SC6.18 Landslide planning scheme policy

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1 Introduction

1.1 Relationship to planning scheme

This planning scheme policy:

1. provides information the Council may request for a development application;
2. provides guidance or advice about satisfying an assessment benchmark which identifies this planning scheme policy as providing that guidance or advice;
3. states a standard for the assessment benchmarks identified in the following table.

|  |  |  |
| --- | --- | --- |
| Column 1 –Section or table in the code | Column 2 –Assessment benchmark reference | Column 3 –Standard in the planning scheme policy |
| Landslide overlay code |
| Table 8.2.14.3.A | AO1 | All |
| Table 8.2.14.3.A | PO3 | Sections 3, 4, 5, 6 & 7 |
| Table 8.2.14.3.A | AO3 | Sections 3, 4, 5, 6 & 7 |
| Table 8.2.14.3.A | PO4 | Sections 3, 4, 5, 6 & 7 |

1.2 Purpose

This planning scheme policy provides information required for a development application, guidance and advice on satisfying assessment benchmarks and standards for the preparation of:

1. a site-specific geotechnical assessment report;
2. a landslide risk assessment.

1.3 Terminology

In this planning scheme policy unless the context or subject matter otherwise indicates or requires a term has the following meaning:

landslide risk assessment: the process of risk analysis and risk evaluation with respect to landslides affecting the development

landslide risk management: the complete process of risk assessment and risk control or treatment with respect to landslides

natural hazard area: An area that has been defined for the management of a natural hazard (flood, bushfire or landslide), but may not reflect the full extent of the area that may be affected by the hazard. Natural hazard areas for landslide is described in the State Planning Policy.

site-specific geotechnical assessment: a detailed geotechnical investigation and report by a qualified practitioner and specifically targeted for the development

2 Landslide overlay mapping

1. Landslide overlay mapping has been prepared for the local government area, showing the areas of landslide susceptibility.
2. The methodology for mapping follows the Guideline for landslide susceptibility, hazard and risk zoning for land use planning (Australian Geomechanics Society 2007).
3. The landslide susceptibility areas identified on the Landslide overlay map constitute a ‘natural hazard area’ for the purposes of the State Planning Policy.
4. Former quarry sites may present a risk of landslide due to former activities occurring and the nature of any subsequent fill on the site. A site-specific geotechnical assessment is required in the Landslide overlay code to ensure site stability for future development. Where not already reflected in Landslide overlay, development within a former quarry should be subject to a site-based landslide risk assessment to ensure safety and stability of the site.
5. The Landslide overlay map to which the Landslide overlay code applies, is not a substitute for a site-based assessment. A site-specific geotechnical assessment for landslide risk should be undertaken to verify, specific to the site, the landslide risk and the appropriate mitigation responses to this, and development designed accordingly.

3 Requirements for a site-specific geotechnical assessment report or a landslide risk assessment

1. A landslide risk assessment is to be prepared in accordance with the Landslide Risk Management Guidelines (Australian Geomechanics Society 2007, c and d) in Australian Geomechanics, Volume 42, No. 1 March 2007, or any later guideline of the Australian Geomechanics Society as agreed by Council.
2. A detailed site-specific geotechnical assessment report identifies proposed works including measures which ensure site stability. The findings of a landslide risk assessment are to be included in this report. A preferred structure of the report is provided in section 7 of this policy.
3. Laboratory testing is required by a National Association of Testing Authority certificated laboratory.
4. All investigations, testing and design should be undertaken in accordance with industry practice and the provisions of relevant Australian Standards.

4 Preparation of a site-specific geotechnical assessment report or landslide risk assessment report

The site-specific geotechnical assessment report or landslide risk assessment is to be undertaken by a Registered Professional Engineer Queensland or equivalent:

1. who holds a degree in civil engineering or engineering geology with current membership of a recognised professional institution and whose primary business (with a minimum of 10 years of experience) is in the field of geotechnical engineering or engineering geology;
2. who has local experience with landslides or demonstrable general experience with landslides and their mitigation and rehabilitation;
3. whose practising professional company holds and maintains professional indemnity insurance for any one occurrence of at least $2 million.

5 Information to be included in a site-specific geotechnical assessment report or a landslide risk management report

1. The site-specific geotechnical assessment report or landslide risk management report is to be submitted with the development application.
2. The report is to:
3. include recommendations and a conclusion that are supported by the data and all stated assumptions contained in the assessment;
4. be capable of being verified by a peer review;
5. state whether the site is suitable for the development in compliance with the risk assessment criteria in section 6 for the loss of life and for property loss;
6. identify the risk mitigation measures for the site;
7. address the assessment benchmarks for specific uses as required in the Landslide overlay code.

6 Risk assessment criteria

1. For the purposes of completing the risk assessment, tolerable risk criteria apply and are specified by the Australian Geomechanics Society in Table 1 AGS Suggested Tolerable loss of life individual risk in the Practice Note Guidelines for Landslide Risk Management 2007, except where societal risk applies as noted below.
2. 'Acceptable risk' criteria as described in Australian Geomechanics Society 2007 Practice note guidelines for landslide risk management 2007 are one order of magnitude lower than 'tolerable risk' as specified in Table 1 AGS Suggested Tolerable loss of life individual risk and are to apply to:
3. essential community infrastructure;
4. vulnerable uses;
5. assembly uses;
6. difficult to evacuate uses;
7. hazardous materials.

7 Report structure

1. The site-specific geotechnical assessment report is to demonstrate that development on land susceptible to landslide has had appropriate regard to the geological elements including landslide risk on the site.
2. As a guide the following report format and contents description indicates the depth of detail required:
3. an introduction including details of the development, such as site location and description including the real property description and the proposed development, reconfiguring a lot or construction details;
4. a description of existing conditions, including existing research material:
5. aerial photographs;
6. geological maps;
7. geological reports;
8. site classification;
9. geology (local and regional), including:
10. surface and sub-surface materials;
11. geomorphology (slopes, ground contours, natural features, terrain analysis, landslide features);
12. site history, including the location size and type of previous landslips on or affecting the site and hazards outside the site but likely to affect it, such as landslides or rockfalls upslope of the site;
13. groundwater, including:
14. watertable;
15. springs and seepage areas in the local area of interest;
16. surface drainage patterns;
17. vegetation cover on and around the site;
18. buildings, other structures, earthworks.
19. an assessment of land stability/suitability, including:
20. proposed development components;
21. a landslide risk assessment for the site indicating the likelihood and consequences of landslides on or near the site affecting the development and the calculated risk to life and property;
22. potential geotechnical effects of the development on land stability.
23. an assessment of development impacts, including:
24. site layout;
25. roadworks, driveways and other pavements;
26. earthworks (excavation, materials usage);
27. foundations;
28. surface drainage;
29. wastewater (treatment and disposal);
30. detail existing stability of the site and of geotechnical constraints on buildings or other development work on the site as well as on land above and below the site;
31. overall effect of development on the stability of the site as well as on land above and below the site;
32. overall effect of any site sewage disposal system or rainwater run-off system on slope stability.
33. recommendations on appropriate measures required to avoid or minimise risks of instability or other adverse environmental effects, on the site as well as land above or below the site, including:
34. preferred locations for buildings, other structures and driveways;
35. foundation requirements;
36. pavement types and design;
37. construction methods to avoid problem areas;
38. preferred excavation, retention and stabilisation techniques and the suitability of excavated materials for use in on-site earthworks;
39. surface and sub-surface drainage requirements;
40. preferred methods of wastewater disposal;
41. vegetation protection and revegetation requirements;
42. design life adopted.
43. a summary and conclusions on the overall suitability of the land for the proposed development;
44. appendices for field and laboratory test results, including the location and level of field investigations such as boreholes and trench pits.