Environmental Sustainability

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OXFORD CITY COUNCIL

Land Quality Strategy

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A Land Quality Strategy for Oxford

Contents

Introduction

What is Land Quality?

In the UK the legacy of our industrial past can have a significant impact on land quality. Land quality refers to the extent to which land is free from contamination, which is most commonly associated with former industrial land uses. It is important to manage these effects to improve the quality of our natural and built environment, both at a local and national level.

There are significant environmental, social and economic benefits to improving land quality and managing contaminated land efficiently. Socially these include opening up the potential for urban regeneration and improved quality of life. Environmentally, the pressure for greenfield development can be reduced, soil can be recycled and the quality of the natural environment (especially water resources) can be dramatically improved. Economically, there are local and national benefits including the development of innovative new remediation technologies and increasing the potential for brownfield redevelopment.

This strategy is a requirement of national contaminated land policy and seeks to provide a clear approach for addressing land contamination at a local level within the national policy framework. This strategy is a review of the previous approved strategy adopted and published in 2014.

This strategy seeks to ensure that Oxford's residents and natural environment are not exposed to unacceptable risks from land contamination and to improve our environment for a sustainable future. This will be achieved by working together with developers, landowners and other key stakeholders to manage the risks from land affected by contamination efficiently and effectively.

The Policy Framework

The Contaminated Land regime in the UK seeks to address the legacy of historic pollution using a risk based approach. The risk based approach is applied in the planning system through new development, and through provisions in the Environmental Protection Act 1990. In 2012 Defra published revised statutory guidance which clarifies local authority's responsibilities for managing land contamination.

For a risk to exist from contamination there must be a complete contaminant linkage involving; a contaminant, a pathway and a receptor[1].

[1] A contaminant is a substance that is in, on or under the land that has the potential to cause harm or pollution. A receptor is something that could be adversely affected by a contaminant, such as people, ecological systems, property or a water body. A pathway is a route or means by which a receptor can be exposed to, or be affected by, a contaminant.

The risk assessment process seeks to identify viable contaminant linkages and then assesses whether they pose an unacceptable risk to an identified receptor. A Conceptual Site Model is produced which summarises the most plausible contaminant linkages. Remediation and mitigation measures are used to break unacceptable contaminant linkages for example, by removing either the contaminant, the pathway or the receptor.

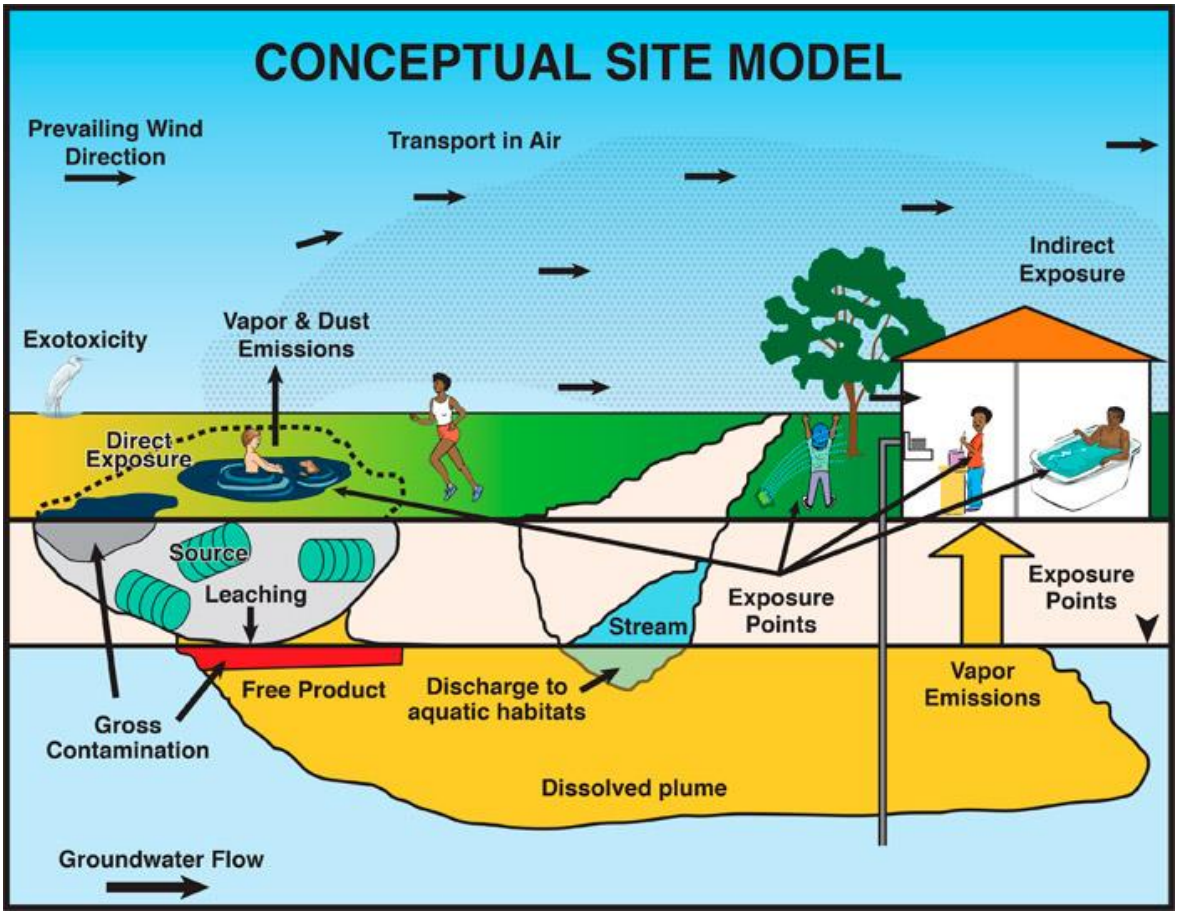

Figure 1: Example of a conceptual model

Part 2A of the Environmental Protection Act

All local authorities have a duty to identify contaminated land in its district area under Part 2A of the Environmental Protection Act 1990.

The objectives of the Part 2A regime are:

a) To identify and remove unacceptable risks to human health and the environment.
b) To seek to ensure that contaminated land is made suitable for its current use.
c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

Local authorities are required to undertake strategic and detailed inspections to identify contaminated land. Sites should be prioritised according to those that are most likely to pose the greatest risk to human health or the environment. If contaminated land is identified, the Local Authority has a duty to secure remediation, and to ensure the "polluter" pays wherever possible. The definition of contaminated land is defined in the Act as:

"Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that (a) significant harm is being caused or there is a significant possibility of such harm being caused; or (b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused"

For a site to be determined as "Contaminated Land" it must be proven that there is a clear contaminant – pathway – receptor linkage and that significant harm (or significant possibility of harm) is being caused as a result.

If land is legally determined as "Contaminated Land" a remediation strategy must be agreed and the details must be entered onto the local authority's Public Register of Contaminated Land, in accordance with the requirements of the Contaminated Land Regulations (Section 78R of the Environmental Protection Act 1990).

Part 2A is primarily used where no other options to remediate the land are available, such as voluntary action or as a requirement of redevelopment through the planning system.

The Planning System

Land contamination is a material planning consideration. This means that the impact of contamination must be taken into account in the determination of all planning applications. The National Planning Policy Framework (NPPF), as revised in July 2018 and February 2019, sets out that the planning system is central to bringing land affected by contamination back into use and puts the responsibility for ensuring safe developments onto the developer and/or landowner (Para 179).

Paragraph 170 of the revised National Planning Policy Framework (NPPF) states that; "planning policies and decisions should contribute to and enhance the natural and local environment by:

> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
>
> *f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

Importantly, the NPPF (paragraph 178) states that planning policies and decisions should ensure that:

> "a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);
>
> b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
>
> c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.

Oxford City Council works with developers to ensure that land is properly assessed and remediated in line with legal requirements and up to date guidance.

Table 1.1 summarises the interactions between the two policy mechanisms for the management of contaminated land in the UK.

Table 1.1

Part IIA	Planning
• Takes a proactive approach	• Takes a reactive approach
• Considers all sites (particularly sites without potential for redevelopment)	• Only considers sites that are being redeveloped
• Identifies "Contaminated Land" using the legal definition	• Seeks to ensure land cannot be determined as "Contaminated Land" in the future
• Only considers the current use of the site	• Considers the proposed use of the site
• Responsibility lies with the council to demonstrate that significant possibility of significant harm exists. The starting point is that the land is not contaminated and it must be proved that it is.	• Responsibility lies with the developer to demonstrate that significant harm is unlikely and the site is suitable for use. The starting point is that the land may be contaminated and it must be proved that it isn't.

Source: LQM

Environmental Sustainability in Oxford

The Environmental Sustainability service at the Council is the policy lead on carbon, energy and the environment. It is responsible for the City Council's Carbon Management plan and the city-wide collaborative programme of Net Zero Carbon Oxford. It works across the organisation to assist in carbon emission reductions alongside key regulatory functions on air quality, biodiversity, tree protection, flood mitigation and land quality. The Land Quality Strategy sets out the positive steps that are taken by the City Council to address pollution affecting land with an emphasis on dealing with land affected by contamination through the planning development control process.

This Land Quality Strategy recognises the importance of sustainability in the management and remediation of contaminated land. Re-using land and the redevelopment of brown-field sites, is by its nature a sustainable approach, and underlies the government's commitment and overall objective to bring damaged land back into beneficial use.

The City of Oxford

The impacts of contamination are affected by site specific circumstances and the interactions between the natural and built environment. To fully assess the impacts, former and current land use combined with geological, hydrogeological and ecological factors need to be understood.

Oxford, as with the rest of the UK, has seen significant land use changes, particularly with regard to industry. The Thames was linked by canal with the Coventry Canal in 1789 and this provided efficient access to fossil fuel and led to the growth of industry along Oxford's watercourses. Oxford has also been a centre for car and car parts manufacturing as well as printing and publishing. However, more recently, the manufacturing industry has relatively declined, and there has been a shift into the service industries.

Oxford covers an area of 17.6 square miles and has very high levels of housing density, yet 52% of land in the city is made up of open space. 27% of Oxford is in the Green Belt with much of this land located in the flood plain. Furthermore, extensive areas of the City are of importance for nature conservation and could potentially be affected by contamination. The Oxford Meadows Special Area of Conservation (SAC), part of which is within Oxford's boundary, is designated by the European Commission as being of European importance for its biodiversity interest. There are 12 sites designated as Sites of Special Scientific Interest (SSSIs) and many wetland habitats of importance including the City's watercourses, ponds and nationally rare fen habitat.

As part of the continuing implementation of the Oxford Core Strategy 2026 an Oxfordshire Strategic Housing Market Assessment was undertaken to identify the housing needs in the City in 2014. The evidence shows that over the period 2011-2031, there is a projected need for between 4,678 – 5,328 homes a year across Oxfordshire to meet projected demand. In Oxford, this equates to an annual average demand of 1,400 dwellings. There is, therefore, significant pressure to develop and redevelop the City. The constraints to development in Oxford mean that a significant number of housing proposals are likely to come forward on brownfield sites which may be affected by contamination.

Strategy Vision

To ensure that Oxford's residents and its natural environment are not exposed to unacceptable risks from historic contamination and to improve the quality of our environment for a sustainable future.

Strategy Aim

To deliver an efficient and effective framework for managing land affected by contamination.

Doing this by:

- **Using the development control regime wherever possible in order to assess and remediate land affected by contamination.**
- **Where this is not possible and there is a pressing need we will utilise powers under Part 2a in order to ensure contaminated land is fully remediated**

In order to realise this aim and to undertake our duties as set out in the Contaminated Land Statutory Guidance 2012, the following strategic objectives have been identified:

Strategy Objectives

- Objective 1 – To primarily deal with land contamination through the development control and building control processes wherever possible.
- Objective 2 – To implement the Part 2A detailed inspection process where strong evidence becomes available that significant harm is occurring or will occur unless the council intervene, and remediation through planning, building control or voluntary action is not possible.
- Objective 3 – To maintain a comprehensive land quality database for Oxford.
- Objective 4 – To promote the use of sustainable remediation where possible.
- Objective 5 – To act as a responsible landowner to ensure the Council achieves full legal compliance.

Objective 1

To deal with land contamination through the development control and building control processes wherever possible.

What have we achieved to date?

Oxford has seen significant industrial change to the present day. Oxford's industrial history has resulted in a substantial amount of land affected by contamination. Almost all of the major former industrial sites have been remediated and redeveloped, such as Lucy's in Jericho and the former car factory site in Cowley. The former Wolvercote Paper Mill has also been remediated and is currently being re-developed. However, there remain a significant number of smaller sites that may still have the potential to be affected by contamination.

In partnership with the other districts in Oxfordshire, the guidance document Dealing with Land Contamination During Development: A Guide for Developers has been produced for developers which sets out local requirements for contaminated land management.

Processes have been implemented within the planning department to ensure that land quality is considered at the planning application stage and to make it easier for developers to submit the appropriate information.

How will this objective be achieved?

It is expected that the development of brown field sites for housing and other uses will continue to be the main way that the remediation of sites containing contaminants is accomplished. In order to ensure we maximise the potential of the planning system, Oxford City Council will:

- Continue to provide comprehensive information to developers to ensure that they are able to meet local and national requirements.
- Engage in pre-application discussions with developers to ensure that contamination is taken into account in the early stages of development.
- Continue to secure appropriate site investigation information in the early stages of development.
- Continue to secure appropriate investigation and remediation through planning conditions.
- Ensure that land contamination is taken into account when developing planning policy documents.

Objective 2

To implement the Part 2A detailed inspection process where strong evidence becomes available that significant harm is occurring or will occur unless the council intervene, and remediation through planning, building control or voluntary action is not possible.

What have we achieved to date?

In 2001, Oxford City Council adopted a Contaminated Land Inspection Strategy as required by Part 2a of the Environmental Protection Act 1990. The legislation places a duty on local authorities to inspect their area "from time to time" for contaminated land. The statutory guidance sets out that local authorities should undertake strategic inspections of their area and detailed inspections on sites where an unacceptable risk may exist.

Strategic Inspection

In 2001 Oxford City Council undertook a strategic inspection of its district area to identify land that has the potential to be affected by historic contamination. This involved a systematic review of historic land use maps to identify sites such as landfill sites and those with a former industrial use. The process has now resulted in the derivation of a comprehensive list of potentially contaminated land but no formal determinations have been required to date. These sites are managed by the use of Geographic Information System (GIS) and are prioritised according to risk. Sites with a high priority status are earmarked as needing detailed inspection.

Detailed Inspection

The statutory guidance sets out that detailed inspection should involve carrying out investigations of identified land to obtain information on ground conditions. Risk assessment shall then be undertaken to support decisions under the Part 2A regime.

Prior to 2001 a number of sites were remediated outside of the planning process through voluntary action. Between 2001 and 2007, nine proactive detailed inspections were undertaken by the City Council with only two requiring some level of remediation. The South Oxford Adventure Playground was inspected in 2020 and no remedial treatment work was required. In addition, a review of all closed former landfill sites in Oxford City has been completed and none was identified as presenting any significant potential contamination risks. This assessment will be updated as and when any new information becomes available.

At present it is considered that there is a good knowledge of potentially contaminated sites within the city and no sites present an immediate and unacceptable risk.

How will this objective be achieved?

The 2001 Contaminated Land Inspection Strategy was updated in 2014 to reflect changes in the contaminated land regime, principally the publication of revised statutory guidance in April 2012. This 2020 updated strategy still includes the procedures involved in identifying priority sites and undertaking detailed inspections but also includes the relevant updates to the National Planning Policy Framework.

Significant resources are required to undertake detailed inspections. At present we are not aware of any unacceptable risks presenting themselves from any of our prioritised sites. The process for prioritising sites for detailed inspection is included in Appendix 1.

In line with our statutory duties Oxford City Council is committed to the following:

- Undertake regular reviews of the current prioritisation list and update preliminary risk assessments as required.
- Seek funding opportunities where possible to undertake any necessary further investigations by specialist consultants.
- Implement the detailed inspection process should any significant harm or significant possibility of significant harm become apparent.
- Maintain the Public Register of Contaminated Land, in accordance with the requirements of the Contaminated Land Regulations (Section 78R of the Environmental Protection Act 1990).
- Ensuring that the precautionary approach is taken to land contamination whilst seeking to ensure that disproportionate burdens are not placed on local communities and local businesses.

Objective 3

To maintain a comprehensive land quality database for Oxford.

What have we achieved to date?

Oxford City Council has developed Geographical Information System (GIS) layers for the management of site investigation data held on sites with known or suspected contamination. This land quality GIS is linked to a database where all site records are stored.

The land quality database and GIS system enables Oxford City Council to undertake the following:

- Prioritisation of sites for detailed investigation under Part 2A.
- Identification of potentially contaminated sites to be investigated or remediated through the planning process.
- To facilitate the provision of an environmental search service for prospective house buyers, solicitors and environmental consultants.

Historic land use information on over 800 sites has been added to the Land Quality GIS together with the first 4 editions of the Ordnance survey maps. These have been incorporated into the GIS layers along with data sets from the Environment Agency and the British Geological Survey (BGS).

How will this objective be achieved?

- Continue to store all new site investigation information in the electronic database and manage this data efficiently.
- Continue to update contaminated land GIS layers as sites are assessed and remediated or new site information becomes available, through liaison with planning, the Environment Agency and landowners.
- Identify potential opportunities to continually improve the system.

Objective 4

To promote the use of sustainable remediation where possible.

What have we achieved to date?

The most widely used method of remediation in Oxford and nationally to date has been the removal and offsite disposal of contaminated soil. Whilst this is often the most cost effective solution on smaller sites, this method contributes to sending waste to landfill. Other more sustainable methods exist for particular types of contamination, such as soil washing and bio-remediation.

Methods widely used include applying cover systems to affected areas such as clean soil layers or membranes. Whilst these methods can be effective in breaking contaminant linkages and often render sites suitable for use in accordance with current guidance, there is research to suggest that future redevelopment of these sites may again expose contamination.

In order to contribute to the sustainable development of Oxford, it is important that we encourage developers to use sustainable remediation techniques wherever possible.

How will this objective be achieved?

- Encourage developers to use best-practice techniques for remediation and identify the requirement for sustainable remediation within an updated Oxfordshire Planning Advice Note
- Signpost to best practice on our website, for example the standard methodology provided in ISO 18504:2017 and the principles and best practice promoted by SuRF-UK.
- Work towards requiring a remediation options sustainability appraisal from developers for sites where remediation is necessary.
- Work with planning policy to require high quality sustainable remediation from developers.

Objective 5

To act as a responsible landowner to ensure the Council achieves full legal compliance.

What have we achieved to date?

In 1989 Oxford City Council commissioned a review of former landfill sites in the city. It was a comprehensive piece of work that has allowed the city council to manage risks associated with those sites. A review of council owned allotments sites was also undertaken in the 1990s following some concerns about the quality of the land as a growing medium. Since then council owned land, such as former depots, have been redeveloped to housing and the necessary site investigations and remediation secured through the planning process. More recently, a further review of former council landfill sites has been completed to assess potential residual risks and confirm that they are suitable for their current use. Some of these sites are now subject to re-development proposals under the Local Plan 2016-2036.

How will this objective be achieved?

- Continue to review and assess City Council owned land as necessary to ensure any potential contaminants continue to be appropriately managed.
- Ensure that all development undertaken by the city council or on city council land seeks to maximise the use of in-situ sustainable remediation techniques to reduce the amount of waste sent to landfill.
- Ensure that the council undertakes voluntary remediation on its own land where necessary and encourages other landowners to do the same.
- Identify opportunities for bioremediation projects to improve land quality and enhance biodiversity. [2]
- Explore new and innovative best practice on remediation methods.

[2] Bioremediation is the treatment of land through the use of micro-organisms.

Risks and Implications

Communication

Communication around contamination must be done carefully to avoid unwarranted alarm and property blight issues. Land should only be described as “Contaminated Land” where it meets the legal definition and has been officially determined as such. In all other cases, where an unacceptable risk has not been identified, land should be described as having the potential to be affected by contamination.

Funding

Detailed Inspection and remediation can be very costly and local authorities have previously been able to apply for funds from Defra to cover the cost through the Land Capital Grants Scheme. This funding was available to local authorities for detailed investigation and remediation under Part 2A. However, in December 2013 Defra wrote to all local authorities in England to advise them that Defra will no longer be supporting this grant scheme. Defra’s justification for the removal of funding is based on the publication of the 2012 revised statutory guidance which enables local authorities to dismiss lower risk sites more easily. However, should a high risk site be identified as needing further investigation and/or remediation there are now limited funding options for local authorities to manage the risks efficiently. Alternative sources of funding will need to be sought for any Part 2A investigations and voluntary action encouraged.

References and Resources

Contaminated Land Statutory Guidance 2012

This document replaced Defra Circular 01/2006 and now addresses contaminated land excluding radioactively contaminated land.

Environment Agency

The land contamination pages on the Environment Agency website provide a useful source of information on land contamination assessment.

National Planning Policy Framework (revised)

Sets out the government's planning policies (including those for contaminated land) and how these are expected to be applied.

Environmental Protection Act 1990

The contaminated land regime is set out in Part2A of the Environmental Protection Act 1990.

General Guidance

https://www.gov.uk/contaminated-land

Appendix 1 - Process for Identifying sites for Detailed Inspection

The inspection and remediation of contaminated land is a progressive activity. The council identifies areas and/or sites through the strategic inspection process where a more detailed study may be required. The process for identifying and prioritising sites has been developed using a GIS based site prioritisation tool.

In summary, for contaminated land to be identified the following are pre-requisites:

- One or more contaminant substances present, and;
- One or more specified receptors present, and;
- At least one plausible pathway between contaminant and receptor, (suggesting a contaminant linkage exists) and;
- A likelihood that the contaminant linkage will result in significant harm to one of the specified receptors or, the significant pollution of controlled waters.

Strategic Inspection

It is a requirement of the strategy that potentially contaminated land shall, prior to detailed investigation, be listed and categorised according to a preliminary assessment of risk. The method used is based on that described in DETR Contaminated Land Research Report 6, 'Prioritisation & Categorisation Procedure for sites which may be Contaminated' (CLR 6). This is to ensure all further investigative work relates directly to seriousness of the potential risk and therefore the most pressing problems are identified and quantified first. CLR 6 has four Priority Categories which assist in the prioritisation process. These are outlined in the table below.

The Environment Agency will be consulted in respect to the priorities concerning controlled waters. Likewise Natural England and others who have specific interest will be consulted on ecologically significant issues.

Priority Category 1	Site likely not to be suitable for present use and environmental setting. Contaminants probably or certainly present and very likely to have an unacceptable impact on key targets. Urgent assessment action needed in the short term.
Priority Category 2	Site may not be suitable for present use and environmental setting. Contaminants probably or certainly present and likely to have an unacceptable impact on key targets. Assessment action needed in the medium term.
Priority Category 3	Site considered suitable for present use and environmental setting. Contaminants may be present but unlikely to have an unacceptable impact on key targets. Assessment action unlikely to be needed whilst the site remains in present use or otherwise remains undisturbed.
Priority Category 4	Site considered suitable for present use and environmental setting. Contaminants may be present but very unlikely to have an unacceptable impact on key targets. No assessment action needed while site remains in present use or undisturbed.

This preliminary risk assessment process seeks to identify contaminant-pathway-receptor linkages. Initial research may identify sites where either particular contaminants are likely or known to exist, or sensitive receptors are known to exist. No on-site assessment will be undertaken unless both are suspected or confirmed. Where evidence is inconclusive the situation will be kept under review.

As Priority Category 1 sites are likely not to be suitable for their present use, these will be investigated as soon as possible after they are identified.

It must be understood that the assessments at this preliminary stage are made on a limited amount of incomplete basic data and information, such as old surveys, maps, geological information and previous site investigation information where available etc. As more knowledge of the site is obtained, these assessments are revised and their Priority Category may change. The assessment of a site as Priority Category 1 does not necessarily infer the existence of a significant risk to one of the specified receptors.

Detailed Inspection

Where evaluation of all available data suggests a significant contaminant linkage may exist, a requirement to consider determination of a site or part of a site as contaminated land under Part2A may exist. The statutory guidance is the principle point of reference in this regard.

Following the strategic inspection process, sites can become candidates for detailed inspection. In every case a detailed inspection is carried out by a, “suitable person”, adequately qualified to undertake the work. Discretion is used at all times to minimise the effect on occupiers of the land.

To ensure the most appropriate technical procedures are employed the Council will have regard to the most up to date guidance available. Reference will be made to the CIRIA series and the CLR documents and the BS Code of Practice for Site investigation. In particular if contractors or consultants are appointed they should be quality assured and have appropriate Professional Indemnity Insurance.

Determining if land is contaminated

There are four possible grounds for determining if land is contaminated:

1. Significant harm is being caused,
2. There is a significant possibility of significant harm being caused,
3. Significant Pollution of controlled waters is being caused,
4. Significant Pollution of controlled waters is likely to be caused.

In making any determination the Council will take all relevant information into account, carry out appropriate scientific assessments, and act in accordance with the statutory guidance and its categorising principles. The determination will identify all three elements of a contaminant linkage and explain their significance.

Once an area of land has been determined as likely to be contaminated land by statutory definition, the Council will prepare a Risk Summary as required by the statutory guidance.

The Council will then formally notify in writing all relevant parties that the land has been declared contaminated, these include:

- the owner(s),
- the occupier(s),
- those liable for remediation ('appropriate persons' in the statutory guidance),
- the Environment Agency who maintain a National database.

Maintaining the public register

Should land be determined as "Contaminated Land" a remediation strategy should be agreed and the details must be entered onto Oxford City Council's Contaminated Land Register.