



London Borough
of Hounslow

The small developments landfill condition

A guide for developers

What is the purpose of this leaflet?

The leaflet is intended as a guide for residents undertaking small extensions to existing homes subject to planning permission where the development is on, or near areas of former landfill. It will provide information on how to comply with the condition and give useful links for further information and contact details for relevant council departments.

This leaflet has been produced by the London Borough of Hounslow Land Quality Team who are the primary regulator for land contamination issues within the borough.

The condition will look something like this:

Before the development hereby permitted commences the applicant must either:

a Investigate the site for landfill gas to the satisfaction of the Local Planning Authority (LPA), to ascertain whether gas protection measures are required. Where measures are required, the details shall be submitted to, and approved by, the LPA.

or

b The applicant shall install gas protection measures as a precautionary measure without first investigating the site. The details of these measures shall be submitted to, and approved by, the LPA.

c In either circumstance all required measures shall be installed before the development is first occupied and a building surveyor's certification that the work has been done will need to be supplied to the LPA.

Please note

If the landfill condition on your consent differs from the one given above, further investigation and assessment works will be required. Please refer to the explanatory notes with the condition or contact the Land Quality Team for details at landquality@hounslow.gov.uk or www.hounslow.gov.uk/environment_and_planning/land_quality.htm

The condition explained

- The condition is a precautionary step to ensure that consideration is given to all new buildings where there is a potential risk from ground gas contamination.
- The condition is designed to address any potential ground gas risks and ensure that the appropriate steps are taken to ensure the long-term safety of the development and its users.

Why could former landfill be an issue?

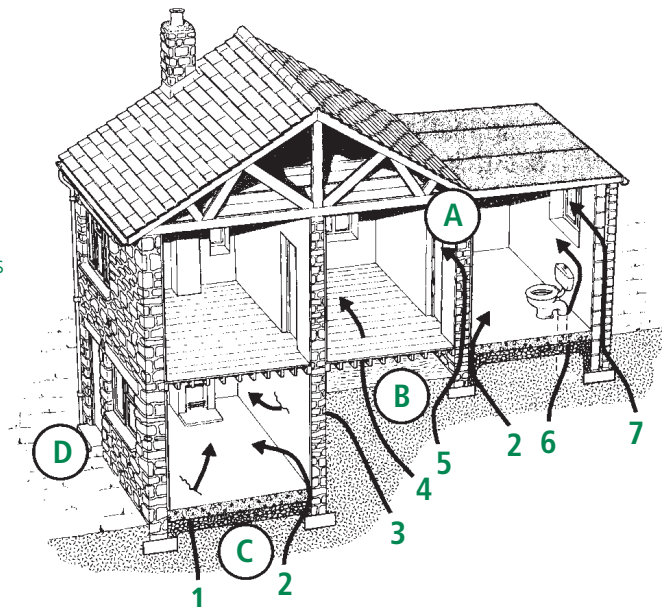
- Many parts of Hounslow have been landfilled in the past. Prior to 1974 there were no regulations for disposal of waste. Much of this waste was landfilled without the safeguards modern landfill sites have to protect public health and the environment.
- Over time, gases including methane and carbon dioxide can be generated as wastes break down in the ground. Problems can occur if these gases accumulate within buildings to dangerous concentrations. Methane can be explosive and carbon dioxide is an asphyxiant at high concentrations. Below are a few ways that ground gases may enter buildings.

Key to ingress routes

- 1 Through cracks in solid floors
- 2 Through construction joints
- 3 Through cracks in walls below ground level
- 4 Through gaps in suspended floors
- 5 Through cracks in walls
- 6 Through gaps around service pipes
- 7 Through cavities in walls

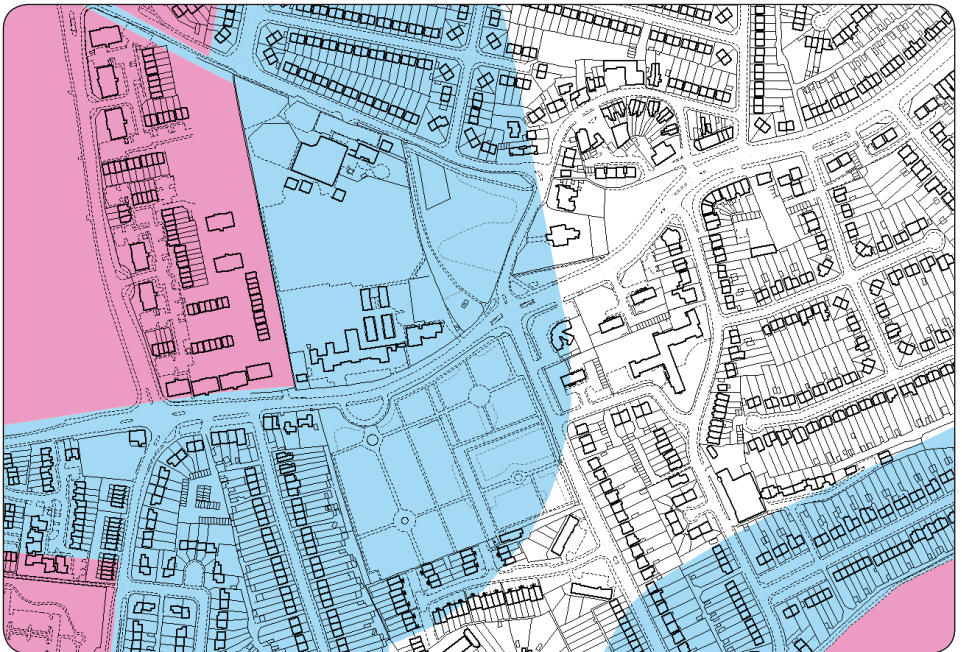
Possible locations for gas accumulation

- A Wall cavities and roof voids
- B Beneath suspended floors
- C Within voids caused by settlement or subsidence
- D Drains and soakaways



What is the 'zone of concern'?

- The zone of concern is the area that immediately surrounds a former landfill. It usually extends 250 metres from the landfill site and ensures that consideration is given to properties within close proximity to former landfills.
- The zone is intended to protect buildings from any potential gases that may have migrated from the landfill through the ground.
- In some cases we have been able to reduce the extent of the zone where gas levels are low.
- Further information on zones of concern can be found in Part C of the Building Regulations 2010 and the latest edition of Approved Document C: Site Preparation and Resistance to Contaminants and Moisture.



What am I required to do?

There are two options:

Investigate the site for landfill gases to determine whether gas protection measures are required and to what level

or

Install gas protection measures into the base of the building as a precautionary measure without first testing the site

Which option should I choose?

- For small extensions to existing buildings it is often believed to be cheaper and more cost effective to install basic gas protection as a precautionary measure instead of testing. Should testing show an issue with ground gases at the site, protection measures will be required. Testing, may however, show that protection measures are not necessary.

How do I test for landfill gas?

- To monitor ground gas, exploratory holes (boreholes) will need to be drilled which allow gas monitoring pipes to be installed in them. These installations should be monitored on at least three occasions for methane, carbon dioxide and oxygen with a minimum of seven days between monitoring visits. The results will then need to be forwarded to the Local Planning Authority (LPA) for approval prior to works continuing.*
- Where ground gas testing is to be undertaken, the full schedule of works should be agreed with the Land Quality Team prior to their beginning.
- The London Borough of Hounslow cannot offer a ground gas testing service; all testing and reporting should be undertaken by a competent environmental consultant. Please contact the Land Quality Team if you require further details on testing for landfill gases.

* An additional monitoring period may be required either based on the gas readings recorded during the initial three occasions or due to the location of the site to ensure a worst case scenario is identified and that suitable gas protection measures can be incorporated into the build.

What is gas protection?

- Gas protection usually consists of a combination of precautionary measures built into the ground floor fabric of buildings that significantly reduces the possibility of ground gases moving into buildings and accumulating to dangerous levels.

What protection would be required?

- A gas membrane is required as a minimum. Gas membranes are similar to the 'Damp Proof Membrane' (DPM) but they are thicker and have welded seams; they act as a barrier reducing the risk of gases entering buildings. In addition,



passive ground ventilation measures may be required if the building is on or adjacent to the former possible landfill. The level of protection required will vary depending on the nature of the site so the specific designs should always be agreed with your Building Control Surveyor.

- Membranes should be of polyethylene material. For developments with a reinforced concrete cast in situ floor slab (suspended, non suspended or raft) a minimum 1200 gauge membrane should be used and underfloor venting.
- For a beam and block or pre cast concrete, a 2000 gauge membrane and underfloor venting should be used. They should be sealed across the entire floor slab and linked to the wall DPC (damp proof course) and sealed around all service entry points.
- Measures should be installed in accordance with the manufacturers instructions and if required correct BBA certification.
- All protection measures should comply with the Building Regulations 2010: Approved Document C, Site Preparation and Resistance to Contaminants and Moisture. Your architect and builder should be aware of this document.

- Under the Town and Country Planning Act 1990, it is the developer's responsibility to ensure that the required actions of planning conditions are undertaken and met to the approval of the Local Planning Authority.

How can I get further information?

The Land Quality Team holds information about former landfilling activities across the borough. This information has been collected from various sources and summarised into a public register, which is available for public viewing at our Civic Centre offices in Hounslow during normal office hours. Please contact the Land Quality Team if you wish to make an appointment.

Useful documents and legislation

Please find below a list of resources used to derive this document.

Town and Country Planning Act, 1990.

Approved Document Part C: 2004. Site Preparation and Resistance to Contaminants and Moisture.

Planning Policy Statement 23 (PPS23): Planning & Pollution Control.

PPS 23 Annex II, Land Affected by Contamination.

Environment Agency (EA) & Building Research Establishment (BRE) Publication 414: Protective Measures for Housing on Gas-Contaminated Land.

The Environment Agency's reference number for this manual is R&D Technical Report P336.

Building Research Establishment (BRE) Publication 212: Construction of New Buildings on Gas-Contaminated Land.

Building Research Establishment Ltd. BRG report: BRG 414. Protective Measures for Housing on Gas-Contaminated Land.

CIRIA C665: Assessing Risks posed by Hazardous Ground Gases to Building.

NMBC – Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide are Present. Report Edition 4.

BS8485: Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Development.

EA and NHBC: Guidance for the Safe Development of Housing on Land Affected by Contamination. EA R&D Publication 66.

Her Majesty's Inspectorate of Pollution: Waste Management Paper 27 – The Control of Landfill Gas. The Building Regulations 2010.

Ends Directory – www.endsdirectory.com

Contact us

Further information and links to related sites can be found on our website:

www.hounslow.gov.uk

If you have any queries or would like further information, please contact us on:

Building Control

Tel: 020 8583 5403/04

Fax: 020 8583 5405

Email: buildingcontrol@hounslow.gov.uk

Borough Planning Office

Email: planningcomments@hounslow.gov.uk

Land Quality Team

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Hounslow TW3 4DN

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