



1. Home (<https://www.gov.uk/>)
2. Housing, local and community (<https://www.gov.uk/housing-local-and-community>)
3. Planning and building (<https://www.gov.uk/housing-local-and-community/planning-and-building>)
4. Planning system (<https://www.gov.uk/housing-local-and-community/planning-system>)

Guidance

Land stability

Advice on how to ensure that development is suitable to its ground condition and how to avoid risks caused by unstable land or subsidence.

From:

Ministry of Housing, Communities & Local Government

(<https://www.gov.uk/government/organisations/ministry-of-housing-communities-and-local-government>)

Published

6 March 2014

Last updated

22 July 2019 — See all updates

Print this page

Where plans are being prepared under the transitional arrangements set out in Annex 1 to the revised National Planning Policy Framework (<https://www.gov.uk/government/publications/national-planning-policy-framework--2>), the policies in the previous version of the framework published in 2012

(<http://webarchive.nationalarchives.gov.uk/20180608095821/https://www.gov.uk/government/publications/national-planning-policy-framework--2>) will continue to apply, as will any previous guidance which has been superseded since the new framework was published in July 2018. If you'd like an email alert when changes are made to planning guidance please subscribe (<https://www.gov.uk/topic/planning-development/planning-officer-guidance/email-signup>).

Land stability

Why should planning authorities be concerned about land stability?

The effects of land instability may result in landslides, subsidence or ground heave. Failing to deal with this issue could cause harm to human health, local property and associated infrastructure, and the wider environment. They occur in different circumstances for different reasons and vary in their predictability and in their effect on development.

The planning system has an important role in considering land stability by:

- minimising the risk and effects of land stability on property, infrastructure and the public;
- helping ensure that development does not occur in unstable locations or without appropriate precautions; and

- to bring unstable land, wherever possible, back into productive use.

Paragraph: 001 Reference ID: 45-001-20190722

Revision date: 22 07 2019 See previous version

(https://webarchive.nationalarchives.gov.uk/20190606211303tf_/https://www.gov.uk/guidance/land-stability)

Is dealing with land stability issues solely a planning issue?

When dealing with land that may be unstable, the planning system works alongside a number of other regimes, including:

- Building Regulations, which seek to ensure that any development is structurally sound;
- the Coal Authority's responsibility for public safety risks arising from past coal mining activities and dealing with proven claims for subsidence under the Coal Mining Subsidence Act 1991 (<http://www.legislation.gov.uk/ukpga/1991/45/contents>) and the Coal Industry Act 1994 (<http://www.legislation.gov.uk/ukpga/1994/21/contents>);
- consultation with the Cheshire Brine Subsidence Compensation Board (<http://www.cheshirebrine.com/>), where land is subsiding or liable to subside owing to past brine pumping within a defined planning area;
- the safeguarding of mine entries once they are abandoned to protect health and safety as required under the Mines and Quarries Act 1954 (<http://www.legislation.gov.uk/ukpga/Eliz2/2-3/70/contents>); and
- a general duty on the site operator to ensure the safety of quarry excavations and tips; and that once abandoned the quarry is left in a safe condition, as required under the Quarries Regulations 1999 (<http://www.legislation.gov.uk/uksi/1999/2024/contents/made>).

Paragraph: 002 Reference ID: 45-002-20140306

Revision date: 06 03 2014

What is the role of plans in planning for land instability in their areas?

Consideration of land stability in the development plan will vary between areas and the types of issues that the plan covers, but planning authorities may need to consider:

- identifying specific areas where particular consideration of landslides, mining hazards or subsidence will be needed;
- including policies that ensure unstable land is appropriately remediated, prohibit development in specific areas, or only allow specific types of development in those areas;
- circumstances where additional procedures or information, such as a land stability or slope stability risk assessment report, would be required to ensure that adequate and environmentally acceptable mitigation measures are in place; and
- removing permitted development rights in specific circumstances.

Paragraph: 003 Reference ID: 45-003-20190722

Revision date: 22 07 2019 See previous version

(https://webarchive.nationalarchives.gov.uk/20190606211303tf_/https://www.gov.uk/guidance/land-stability)

Where can information on land stability issues be obtained from?

Information about land instability may be obtained from:

- geological information held by the British Geological Survey (<https://www.bgs.ac.uk/>), including the national dataset on landslides and mapping and borehole records;
- coal mining records held by the Coal Authority (<https://www.gov.uk/government/organisations/the-coal-authority>);
- the planning authority's own information, including building control records, which may contain issues such as previous surveys, records of previous events;
- local libraries and archives; and
- information about previous land uses contained in the National Land Use database (<https://www.gov.uk/government/collections/national-land-use-database-of-previously-developed-land-nlud-pdl>).

Paragraph: 004 Reference ID: 45-004-20140306

Revision date: 06 03 2014

What measures can be taken to mitigate the risk of subsidence?

A range of planning mechanisms, through both plan policies and in determining planning applications, can be used to mitigate and minimise risks to development proceeding. These include:

- establishing the principle and layout of new development, for example designing a layout to avoid mine entries and other hazards;
- ensuring proper design of buildings and their structures to cope with any movement expected, and other hazards such as mine and/or ground gases; or
- requiring ground improvement techniques, usually involving the removal of poor material and its replacement with suitable inert and stable material. For development on land previously affected by mining activity, this may mean prior extraction of any remaining mineral resource.

Paragraph: 005 Reference ID: 45-005-20190722

Revision date: 22 07 2019 See previous version

(https://webarchive.nationalarchives.gov.uk/20190606211303tf_/https://www.gov.uk/guidance/land-stability)

What steps should applicants take if they suspect land stability is an issue for an individual application?

Details of the steps that a planning authority should follow for applications where they expect land stability is an issue may be found in the flowchart below. If land stability could be an issue, developers should seek appropriate technical and environmental expert advice to assess the likely consequences of proposed developments on sites where subsidence, landslides and ground compression is known or suspected.

A preliminary assessment of ground instability should be carried out at the earliest possible stage before a detailed planning application is prepared. Applicants should ensure that any necessary investigations are undertaken to ascertain that their sites are and will remain stable or can be made

so as part of the development of the site. A site needs to be assessed in the context of surrounding areas where subsidence, landslides and land compression could threaten the development within its anticipated life or damage neighbouring land or property.

Such information could be provided to the planning authority in the form of a land stability or slope stability risk assessment report. Developers may choose to adopt phased reporting, eg desk study results followed by ground investigation results.

Paragraph: 006 Reference ID: 45-006-20140306

Revision date: 06 03 2014

What should a slope stability risk assessment report contain?

The basic issues that a slope stability risk assessment report might consider include:

- an understanding of the factors influencing stability;
- an assessment of whether or not the site is stable and has an adequate level of protection;
- an assessment of whether or not the site is likely to be threatened or affected by reasonably foreseeable slope instability originating outside the boundaries;
- an assessment of whether or not the proposed development is likely to result in slope instability and the extent to which it will affect either the development or nearby property; and
- mitigation measures.

Preparation of a slope stability risk assessment report will vary according to location but is likely to involve at least a comprehensive desk study examination and a site visit.

Paragraph: 007 Reference ID: 45-007-20140306

Revision date: 06 03 2014

What should a land stability risk assessment report contain?

The contents of a land stability risk assessment report will vary in detail from one site to another depending on the potential causes of unstable land that need to be investigated and the development that is proposed. It should present all the information obtained from investigations in a logical order and format which allows an assessment of the risks to the development and include the mitigation necessary to ensure that development will be safe and stable.

Preparation of a land stability risk assessment will normally comprise a comprehensive desk-study and site inspections, but in some circumstances this may require additional intrusive site investigations. The land stability risk assessment report should include:

- a review of existing sources of geological and/or mining information;
- site history;
- site inspection;
- intrusive site investigation (if necessary);
- assessment of land instability risks; and
- mitigation measures

Paragraph: 008 Reference ID: 45-008-20140306

Revision date: 06 03 2014

Who should prepare a land or slope stability risk assessment report?

Land or slope instability risk assessment reports should be prepared by an appropriately qualified person such as chartered members of a relevant professional institution.

Paragraph: 009 Reference ID: 45-009-20140306

Revision date: 06 03 2014

What role does the Coal Authority play in the planning system to prevent land instability?

Since the ownership of virtually all un-worked coal, closed coal mines and coal mine entries transferred to the Coal Authority under the Coal Industry Act 1994, the Coal Authority plays a critical role in dealing with land instability caused by the effects of past and present coal mining activity in England.

The Coal Authority seeks to minimise the impact of land instability on new development through the planning process by:

- identification within the coalfield area of England of specific Development High Risk Areas, where the potential land instability and other safety risks associated with former coal mining activities, such as mine gases, are recorded. This information should be used by planning authorities in the preparation of local plans to identify areas where development may be inappropriate or subject to additional information to ensure that land stability measures are properly addressed;
- acting as a statutory consultee for specific types of application to ensure that land stability measures are properly addressed as part of new development in coalfield areas; and
- managing intrusive site investigations which affect coal and former coal mining features through its permitting regime in the interests of public safety.

Paragraph: 010 Reference ID: 45-010-20140306

Revision date: 06 03 2014

What information on land stability must be submitted to the Coal Authority for individual applications?

Applicants should normally submit a coal mining assessment as part of their application in specific development High Risk Areas. Further information on this assessment and what it should contain can be found on GOV.UK (<https://www.gov.uk/guidance/planning-applications-coal-mining-risk-assessments>).

Paragraph: 011 Reference ID: 45-011-20140306

Revision date: 06 03 2014

How do considerations of land stability fit into development management?

Flowchart

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/578758/land-stability.pdf)

PDF, 264KB, 1 page

This file may not be suitable for users of assistive technology.

► Request an accessible format.

Paragraph: 012 Reference ID: 45-012-20140306

Revision date: 06 03 2014

Published 6 March 2014

Last updated 22 July 2019 + show all updates

1. 22 July 2019
Amended paragraphs 001,003,005
2. 6 March 2014
First published.

Print this page

Related content

- Minerals (<https://www.gov.uk/guidance/minerals>)
- Strategic Environmental Assessments (<https://www.gov.uk/government/collections/strategic-environmental-assessments>)
- Strategic environmental assessment and sustainability appraisal (<https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal>)

Collection

- Planning practice guidance (<https://www.gov.uk/government/collections/planning-practice-guidance>)

Explore the topic

- Planning system (<https://www.gov.uk/housing-local-and-community/planning-system>)

Is this page useful?

-
-

Thank you for your feedback

Help us improve GOV.UK

Don't include personal or financial information like your National Insurance number or credit card details.

What were you doing?

What went wrong?

Send

Close

Help us improve GOV.UK

To help us improve GOV.UK, we'd like to know more about your visit today. We'll send you a link to a feedback form. It will take only 2 minutes to fill in. Don't worry we won't send you spam or share your email address with anyone.

Email address

Send me the survey