

PPS23 Annex 2: Development on Land Affected by Contamination

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Foreword

This Annex to Planning Policy Statement (PPS) 23 *Planning and Pollution Control* expands on the policy considerations the Government expects Regional Planning Bodies (RPBs) and Local Planning Authorities (LPA) to have regard to in preparing policies in development plans and taking decisions on applications in relation to development on land affected by contamination. It gives necessary legislative and technical background and some examples of good practice to assist authorities in implementing the policies contained in PPS23.

Introduction

2.1 A fundamental principle of sustainable development is that the condition of land, its use and its development should be protected from potential hazards. Without appropriate action, the presence of substances with potential to cause harm to human health, property and the wider environment may severely limit or altogether preclude development and the beneficial use of land. The real or perceived costs of action to address the risks arising could act as significant barriers to successful development but a considered and informed approach can minimise such barriers. Mitigation problems are compounded if the presence of harmful substances is not identified until development is already under way.

Purpose And Scope Of This Annex

2.2 This Annex applies in England. It explains the legislative background to the consideration of development on land affected by contamination. It explains the relationship of the contaminated land regime under Part IIA of the Environmental Protection Act 1990 (EPA) to the planning system. The broad approach, concepts and principles of that regime with respect to identifying risks from land contamination and dealing with them should be applied to plan-making and the determination of planning applications. The aim is to ensure that planners, developers and their advisers address land contamination issues at the appropriate stage and consistently with the arrangements under Part IIA. It briefly refers to the technical issues involved and indicates where there are relevant sources of further information.

2.3 This Annex provides advice to Regional Planning Bodies (RPBs), Local Planning Authorities (LPAs), developers and other interested parties on the issues relevant to development and use of land that may be affected by contamination and the extent of controls operated through planning and environmental legislation. It covers both contamination due to human activities and natural sources. Appendix 2A gives some background information on contamination and its potential effects. This Annex advises on the key parties and their roles in the development process. It also sets out good practice for LPAs in assessing and dealing with land contamination issues. It should be read in conjunction with the core policies in PPS23 *Planning and Pollution Control* and has the same status as a material planning consideration.

The Contaminated Land Regime

2.4 Part IIA was introduced into the EPA by the Environment Act 1995 to help deal with the substantial legacy of contaminated land. Part IIA, its accompanying regulations and Statutory Guidance contained in DETR Circular 02/2000 *Contaminated Land* came into force in England on 1 April 2000. Part IIA included the first statutory definition of "contaminated land" and conferred new responsibilities and powers on local authorities and the Environment Agency to identify contaminated land and ensure that it is dealt with.

2.5 For the purposes of Part IIA, contaminated land is defined 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) *pollution of controlled waters is being, or is likely to be caused*¹.

2.6 Part IIA addresses "unacceptable risk". The approach is based upon the principles of risk assessment, including the concept of a contaminant, a receptor and a pathway, which, if combined, form a pollutant linkage. These and other key terms are defined in Part IIA and in the statutory guidance (DETR Circular 02/2000). A significant pollutant linkage forms the basis of a formal determination that land is contaminated land.

2.7 For each receptor, a description of the harm that is to be regarded as significant harm for the purposes of the regime is contained in the statutory guidance. Receptors include human beings, ecological systems in certain protected locations (e.g. sites of special scientific interest), property such as crops, livestock, domesticated animals, animals maintained for sporting purposes and buildings and their services. Significant harm includes in appropriate cases death, disease, serious injury, specified ecological system effects, substantial diminution of crop yield and structural building failure. Pollution of controlled waters arising from the contaminated condition of land is also included in the regime.

2.8 Under Part IIA, local authorities (usually environmental health departments) have a duty to:

- inspect their areas and identify contaminated land as defined in the Act;
- establish the remediation required and who should be responsible for it; and
- ensure that remediation takes place, if necessary by serving a remediation notice; and
- record certain information on a public register.

Remediation notices are not served where a local authority is satisfied that a remediation statement provides that appropriate remediation will be achieved by other means, including by development proposals.

2.9 The Environment Agency may, in appropriate cases, assist local authorities in identifying contaminated land (particularly in cases where water pollution is involved) and provide site-specific guidance to those authorities. It will act as the enforcing authority for special sites, as defined in the Regulations, and publish periodic reports on contaminated land.

2.10 The potential for new contamination to arise is generally controlled through other environmental protection legislation, including Parts I and II of the EPA 1990 and the Pollution Prevention and Control Act 1999 (PPC Act). Part II of the EPA 1990 covers the handling, transport, storage, recovery and disposal of wastes (see PPG10 *Planning and Waste Management*). The PPC Act 1999 and PPC Regulations 2000 transpose the EC Directive on Integrated Pollution Prevention and Control (96/61/EC). The PPC regime covers more types of installations than the previous integrated pollution control regime under Part I of the EPA 1990. Among other matters, it controls emissions to air, water and land, and site restoration to the baseline condition on cessation of the authorised activity (see PPS23 Annex 1 - *Pollution Control, Air and Water Quality*).

Radioactively Contaminated Land

2.11 Radioactive substances are present in the environment as a result of natural processes and human activities. The Radioactive Substances Act 1993 (RSA) ensures the control of radiation exposure resulting from radioactive wastes entering the environment through the application of a prior permission regime administered by the Environment Agency. This regime helps prevent future radioactive contamination of land. Part IIA of the EPA 1990 does not currently apply to radioactivity.

¹ Section 86 of the Water Act 2003 will amend the definition in relation to water, when fully implemented.

The Government has proposed to extend the regime to deal with the legacy of radioactively-contaminated land, with enforcement by the Environment Agency. The Agency has produced advice² and should always be consulted where land is known or suspected to be contaminated with radioactive substances.

Relationship between Planning Control and the Contaminated Land Regime

2.12 The contaminated land regime in Part IIA was introduced specifically to address the historical legacy of land contamination. It focuses on the identification and remediation of land which is in such a condition by reason of contamination that it gives rise to significant harm or the significant possibility of significant harm to certain named receptors, or gives rise to pollution of controlled waters or the likelihood of such pollution. It applies where there is unacceptable risk, assessed on the basis of the current use (including any use that already has the benefit of planning permission but might not yet be implemented, including development permitted under the General Permitted Development Order 1995) and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission. This is primarily a task for the planning system, which aims to control development and land use in the future. Consequently, for planning purposes, the assessment of risks arising from contamination and remediation requirements should be considered on the basis of both the current use and circumstances and its proposed new use. In most other respects, however, the underlying approach to identifying and dealing with risk, and the overall policy objective of safeguarding human health and the environment, are similar. A wider range of contamination and receptors is relevant to planning because of its wider spatial perspective but the degree of harm or pollution relevant to planning and the approach to remediation are essentially the same, i.e. unacceptable risk in planning terms includes the risks addressed by Part IIA of the EPA 1990.

2.13 To avoid confusion with the statutory term "contaminated land" and its definition and to reflect the different context and scope of planning control, this Annex uses the wider term - "land affected by contamination". This is intended to cover all cases where the actual or suspected presence of substances in, on or under the land may cause risks to people, property, human activities or the environment, regardless of whether or not the land meets the statutory definition in Part IIA.

2.14 The Part IIA regime was designed and intended to encourage voluntary remediation rather than regulatory action and to work with the established role of planning and building control in those cases where the land is suitable for or scheduled for redevelopment. Government policy recognises that voluntary remediation will often be funded by redevelopment and that the planning system can and should secure appropriate investigation and remediation of land. DETR Circular 02/2000 makes clear that, where new development is taking place, it is the developer's responsibility to carry out the necessary remediation and that, in most cases, the enforcement of remediation requirements will be through planning conditions and building control rather than through a remediation notice under Part IIA.

2.15 In some cases, information about the condition of the land and the risks may emerge in connection with a planning application or its implementation. A question may then arise as to whether and when Part IIA should be applied. The local authority will need to consider this information in accordance with its strategic approach under Part IIA to the identification of land that merits detailed inspection which is a prerequisite to determination as contaminated land. It may conclude that the condition of the land is being or will be investigated and that any necessary remediation will be carried out on an appropriate timescale as part of the development proposed.

2.16 Where contaminated land is identified and determined as such under Part IIA but the enforcing authority (the local authority or the Environment Agency, in the case of special sites) is satisfied that

² Guidance on the Characterisation and Remediation of Radioactively Contaminated Land (May 2002)

appropriate actions are being or will be undertaken by way of remediation without the service of a remediation notice, it cannot serve such a notice. Instead a remediation statement can be agreed and placed in the public register and kept under review.

Responsibilities of the Parties in the Development Process

Role of the Owner/Developer

2.17 Where development is proposed, the developer is responsible for ensuring that development is safe and suitable for use for the purpose for which it is intended. The developer is thus responsible for determining whether land is suitable for a particular development or can be made so by remedial action. In particular, the developer should carry out an adequate investigation to inform a risk assessment to determine:

- whether the land in question is already affected by contamination through source - pathway - receptor pollutant linkages and how those linkages are represented in a conceptual model;
- whether the development proposed will create new linkages, e.g. new pathways by which existing contaminants might reach existing or proposed receptors and whether it will introduce new vulnerable receptors; and
- what action is needed to break those linkages and avoid new ones, deal with any unacceptable risks and enable safe development and future occupancy of the site and neighbouring land.

2.18 A potential developer will need to satisfy the local authority that unacceptable risk from contamination will be successfully addressed through remediation without undue environmental impact during and following the development. In doing so, a developer should be aware that actions or omissions on his part could lead to liability being incurred under Part IIA, e.g. where development fails to address an existing unacceptable risk or creates such a risk by introducing a new receptor or pathway or, when it is implemented, under the Environmental Liability Directive (2004/35/EC). Where an agreed remediation scheme includes future monitoring and maintenance schemes, arrangements will need to be made to ensure that any subsequent owner is fully aware of these requirements and assumes ongoing responsibilities that run with the land.

Role of the Local Authority and Regional Planning Bodies

2.19 In most cases, local authorities are the enforcing authorities for the contaminated land regime under Part IIA of the EPA 1990. They have a duty to identify contaminated land within their area and, except for certain categories, to decide what remediation is required and ensure that it takes place.

2.20 LPAs are responsible under the Planning Acts for the preparation of local development frameworks and for the control of development. In doing so, they have a duty to take account of all material considerations, including contamination. It is their role to plan for land uses that are appropriate in the light of all the relevant circumstances, including known or suspected contamination and to determine applications, including applying and enforcing any necessary conditions. Such conditions may require that land is remediated in the course of development to an appropriate standard, taking account of its intended use, and that, if necessary, it is properly maintained thereafter.

2.21 RPBs are responsible for the preparation of the statutory regional spatial strategies (RSSs) with which the local development frameworks must conform.

2.22 The building control departments of local authorities (along with the private sector approved inspectors) are responsible for the operation and enforcement of the Building Regulations 2000 to protect the health, safety and welfare of people in and around buildings. This includes the requirements to protect buildings from the effects of contamination. It is expected that amendments to Part C of the Building Regulations 2000 will come into force on 1 December 2004. One of these amendments makes particular reference to resistance to contaminants. It is proposed that the

requirements for dealing with contaminants should apply to the building and any land associated with the building and to all changes of use to residential purposes.

Role of the Environment Agency

2.23 The Environment Agency is the enforcing authority under Part IIA for contaminated land, which has been designated as a "special site". It is also the enforcing authority for control under Part II of the EPA 1990, for Part A(1) installations under the PPC Regulations 2000, the RSA 1993 and other legislation which help to prevent future contamination of land as well as for environmental permitting that may be necessary for remediation activities. The Agency is responsible for the protection of controlled waters under the Water Resources Act 1991 and the Water Industry Act 1991. It is the relevant authority under the Groundwater Regulations 1988, which implement the EC Groundwater Directive (80/68/EC), and, as competent authority, is responsible under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 that transpose the EC Water Framework Directive (2000/60/EC) for:

- the characterisation of river basin districts;
- identifying bodies of water used for the abstraction of drinking water;
- preparing and keeping up-to-date a register of protected areas;
- establishing and implementing programmes for monitoring water status;
- preparing and submitting to the appropriate authority (i.e. Secretary of State for Environment, Food and Rural Affairs and/or the Welsh Assembly Government) environmental objectives for each river basin district and programmes of measures to achieve them; and
- preparing and submitting to the appropriate authority's River Basin Management Plans.

2.24 At the national level, the Agency carries out technical research and publishes scientific and technical advice relevant to land contamination (Appendix 2B includes some current publications). The Agency is a statutory consultee under the General Development Procedure Order 1995 on certain planning applications, e.g. for development within 250m of notified landfill sites and potentially polluting development that may affect controlled waters. It is proposed to extend the statutory requirement to consult the Environment Agency to certain land affected by contamination to ensure that issues related to the pollution of controlled waters are appropriately considered in planning decisions.

Planning Control

2.25 In so far as it affects land use and development, the quality of land is a material planning consideration in preparing development plans (Regional Spatial Strategies (RSSs) and Local Development Documents (LDDs)) as well as in the determination of planning applications.

2.26 When considering development on land affected by contamination, the principal planning objective is to ensure that any unacceptable risks to human health, buildings and other property and the natural and historical environment from the contaminated condition of land are identified so that appropriate action can be considered and then taken to address those risks. Achievement of this objective should assist in providing the necessary confidence to owners and occupiers of land, after development, about its condition and hence its standing in relation to relevant environmental protection regimes including Part IIA of the EPA 1990.

2.27 On a precautionary basis, the possibility of contamination should be assumed when considering both development plans and individual planning applications in relation to all land subject to or adjacent to previous industrial use (see Table 2.1) and also where uses are being considered that are particularly sensitive to contamination - e.g. housing, schools, hospitals, children's play areas.

Development Plans

2.28 RSSs have a positive role in identifying strategies and priority areas for regeneration within the regional context. In preparing RSSs, RPBs should take account of the likelihood of large-scale contamination in certain parts of their regions alongside other material considerations. While individual sites would not be identified in the RSS, widespread concentrations of previously developed land are likely to be regarded as high priority for redevelopment. Many of these concentrations arise from industrial development, which may have left a legacy of contamination. This should be a focus for more detailed consideration by LPAs. Industrial sites known to have been used by the industries listed in Table 2.1 should be given particular attention but all former industrial land should be regarded as potentially contaminated.

2.29 LDDs provide a prime opportunity to steer appropriate development onto previously developed land within the context of the wider planning policies within an authority area. As well as protecting greenfield sites from development, this can help to bring about progressive improvement in the condition of land as a whole, provided that any contamination is identified and properly dealt with and the development is carried out in an appropriate manner. In preparing and revising LDDs, therefore, LPAs need to take into account any potential implications of land contamination. They should include appropriate policies for the remediation of contamination where it is known or suspected to exist and for dealing with the implications of contamination for other policies and proposals. In particular, LPAs should recognise that the development process is often the most effective way of achieving action to remove unacceptable risks arising from the contaminated state of land. Where action area plans are prepared that include significant tracts of previously developed land, LPAs should consider the need for a phased approach to dealing with potential contamination issues.

2.30 Information of the types described in paragraph 2.41 should be used to inform the drawing up of LDDs. Contamination may add to the difficulty and cost of developing a site or even preclude certain uses. In particular, the remediation of polluted groundwater can be expensive and more time-consuming than the cleaning-up or removal of contaminated soil. The standard of remediation for water pollution is less dependent on land use and addressing water pollution issues may require a higher standard of remediation than would the land use proposed.

2.31 Identification of potential problems at an early stage can enable a more positive approach to bringing forward development, thereby leading to a higher value land use, which in turn, could better cover the costs of remediation. Early attention to the contamination issues can help in locating development that is less sensitive to contamination on areas where the contaminated state of the land is likely to be more difficult to address. Proposals for particular types of development in different parts of an authority area need to take account of potential contamination alongside other material considerations. They need also to take into account issues of sustainability, disturbance to existing occupiers and environmental issues (dust, noise, odours etc.) which might arise from the contamination.

2.32 Potentially hazardous substances, such as radon, methane or elevated concentrations of metallic elements may also be present in the ground due to the underlying geology. Since these may pose a risk to human health or to the environment, their presence is a material planning consideration. Guidance on areas affected by radon and the control measures available for new development is contained in BR211 *Radon: Guidance on Protective Measures for New Dwellings*³. Part C of the Building Regulations 2000 gives further advice on the requirements to secure reasonable standards of health and safety for persons in and around buildings in relation to land contamination. LPAs should include appropriate information on both naturally-occurring and industrial contaminants in the land condition and quality section of their LDDs.

³ Building Research Establishment, 1999. BR211 Radon: Guidance on Protective Measures for New Dwellings.

Development Control

2.33 Where development is proposed on land that is or may be affected by contamination, an assessment of risk should be carried out by the applicant for consideration by the LPA before the application is determined. Any existing or new unacceptable risks should be identified and proposals made to deal with them effectively as part of the development process. It is proposed to introduce a standard application form for all planning applications in England. Subject to the results of consultation, an assessment of contamination and historical uses of land is likely to be one of the supporting documents that could accompany the form in appropriate cases. LPAs should, in any event, satisfy themselves as soon as practicable that intending developers have addressed effectively the issue of potential contamination in bringing forward their proposals.

Before an Application is Made

2.34 Where practicable, proposers of development on potentially contaminated sites should arrange pre-application discussions with the LPA and other regulators, including the Environmental Health and Building Control departments of the local authority, the LPA's archaeological and nature conservation advisers and the Environment Agency (where pollution of controlled water and the waste management implications of land contamination are likely to be issues). Such discussions can help to identify the likelihood and possible extent and nature of contamination and its implications for the development being considered. They can also assist in scoping any necessary environmental impact assessment and identify the information that will be required by the LPA to reach a decision on the application when it is submitted. LPAs should advise intending developers to undertake these steps where they appear necessary but have not yet been addressed.

When to Consider Contamination

2.35 Less stringent pollution control and less careful site management in the past has led to a substantial legacy of sites contaminated by former uses. While modern pollution control legislation and good practice in site management have largely reduced the impact of current industrial activity and help to prevent new contamination, a wide range of commercial and other activity has had and still would have the potential to cause contamination. Table 2.1 which is not intended to be comprehensive, gives some common examples of potentially contaminating uses of land. Further details are contained in the Department of the Environment Industry Profiles (listed at www.defra.gov.uk/environment/landliability/pubs.htm). However, not all sites that have been previously used by particular industries are affected by contamination and sites occupied by similar uses will not necessarily contain the same contaminants or similar concentrations of contaminants. Some may have been remediated previously, to varying standards.

2.36 LPAs and intending developers should recognise that contamination may pose problems on land other than the originating site. For example, contaminants may migrate or be transported by wind or water onto land that has no specific association with the contaminating industrial use. Contaminants may also be present on land where there are no specific records of contaminating uses, such as in made ground where unsuitable fill has been used.

Table 2.1: Examples of Potentially Contaminating Uses of Land and Situations Where Land may be Affected by Contamination

A wide range of industries may historically have contaminated, or have the potential to contaminate the land they are sited upon (and neighbouring land) - The DOE Industry Profiles give further details.

- Smelters, foundries, steel works, metal processing & finishing works
- Coal & mineral mining & processing, both deep mines and opencast
- Heavy engineering & engineering works, e.g. car manufacture, shipbuilding
- Military/defence related activities
- Electrical & electronic equipment manufacture & repair
- Gasworks, coal carbonisation plants, power stations
- Oil refineries, petroleum storage & distribution sites
- Manufacture & use of asbestos, cement, lime & gypsum
- Manufacture of organic & inorganic chemicals, including pesticides, acids/alkalis, pharmaceuticals, solvents, paints, detergents and cosmetics
- Rubber industry, including tyre manufacture
- Munitions & explosives production, testing & storage sites
- Glass making & ceramics manufacture
- Textile industry, including tanning & dyestuffs
- Paper & pulp manufacture, printing works & photographic processing
- Timber treatment
- Food processing industry & catering establishments
- Railway depots, dockyards (including filled dock basins), garages, road haulage depots, airports
- Landfill, storage & incineration of waste
- Sewage works, farms, stables & kennels
- Abattoirs, animal waste processing & burial of diseased livestock
- Scrap yards
- Dry cleaning premises
- All types of laboratories

Other uses & types of land that might be contaminated include:

- Radioactive substances used in industrial activities not mentioned above - e.g. gas mantle production, luminising works
- Burial sites & graveyards
- Agriculture - excessive use or spills of pesticides, herbicides, fungicides, sewage sludge & farm waste disposal
- Naturally-occurring radioactivity, including radon
- Naturally-occurring elevated concentrations of metals and other substances
- Methane & carbon dioxide production & emissions in coal mining areas, wetlands, peat moors or former wetlands

2.37 While the most severe examples of contamination are often found in developed or former industrial areas, rural and urban fringe areas can also be affected e.g. by inappropriate applications to land of such materials as sludges etc. by the use of land for activities such as storing and reprocessing scrap vehicles or other wastes, by closed landfills and abandoned mines and by the effects of flood events - e.g. downstream of old mining areas. In addition, some areas may be affected by natural occurrence of potentially hazardous substances, such as arsenic, lead or copper, which are the product of the underlying geology and bear little relation to previous or current land use.

2.38 Only a specific investigation can establish the actual level and types of contamination at a particular site. Such an investigation will also need to consider the possibility that new pathways may be introduced as a result of development activities, such as piling, drain laying and trenches for services and that new receptors may be introduced by the development proposed.

2.39 The presence of contamination, including quite hazardous substances, in, on or under land does not, by itself, necessarily present an unacceptable risk, nor therefore necessarily require action. Risk arises where there is a pollutant linkage - i.e. a pathway between a contaminant, or source, with a potential to cause harm or pollution of controlled waters and a vulnerable receptor, which is capable of being harmed by the contaminant. The hazards may be chemical (toxic, carcinogenic), biological (pathogens), radioactive or physical (asphyxial, explosive). Table 2.2 gives some examples of the risks from contamination to human health, property and the environment. Land contamination can also affect the general environmental quality, amenity and economic capacity of an area.

2.40 Because of the widespread potential occurrence of contamination, the possibility should always be considered, regardless of past land use, when development is proposed involving or introducing a particularly sensitive use such as housing with gardens, schools, nurseries or allotments. LPAs should, pay particular attention to the condition of the site and of neighbouring land where the proposed use would be particularly vulnerable to contamination, where the current circumstances or past use suggest that contamination may be present or where it has other relevant information. Full account should be taken of whether the proposed use or development is likely to be adversely affected by contamination. For example, the addition of a new storey to an existing building is unlikely to be significantly affected by contamination whereas lateral expansion onto former industrial land potentially carries a higher risk and building extensions or undertaking landscaping that disturbs the ground may breach protecting layers.

2.41 In identifying where contamination needs to be considered, LPAs should examine their own and other local sources of information about the condition and history of the land as well as information from applicants. This includes their own LDDs and the survey information on which they were based together with information held and collected in connection with Part IIA of the EPA 1990, or other statutory functions. In particular, the results of local authority activity under Part IIA of the EPA 1990 should include sites determined as contaminated land, sites where detailed inspection is under way or envisaged and sites that have been inspected and not determined as contaminated land but where the

introduction by development of a new pathway or receptor or other change in circumstances could lead to them being so determined. Other potentially useful sources of information within the local authority include records on planning, environmental health, land reclamation, regeneration, building control, highways and engineering, historic building, conservation, archaeological sites and monuments and biological record centres. LPAs should also examine any readily-available information on previous uses contained in the National Land Use Database, in commercial databases and land condition records or in records held by the British Geological Survey (e.g. location of made ground, the results of broadscale geochemical surveys or radon potential maps).

Table 2.2: Examples of Pathways and Effects from Land Contamination

Human Health
1. <i>Uptake of contaminants by food plants grown in contaminated soil</i> - heavy metals (e.g. cadmium, lead) and persistent organic pollutants including certain pesticides and veterinary products may result in an accumulation in food plants to concentrations where they exceed legal limits and/or may pose a hazard to human health. Uptake will depend on concentration in soil, its chemical form, soil pH, plant species and prominence in diet.
2. <i>Ingestion and inhalation</i> - substances may be ingested directly by young children playing on contaminated soil, by eating plants which have absorbed metals or are contaminated with soil or dust. Ingestion may also occur via contaminated water supplies. Metals, some organic materials and radioactive substances may be inhaled from dusts and soils.
3. <i>Skin contact</i> - soil containing tars, oils and corrosive substances may cause irritation to the skin through direct contact. Some substances (e.g. phenols) may be absorbed into the body through the skin or through cuts and abrasions.
4. <i>Irradiation</i> - As well as being inhaled and absorbed through the skin, radioactive materials emitting gamma rays can cause a radiation response at a distance from the material itself.
5. <i>Fire and explosion</i> - materials such as coal, coke particles, oil, tar, pitch, rubber, plastic and domestic waste are all combustible. If heated by contact with buried power cables or careless disposal of hot ashes they may ignite and burn underground. Both underground fires and biodegradation of organic materials may produce toxic or flammable gases. Methane and other gases may explode if allowed to accumulate in confined spaces.
Buildings
1. <i>Fire and explosion</i> - underground fires may cause ground subsidence and cause structural damage to buildings. Accumulations of flammable gases in confined space leads to a risk of explosion. Underground fires may damage building services.
2. <i>Chemical attack on building materials and services</i> - sulphates may attack concrete structures. Acids, oils and tarry substances may accelerate corrosion of metals or attack plastics, rubber and other polymeric materials used in pipework and service conduits or as jointing seals and protective coatings to concrete and metals.
3. <i>Physical</i> - blast-furnace and steel-making slag (and some natural materials) may expand if ground conditions are changed by development. Degradation of fills may cause settlement and voids in buried tanks and drums may collapse as corrosion occurs or under loading from construction traffic.
Natural Environment
1. <i>Phytotoxicity (prevention/inhibition of plant growth)</i> - some metals essential for plant growth at low levels are phytotoxic at higher concentrations. Methane and other gases may give rise to phytotoxic effects by depleting the oxygen content in the root zone.

2. *Contamination of water resources* - soil has a limited capacity to absorb, degrade or attenuate the effects of pollutants. When this is exceeded, polluting substances may enter into surface and groundwaters.
3. *Ecotoxicological effects* - contaminants in soil may affect microbial, animal and plant populations. Ecosystems or individual species on the site, in surface waters or areas affected by migration from the site may be affected.

Information Required from the Applicant

2.42 Where contamination is known or suspected or the proposed use would be particularly vulnerable, LPAs should require the applicant to provide with the application such information as is necessary to determine whether the proposed development can proceed. In doing so, they should adopt a balanced approach. It would be disproportionate and unnecessary to require every applicant to carry out a detailed and expensive site investigation. However, sufficient information should be required to determine the existence or otherwise of contamination, its nature and the risks it may pose and whether these can be satisfactorily reduced to an acceptable level. This will require a risk assessment that identifies the sources, pathways and receptors (pollutant linkages). A phased or tiered approach is recommended in the Defra/Environment Agency's *Model Procedures for the Management of Contamination* (CLR11). The initial provision of this information is essential to determine whether further more detailed investigation is required.

2.43 The minimum requirement that should be provided by an applicant is the report of a desk study and site reconnaissance (walk-over). This will, in some cases, be sufficient to develop a conceptual model of the source of contamination and pathways by which it might reach vulnerable receptors as well as the means by which the identified pollutant linkages can be broken. While they may provide a useful indication of the possible presence of contamination, the commercial searches provided on the internet will not be sufficient to establish the presence or absence of contamination. Where one exists, a Land Condition Record (LCR) provides a useful starting point. The LCR is an objective record of the physical and chemical nature of land contamination completed to a standard format by an accredited professional on behalf of a landowner. However, it will not fully meet the requirements that should accompany a planning application since it provides only factual information. Interpretation is necessary to develop a conceptual model, which identifies plausible pollutant linkages as a basis for assessing the risks and appraising the options for remediation.

2.44 The desk study and site reconnaissance will assist in determining the need for and scope of further investigation, the problems that may require remediation and whether remediation can be secured by means of planning conditions. It may provide sufficient evidence that the planning decision can be made based on an appropriate conceptual model and the LPA being satisfied that there is a viable remedial solution. However, further investigations and risk assessment will be needed unless this initial assessment clearly and reliably demonstrates that the risk from contamination is acceptable. Where the desk study and site reconnaissance does not provide sufficient information to assess the risks and appraise remedial options, further investigations will need to be carried out before the application is determined. LPAs should seek evidence to demonstrate that such investigations have been carried out to an acceptable professional standard. Advice on the assessment and development of land affected by contamination is contained in guidance published by the British Urban Regeneration Association (BURA), the National House Building Council (NHBC) and the Environment Agency⁴. The BURA Guide includes checklists for the desk study, site investigation and remediation.

⁴ BURA, 2001 – Breaking New Ground: BURA Guide to Contaminated Land Assessment and Development
 NHBC/Environment Agency, 2000 – Guidance for the Safe Development of Housing on Land Affected by Contamination
 Defra/Environment Agency – Model procedures for the Management of Contaminated Land.

2.45 All investigations of land potentially affected by contamination should be carried out by or under the direction of a suitably qualified competent person and in accordance with BS10175 (2001) *Code of Practice for the Investigation of Potentially Contaminated Sites*. The competent person would normally be expected to be a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, Geological Society of London, Royal Institution of Chartered Surveyors, Institution of Environmental Management) and also have relevant experience of investigating contaminated sites. The Specialist in Land Condition (SiLC) qualification administered by the Institute of Environmental Management provides an accredited status for those responsible for signing off LCRs (see www.silc.org.uk). Considerable effort and expense can be saved if an applicant and LPA agree to place reliance on the expertise of a single impartial expert of this kind with regard to technical matters. Environmental Impact Assessment

2.46 Environmental Impact Assessment (EIA) applies to development that is subject to the Town and Country Planning (Assessment of Environmental Effects) (England and Wales) Regulations 1999 as amended by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2001. Detailed guidance to the Regulations and procedures is given in DETR Circular 02/99 *Environmental Impact Assessment*. This sets out the criteria for development that is subject to mandatory EIA and the factors to be considered in deciding whether it should apply to other development proposals. Where an EIA is required, the applicant must submit an Environmental Statement (ES) in support of the planning application. Many of the characteristics of land affected by contamination and the remediation methods that are used will make it more likely that an EIA is required but the decision can only be taken in the light of the particular circumstances.

2.47 An ES should ensure that the likely significant environmental effects of the proposed development and the measures proposed to mitigate those effects are fully understood and are taken into account before development is allowed to proceed. The ES can only relate to the requirements of the Regulations. It may not therefore provide comprehensive information about the existing condition of the land. Such information would be provided only to the extent that it is relevant to the environmental effects of the development itself or to the means by which the development is to be carried out. An ES is, therefore, by itself, no guarantee that the potential for contamination at a site to affect the proposed development has been fully assessed.

2.48 For example, a proposal to cover a site with inert material to isolate the surface from underlying contaminants and allow development to proceed would not necessarily have significant environmental effects. However, it would not deal with what may already be significant ongoing pollution of groundwater arising from substances migrating from the contaminated materials into the saturated zone or other water resources. Such pollution could result in the land being identified as contaminated under Part IIA of the EPA 1990, which would be a material planning consideration not covered by the ES. An ES may not, therefore, be the sole source of information on the consequences of development of a potentially contaminated site. It is necessary to consider not only the effects of the proposed development but also to understand the implications of the existing condition of the site.

Determining Applications

2.49 In determining applications, the LPA will need to be satisfied that the development does not create or allow the continuation of unacceptable risk arising from the condition of the land in question or from adjoining land. In particular, it should satisfy itself that existing significant pollutant linkages will be broken by removing the source, blocking the pathway or removing receptors and that the development will not create new pollutant linkages by changing or creating exposure pathways e.g. creating new pathways to groundwater by site investigation drilling or piling.

2.50 For land use planning purposes, what constitutes an unacceptable risk is wider than for Part IIA purposes since planning is concerned with proposed development and future use and thus with both existing and new risks. In addition, the range of receptors is wider than under Part IIA and includes, for example, general fauna and flora, landscape and amenity. Radioactivity and other forms or sources of contamination not covered by Part IIA also need to be considered. In other respects, however, risks

should be assessed and acted upon in accordance with Part IIA principles. When remediation of land affected by contamination is achieved by means of development, these differences between the two regimes should be recognised and allowed for by developers, their advisers and by LPAs.

2.51 The standard of remediation to be achieved through the grant of planning permission for new development (including permission for land remediation activities) is the removal of unacceptable risk and making the site suitable for its new use, including the removal of existing pollutant linkages. All receptors relevant to the site should be protected to an appropriate standard. As a minimum, after carrying out the development and commencement of its use, the land should not be capable of being determined as contaminated land under Part IIA of the EPA 1990.

2.52 Where the land is determined as contaminated land under Part IIA of the EPA 1990 and remediation is undertaken without a remediation notice and in accordance with a planning permission, a Remediation Statement will be required under that Act. Remediation must meet the requirements of both Part IIA and the planning permission.

2.53 Remediation or site investigation activities themselves, including field trials, may require planning permission if not carried out as part of a development. For such applications and for any development or change in use requiring remediation, the LPA should consider the impact of remediation activities on neighbouring land uses and the environment, including any offsite works such as those needed to control methane migration beyond the site boundaries. While some aspects may also be covered under separate pollution control regimes, LPAs will need to consider issues such as dust, noise and traffic movements arising from the remediation activities and the possible need for measures to control or mitigate them. A balance should be struck between the overall social and economic benefits from the development, including the remediation proposals, and the temporary impacts of the remediation process. Applicants are recommended to consider carefully the waste management implications when deciding the best approach to remediation and the handling and treatment of contaminated soils and other material.

2.54 LPAs will need to be satisfied that the development can be carried out safely without unacceptable risks to workers, neighbours or other offsite receptors. It is important that risk to workers is managed using standard hierarchy of control measures under the Control of Substances Hazardous to Health (COSHH) Regulations 2002, the Construction (Design and Management) Regulations 1994 and other relevant legislation.

Outline Planning Applications

2.55 Extreme caution should be taken in the granting of outline planning permission unless the LPA is satisfied that it has sufficient information from the applicant about the condition of the land and its remediation and the full range of environmental impacts arising from the proposals to be able to grant permission in full at a later stage. A grant of outline planning permission that cannot be sustained at the detailed approval stage because it becomes apparent that the necessary remediation is not viable or practicable or because the ES (where EIA is required) demonstrates unacceptable adverse impacts could leave the LPA vulnerable to a claim for compensation. The LPA should be satisfied, therefore, that the risks have been properly assessed and, if there is an unacceptable risk, the options appraised sufficiently to identify a viable remediation scheme that will reduce the risks to acceptable level, just as it would with a full application. Outline permissions should not be granted until the LPA is satisfied that it understands the contaminated condition of the site and that the proposed development is appropriate as a means of remediating it. If the LPA is satisfied about this, further investigations and the detailed design of remediation might still be needed. Identifying these issues as reserved matters will enable detailed approval at an appropriate stage and give the developer greater certainty before incurring the costs involved. Where the LPA is minded to grant outline planning permission, the length of time needed for further investigations and detailed design should be considered in determining the timescale for submission of a detailed application on the reserved matters.

Consultation

2.56 It is essential that LPAs should consult the contaminated land officers or department of the relevant authority for any development proposed on land that might be affected by contamination. In many cases, work on inspection under Part IIA of the EPA 1990 will have identified appropriate consultation areas within an authority's area. Where land has been or is being determined as contaminated land under Part IIA, the relevant local authority's department will need to be satisfied that the applicant's Remediation Statement will meet its requirements in order to avoid a Remediation Notice being served.

2.57 For special sites designated under Part IIA, the Environment Agency is the relevant enforcing authority and should be consulted to ensure that remediation meets its requirements. LPAs should also consult the Environment Agency where the Agency is carrying out a Part IIA inspection on behalf of the local authority or where there appears to be risk to controlled waters that may need to be addressed as part of the development process. The Agency should also be consulted if the land concerned is or was previously regulated by the Agency under Parts I (IPC) and II (Waste Management) of the EPA 1990 or under the successor PPC regime (see PPS23 Annex 1 - *Pollution Control, Air and Water Quality*) or the RSA 1993.

2.58 Other statutory bodies also have relevant responsibilities, including English Nature and English Heritage in relation to particular receptors. They should be consulted by the LPA where appropriate. LPAs should also consult other relevant local authority departments, such as building control, conservation and archaeology, engineering and reclamation as necessary. Other bodies, such as water companies and local community and conservation or amenity groups may be able to advise on issues related to specific receptors.

Granting Planning Permission

2.59 Where it is satisfied that the development proposed will be appropriate, having regard to the information currently available about the contamination (if any) of the site and the proposed remediation measures and standards, the LPA should grant planning permission subject to any conditions requiring such further investigations and remediation (including verification) as would be necessary, reasonable and practical.

2.60 The LPA should refuse permission if it is not satisfied on the basis of the information provided by the applicant and that available from other sources, including the responses of those consulted, that the development would be appropriate. This could include cases where:

- circumstances, including information available to the LPA, clearly suggest the possibility of contamination or of unacceptable risk and no information has been provided or obtained that excludes the reasonable possibility of such contamination or risk;
- the LPA considers that unacceptable risk exists and cannot be dealt with adequately to deliver a development that is suitable for its intended use and which results in the removal of such risks; or
- the steps needed to deliver an appropriate development and deal with unacceptable risk are not already in place and cannot be secured by suitable planning conditions, e.g. because these are not within the powers of the developer since action is needed on other land outside the developer's control or influence.

Planning Conditions

2.61 In some cases, the information available when a planning application is being considered will be sufficient to resolve the main issues regarding contamination from a planning point of view but insufficient to resolve all the details. The LPA will need first to be satisfied that the proposal will deliver an appropriate development and that the risks are sufficiently well known that there is a viable remediation option. If it is so satisfied, it may be appropriate to grant permission subject to conditions relating to the condition of the land. Some examples of conditions that have been used by LPAs are

contained in Appendix 2B. General guidance on the use of planning conditions is provided in DOE Circular 11/95.

2.62 LPAs should consider the use of three-stage conditions that aim to:

- provide for further investigation and characterisation of the site to confirm the nature and extent of contamination and validate the conceptual model and allow more refined risk assessment and appraisal of remedial options;
- to propose and receive approval for a remediation scheme that ensures the removal of unacceptable risks to make the site suitable for use; and
- to submit and receive approval for a validation report that demonstrates the effectiveness of the remediation carried out, preferably before building begins and certainly before the site is occupied by future users.

In using such conditions, LPAs should bear in mind the advice in paragraph 2.55 and be satisfied that an acceptable outcome can be achieved through the specified further work.

2.63 Because it is usually the case that no investigation can cover the whole of a site, there may remain a possibility of unsuspected contamination or risks being discovered during the course of development. For all development involving disturbance to land, LPAs should consider imposing a condition requiring the reporting of all instances of contamination found during the course of development and submitting for approval an assessment of the risks and proposed remediation scheme, or otherwise confirming on completion of development the absence of any unacceptable risk from contamination.

2.64 Where practical, the conditions should be linked to the phases of the development so that at each stage of the process, the LPA is aware of what has been done and what is proposed for the next stage. The differences between perceived and actual risk from contamination are such that a validation report is essential to demonstrate that, following remediation, the site is suitable for use. This should include details of all the actions taken at each stage of the process, from initial investigations and assessment through to carrying out and verification of the remediation. As a matter of good practice, such a validation report should be placed on the relevant case file and held in an accessible form and place for a period of at least 25 years.

2.65 In some cases, it may be necessary to require subsequent monitoring for the purposes of providing information on any changes that might occur in the condition of a pollutant, pathway or receptor identified as part of a pollutant linkage when permission was granted. This will enable the authority to consider the continuing integrity of any remediation scheme and any changes in circumstances affecting the pollutant linkages in question. Conditions may also be required to ensure appropriate action is taken in response to such changes. Conditions requiring monitoring and necessary contingency action need to be justified by the nature of the pollutant linkage and the risk it posed and nature of the remediation undertaken.

Planning Obligations

2.66 Where it is not appropriate to impose conditions to deal with the issues, planning obligations can provide an effective mechanism to ensure that appropriate measures are taken to deal satisfactorily with contamination. Planning obligations can be particularly useful in ensuring that any necessary offsite treatment works, such as the installation of gas-migration barriers, water treatment or monitoring arrangements are put in place. In doing so, it is important to avoid fragmentation of the site which might prejudice necessary monitoring and maintenance provisions. Planning obligations may restrict the development or use of land or require payments to the LPA, e.g. for ongoing monitoring or maintenance or as a bond to cover the contingency of future action triggered by the monitoring. Guidance on the scope and use of planning obligations is provided in DOE Circular 1/97 (currently under review).

Further Information and Advice

2.67 There are numerous sources of information on contaminated land. A bibliography of the principal legislation and some relevant publications is presented in Appendix 2A.

2.68 The assessment of the presence of contamination and of the significance of the risks that may be posed requires careful professional judgement and competent expert advice. The developer is responsible for ensuring the safe development and secure occupancy of a site and that appropriate competent professional advice is available to:

- carry out any necessary investigations;
- assess risk; and
- design and execute any necessary remediation works, including verification of their effectiveness and appropriate monitoring and maintenance where these may be needed.

2.69 The LPA will need to consider the presence of contamination and any risks posed in the public interest. In doing so, it should consult appropriately. However, it is entitled to require the developer to provide at application stage, suitable information and expert advice on its implications. It is entitled to rely on that advice in considering the application and the circumstances of the land or to challenge it on the basis of similarly-qualified expert advice accessible to it in-house or externally. Those providing expert advice to developers should be aware of the future reliance that may be placed on it.

Conclusion

2.70 The Secretary of State looks to LPAs and developers to have regard to the technical and policy advice contained in this Annex alongside that in the accompanying PPS23 *Planning and Pollution Control*. The good practice set out should ensure that, in most instances, potential contamination is identified at an early stage in the process, appropriate policies are developed to enable the risks to be identified, assessed and overcome so that land affected by contamination is put to beneficial use and that planning applications are determined on the basis of adequate information. The potential for adverse effects on human health, the environment, including controlled waters, buildings and neighbouring land, and amenity should thus be reduced to acceptable levels.

2.71 The detailed policies and practices to be adopted by LPAs in responding to suspected or actual contamination, are for them to decide in the light of circumstances within their areas. The Government will monitor the effectiveness of this advice and keep it generally under review.

Appendix 2A: Legislation and Relevant Publications

Some Relevant Legislation

This Appendix lists some of the relevant legislation that is referred to in this Annex. It is not comprehensive but gives some indication of the complexity of the issues surrounding land affected by contamination.

Building Regulations 2000

Construction (Design and Management) Regulations 1994

Control of Substances Hazardous to Health Regulations 2002 (COSHH)

Environment Act 1995

Environmental Protection Act 1990

Groundwater Regulations 1988

Health and Safety at Work etc. Act 1974

Planning and Compulsory Purchase Act 2004

Pollution Prevention and Control Act 1999

Pollution Prevention and Control (England and Wales) Regulations 2000

Radioactive Substances Act 1993

Town and Country Planning Act 1990

Planning and Compensation Act 1991

Planning and Compulsory Purchase Act 2004

Town and Country Planning (Assessment of Environmental Effects) (England and Wales) Regulations 1999

Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2000

Town and Country Planning (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2001

Town and Country Planning General Permitted Development Order 1995

Town and Country Planning General Development Procedure Order 1995

Water Act 2003

Water Environment (Water Framework Directive) (England and Wales) Regulations 2003

Water Industry Act 1991

Water Resources Act 1991

EC Groundwater Directive 80/68/EC

EC Directive 96/61/EC on *Integrated Pollution Prevention and Control*

EC Water Framework Directive (2000/60/EC)

EU Environmental Liability Directive (2004/35/EC)

Some Relevant Publications

This Appendix lists some relevant publications, many of which are referred to in this Annex. It is not comprehensive and there are numerous other examples of useful publications.

Defra/Environment Agency, 2004. CLR11 *Model Procedures for the Management of Land Contamination*

Defra/Environment Agency, 2002. CLR7 *Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Guideline Values and Related Research*

Defra/Environment Agency, 2002. CLR8 *Priority Contaminants Report*

Defra/Environment Agency, 2002. CLR9 *Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans*

Defra/Environment Agency, 2002. CLR10 *The Contaminated Land Exposure Assessment Model (CLEA): Technical Basis and Algorithms*

Defra, 2004. *Remediation of Land Affected by Contamination: A Regulatory Summary*

Defra/Environment Agency SGV reports - *Soil Guidelines for Various Contaminants*

Defra/Environment Agency TOX reports - *Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans for Various Contaminants*

DETR Circular 02/99 *Environmental Impact Assessment*

DETR Circular 02/2000 *Contaminated Land*

DOE Circular 11/95 *The Use of Conditions in Planning Permissions*

DOE Circular 1/97 *Planning Obligations*

ODPM, 2004. *The Building Regulations 2000. Part C: Site Preparation and Resistance to Contaminants and Moisture - Approved Document*

Environment Agency/NHBC, 2000. *Guidance for the Safe Development of Housing on Land Affected by Contamination*. Defra/Environment Agency R&D Publication 66

PPG10 *Planning and Waste Management*, (DETR, 1999)

PPS11 *Regional Spatial Strategies*, (ODPM, 2004)

PPS23 *Planning and Pollution Control* (ODPM, 2004)

PPS23 *Planning and Pollution Control*, Annex 1: *Pollution Control, Air and Water Quality*

BRE 1999. BR211 *Radon: Guidance on Protective Measures for New Dwellings*

Department of the Environment. Industry profiles - The DOE Industry Profiles provide developers, local authorities and anyone else interested in contaminated land, with information on the processes, materials and wastes associated with individual industries. They also provide information on the contamination which might be associated with specific industries, factors that affect the likely presence of contamination, the effect of mobility of contaminants and guidance on potential contaminants. They are not definitive studies but they introduce some of the technical considerations that need to be borne in mind at the start of an investigation for possible contamination.

Environment Agency, 2002. *Guidance on the Characterisation and Remediation of Radioactively Contaminated Land*

BSI 2001. BS10175 *Code of Practice for the Investigation of Potentially Contaminated Sites*

BURA, 2001. *Breaking Old Ground: BURA Guide to Contaminated Land Assessment and Development*.

Some Relevant Internet Sites

Those interested in seeking further information on issues related to land contamination are strongly recommended to inspect the following internet sites to obtain details of policy development and publications that are becoming available.

www.ciria.org

www.defra.gov.uk

www.environment-agency.gov.uk

www.iema.org.uk

www.odpm.gov.uk

www.silc.org.uk

Appendix 2B: Some Examples of Conditions Used by Local Planning Authorities

This Appendix contains some examples of conditions that have been used by local authorities in different circumstances related to development of land affected by contamination. They are not intended as model conditions but they are meant to illustrate the means that some LPAs have adopted to control the potential impacts of contamination on development and land use. Indeed, many of them include a requirement for a desktop study, which is considered in this Annex to be a minimum requirement before an application is determined. Responses to the consultation on this Annex, supplied a number of other examples of conditions, which can be inspected by appointment with ODPM.

Example A

The development hereby permitted shall not begin until a scheme to deal with contamination of land and/or groundwater has been submitted and approved by the LPA and until the measures approved in that scheme have been fully implemented. The scheme shall include all of the following measures unless the LPA dispenses with any such requirement specifically and in writing:

1. A desk-top study carried out by a competent person to identify and evaluate all potential sources and impacts of land and/or groundwater contamination relevant to the site. The requirements of the LPA shall be fully established before the desktop study is commenced and it shall conform to any such requirements. Two full copies of the desk-top study and a non-technical summary shall be submitted to the LPA without delay upon completion.
2. A site investigation shall be carried out by a competent person to fully and effectively characterise the nature and extent of any land and/or groundwater contamination and its implications. The site investigation shall not be commenced until:
 - (i) a desk-top study has been completed satisfying the requirements of paragraph (1) above;
 - (ii) The requirements of the LPA for site investigations have been fully established; and
 - (iii) The extent and methodology have been agreed in writing with the LPA. Two full copies of a report on the completed site investigation shall be submitted to the LPA without delay on completion.
3. A written method statement for the remediation of land and/or groundwater contamination affecting the site shall be agreed in writing with the LPA prior to commencement and all requirements shall be implemented and completed to the satisfaction of the LPA by a competent person. No deviation shall be made from this scheme without the express written agreement of the LPA. Two full copies of a full completion report confirming the objectives, methods, results and conclusions of all remediation works shall be submitted to the LPA.

Example B

No development approved by this permission shall be commenced until:

- a)** the application site has been subjected to a detailed scheme for the investigation and recording of contamination and a report has been submitted to and approved by the LPA;
- b)** detailed proposals for the removal, containment or otherwise rendering harmless such contamination (the 'contamination proposals') have been submitted to and approved by the LPA;
- c)** for each part of the development, contamination proposals relevant to that part (or any part that would be affected by the development) shall be carried out either before or during such development;
- d)** if during development works any contamination should be encountered which was not previously identified and is derived from a different source and/or of a different type to those included in the contamination proposals then revised contamination proposals shall be submitted to the LPA; and
- e)** if during development work, site contaminants are found in areas previously expected to be clean, then their remediation shall be carried out in line with the agreed contamination proposals.

Example C

No development approved by this permission shall be commenced prior to a contaminated land assessment and associated remedial strategy, together with a timetable of works, being submitted to the LPA for approval:

- a)** The contaminated land assessment shall include a desk study to be submitted to the LPA for approval. The desk study shall detail the history of the site uses and propose a site investigation strategy based on the relevant information discovered by the desk study. The strategy shall be approved by the LPA prior to investigations commencing on site.
- b)** The site investigation, including relevant soil, soil gas, surface and groundwater sampling, shall be carried out by a suitably qualified and accredited consultant/contractor in accordance with a Quality Assured sampling and analysis methodology.
- c)** A site investigation report detailing all investigative works and sampling on site, together with the results of analysis, risk assessment to any receptors and a proposed remediation strategy shall be submitted to the LPA. The LPA shall approve such remedial works as required prior to any remediation commencing on site. The works shall be of such a nature as to render harmless the identified contamination given the proposed end-use of the site and surrounding environment including any controlled waters.
- d)** Approved remediation works shall be carried out in full on site under a quality assurance scheme to demonstrate compliance with the proposed methodology and best practice guidance. If during the works contamination is encountered which has not previously been identified then the additional contamination shall be fully assessed and an appropriate remediation scheme agreed with the LPA.
- e)** Upon completion of the works, this condition shall not be discharged until a closure report has been submitted to and approved by the LPA. The closure report shall include details of the proposed remediation works and quality assurance certificates to show that the works have been carried out in full in accordance with the approved methodology. Details of any post-remedial sampling and analysis to show the site has reached the required clean-up criteria shall be included in the closure report together with the necessary documentation detailing what waste materials have been removed from the site.

Example D

Before the development begins a report on potential contamination of the site shall be prepared by an appropriately qualified person and submitted to and approved in writing by the LPA. The report shall include:

- (i) a survey of the scale and nature of any contamination of the site;
- (ii) an assessment of potential risks to the public, buildings (existing or proposed) or the environment, including adjoining land; and
- (iii) details of any remedial measures necessary to make the site suitable for the proposed use or development.

The remedial measures shall be carried out as approved before development begins.

If during development works any contamination should be encountered which was not previously identified and is either from a different source or of a different type to that identified in the original approved survey then revised remedial measures shall be submitted to and approved by the LPA.

If during development works any contamination should be encountered in areas previously expected to be free from contamination, remedial measures shall be carried out in accordance with the approved details.

Example E

No development approved by this permission shall be commenced until:

- a) The application site has been subject to a detailed scheme for the investigation and recording of contamination and remediation objectives have been determined through risk assessment and agreed in writing with the LPA.
- b) Detailed proposals for the removal, containment or otherwise rendering harmless any contamination (the Reclamation method statement) have been submitted to and approved in writing by the LPA.
- c) The works specified in the reclamation method statement have been completed in accordance with the approved scheme.
- d) If during reclamation works any contamination is identified that has not been considered in the reclamation method statement, then remediation proposals for this material should be agreed with the LPA.

Example F

No part of the development hereby permitted shall commence until:

- a) A methodology for investigations and assessments has been agreed in writing by the LPA prior to site investigations and assessments having been carried out by appropriately qualified personnel. The investigations and assessments shall be in accordance with British Standard 10175: 2001 *Investigation of Potentially Contaminated Sites - Code of Practice*. The laboratories used for analysis of samples shall be registered to the ISO17025:2000 quality standard. The investigations and assessments shall be in accordance with current Government and Environment Agency guidance and shall identify the types, nature and extent of contamination present, risks to receptors and potential for migration within and beyond the site boundary.
- b) A remediation scheme to deal with any contaminants identified has been submitted to and approved in writing by the LPA. The scheme shall include an implementation timetable, monitoring proposals and a remediation verification methodology. The verification methodology shall include a sampling and analysis programme to confirm the adequacy of decontamination and an appropriately qualified person shall oversee the implementation of all remediation. The construction of buildings shall not commence until the investigator has provided a report, which shall include confirmation that all remediation measures have been carried out fully in accordance with the scheme. The report shall also include results of the verification programme of post-remediation sampling and monitoring in order to demonstrate that the required remediation has been fully met. Future monitoring proposals and reporting shall also be detailed in the report.

Example G

Before the development is commenced the site shall be investigated for ground conditions, soil and groundwater contamination and landfill gas in accordance with details to be submitted and approved by the LPA. The investigation shall be undertaken to the satisfaction of the local planning authority and details of all results, assessment and measures needed to render the development safe shall be submitted to and approved by the LPA before the development is implemented. All such measures shall be implemented before the development is commenced or in accordance with a timetable to be agreed with the LPA.

Example H

The development hereby permitted shall not be occupied and/or operated unless and until a scheme submitted to and approved by the LPA has been completed which includes the following measures, unless the LPA dispenses with any such requirement specifically and in writing:

A comprehensive site survey by a competent person shall determine:

- (i) the existence, depth, extent and character of any filled ground; and
- (ii) the existence, extent and concentrations of any landfill gas with potential to reach the application site. The requirements of the LPA shall be fully established before the site survey is commenced. Two full copies of the survey, finding and conclusions shall be submitted to the LPA without delay on completion.

and/or

The requirements of a written scheme have been implemented and completed by a competent person detailing measures to contain, manage and/or monitor any landfill gas with a potential to reach the application site. The scheme shall be agreed in writing with the LPA and implemented prior to commencement of the development. No deviation shall be made from this scheme without the written express agreement of the LPA.

Example I

No development shall take place until further details of long-term plans for methane monitoring have been submitted to and approved in writing by the LPA. The approved details shall include a programme of implementation.

Example J

The development hereby permitted shall not be occupied and/or operated unless and until a scheme submitted to and approved by the LPA has been completed which includes the following measures, unless the LPA dispenses with any such requirement specifically and in writing:

1. An assessment by a competent person having suitable knowledge and experience shall be made of the potential for any reasonably foreseeable activity on the site to cause contamination of land or water. The requirements of the LPA shall be fully established before the assessment is made and the assessment shall conform to any such requirement.
2. All reasonable precautions shall be taken by way of design, operating, maintenance and security arrangements to ensure that any risk of contamination of land or water is effectively prevented or, where prevention is not practicable, minimised.
3. A written contingency scheme to be approved by the LPA shall be followed to effectively prevent, contain and/or remove any accidental spillage that may lead to contamination of land or water. The scheme shall be updated as often as necessary for this purpose, subject to the written acceptance of the LPA.