitude of local regulators and clients to asbestos and future risk/liability
- Potential impact to local receptors

On behalf of our clients we liaise with the local authorities to agree an acceptable remediation solution that is appropriate for the site and its intended use. We have also developed ‘lines of evidence’ that are acceptable to the regulators to demonstrate that the works are being undertaken to the highest possible standards.

We communicate with all parties to agree strategies so that work can begin safely, to an agreed plan, with clearly established desired outcomes. It’s an approach designed to minimise disruption to the original development timetable and keep all stakeholders informed throughout the process.

The Construction Industry Research and Information Association (CIRIA), supported by Hydrock, has recently published the report ‘Asbestos in soil and made ground: a guide to understanding and managing risk’. This document is the first good practice guide in the UK to amalgamate current industry knowledge on the subject since 1990 and identify gaps in the knowledge base.

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The discovery of asbestos in soil at the site of a former school was a cause for concern that required a careful approach and close liaison with all stakeholders including local residents. An early site investigation gave certainty to the remediation scheme and allowed a significant cost saving to the client. This enabled the site remediation to progress to the client’s programme and ultimately secured planning sign-off for the construction of a new, high quality, affordable housing scheme.

Our remediation work at a former industrial manufacturing site included the processing of asbestos-impacted soils. The asbestos was present as a result of uncontrolled, historic demolition and site redevelopment prior to our client’s involvement in the site. An early site investigation gave certainty to the remediation scheme and allowed a significant cost saving to the client. This enabled the site remediation to progress to the client’s programme and ultimately secured planning sign-off for the construction of a new, high quality, affordable housing scheme.

Choosing the right people for the task is a key step. This is particularly relevant to sites contaminated with asbestos where the safety of everyone involved is of paramount importance. Pertinent to all work with asbestos is a training needs analysis to identify specific training requirements for individual staff. All staff working in asbestos controlled areas are trained to Category C – Licensed Asbestos Work standard. We have also developed robust control measures to protect the workforce, wider site users and the local community from fibre exposure. Our methodology is regularly authenticated by external UKAS-accredited bodies to demonstrate that the control measures are effective.

Step 3 – Establishing a plan of work

With a thorough understanding of a client’s site and its wider surroundings we are able to formulate the appropriate methodologies for a specific remediation site.

The key issues we consider in planning and executing the work are:
• The licensing regime
• Coordination with other contractors on site
• Site layout including access arrangements
• Decontamination procedures for personnel and plant
• The control measures to reduce fibre liberation
• The air monitoring strategy
• Risk-based management of waste disposal

We review these key factors as the work progresses to ensure that the methodology is fit for purpose and is being adapted to any changing circumstance on site and within the ground.

Step 4 – Competency

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Whilst asbestos was not the key contaminant of concern, there were areas of significant gross impact and licensed works were required to remove unsuitable materials and process contaminated stockpiles prior to reuse.
Step 5 – Validation

Comprehensive and accurate record keeping is critical to the successful sign-off of planning conditions for such a high risk, widely known and revered contaminant.

Upon completion of the remediation we ensure that future site users have access to comprehensive validation records and, where material has been retained onsite, an asbestos management plan. Reports will include a detailed audit trail of material movements, including disposal/reuse records and ‘as-built’ drawings.

However, our focus on preventing the uncontrolled release of asbestos does not end here. We frequently provide bespoke asbestos awareness training for the follow-on site workers to ensure their understanding of the asbestos management plan for their own protection.

Snapshot of our services

- Site appraisal including pre-acquisition guidance
- Comprehensive site investigations for asbestos
- Liaison with regulators and local authorities
- Development and approval of a remediation strategy
- Delivery of remediation works
- Accurate and detailed reporting for all stakeholders
- Comprehensive documentation for planning conditions and protection of future site users

In addition on brownfield sites we also deliver:

- Land remediation
- Groundwater remediation
- Demolition and decommissioning
- Ground improvements

James Macfarlane
Asbestos Manager
James is a BOHS qualified asbestos surveyor and analyst with over eight years’ experience in the asbestos industry.

He leads our sampling and site investigation works and delivers asbestos awareness training to colleagues and clients with a particular focus on asbestos contaminated land.

James regularly speaks at conferences led by CIRIA and Brownfield Briefing on best practices for asbestos site investigations.

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Connect with us

Hydrock is a specialist land remediation contracting business and multidisciplinary engineering consultancy operating from a UK-wide office network.

At the heart of our business is the capability, enthusiasm and integrity of our people.

We take pride in working with our clients to achieve outstanding results and we create a real sense of shared purpose within our business. This is what makes Hydrock a great place to work, which is reflected by our being ranked within the top 30 for three years running in the Sunday Times 100 Best Companies to Work For.