

## **STEEP OR UNSTABLE LAND CODE**

### **1 Purpose of the Code**

To ensure that development on steep slopes or unstable land does not:

- adversely impact on the stability of any land; and
- increase the risk of slope instability for any land; and
- detract from the visual qualities associated with non urban and elevated land; and
- interfere with, damage or adversely affect the important City wide visual qualities associated with the Berserker Ranges and its foothills; and
- cause or result in scarring of the landscape; and
- occur unless it is integrated into as much as practicably possible the natural landscape and topography of the land; and
- adversely interfere with, redirect or concentrate stormwater that drains across the land; and
- does not adversely impact on the ecological values of the area.

### **2 Application of the Code**

For code assessable development, the code for assessment consists of the secondary code(s) listed below:

- Biodiversity / Nature Conservation Code

### **3 Definitions**

**Building location envelope:** As defined in section 3.7 of this planning scheme.

**Slope:** As defined in section 3.7 of this planning scheme.

**Slope Analysis:** As defined in section 3.7 of this planning scheme.

**Steep slopes:** are defined as land with slopes of 15% or greater.

**Unstable Land:** is defined as land prone to subsidence, erosion or to land slip events that has characteristics that may include a combination of any of the following;

- (a) A history of landslide events in the region.
- (b) Evidence of instability. If there is any sign of irregularity, the risk of landslide may be high.

Evidence includes:

- surface creep (e.g. trees tilted);
- minor surface irregularity (e.g. areas of hummocks and depressions);
- major surface irregularity (e.g. benches of abnormal or irregular flat areas in uniform sloping areas; scars; areas stripped of vegetation during slope movement and cracks; linear features showing lateral displacement of the ground surface; and debris mounds,



- deposits of soil and rock on or at the base of slopes);
- presence of scarps (i.e. linear features showing the location of vertical displacement of the ground surface);
  - evidence of rockfall or instability; and
  - evidence of disturbed infrastructure (e.g. tilted powerlines and fences, broken pipes and fractured drains, cracking or tilting of walls, cracking or slumping of embankment slopes, cracking and fall of material from excavated slopes).
- (c) Recent or historical natural forest vegetation clearing or thinning that significantly increases the risk of landslide.
- (d) Steeper slope angles which are usually more at risk.
- (e) Slope shape – concave shapes are usually more at risk.
- (f) Site geology – weak materials are usually more at risk.
- (g) Colluvial thickness may increase the probability of landslides occurring.
- (h) Concentration of surface water – surface water on crests and upper slopes.
- (i) Concentration of groundwater.
- (j) Existing development modifications can significantly alter the risk of slope instability. For example, poor disposal of run-off water or sewage can significantly increase risk of landslide..

#### **4 Explanation**

This code defines, and provides direction on, the requirements that apply to activities on steep or unstable land. It will apply to any development proposed to occur on steep or unstable land.

A critical element to the development of steep or unstable land is the identification and nomination of a 'building location envelope' for each allotment proposed to be created or developed on steep slopes. For the Reconfiguring a Lot, the nomination of a 'building location envelope' will (for the purposes of complying with nominated Acceptable Solutions) dictate the minimum size of an allotment and will define and dictate the location for the majority of building works on that allotment once it has been created. Where development is proposed on an allotment that did not have a 'building location envelope' defined at the time the allotment was created, a 'building location envelope' is to be nominated with the development and be assessed as a part of that development.

#### **5 Performance Criteria and Acceptable Solutions**

##### **PART A – REQUIREMENTS APPLICABLE TO ALL DEVELOPMENT**



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Performance Criteria		Acceptable Solutions	
<b>Building Siting and Design</b>			
<p><b>P1</b> Development on the site is limited to a confined area where visual amenity and ecological values can be maintained with a Building Location Envelope nominated having regard to the following criteria in determining its location<sup>1</sup>;</p> <p>(a) being on land that is demonstrated as being readily accessible and capable of proper drainage; and</p> <p>(b) development in the envelope not being visually intrusive, particularly from public open spaces, major tourist roads and other critical vantage points outside the site, e.g. look-outs; and</p> <p>(c) being located on less steep parts of the site; and</p> <p>(d) being located on less environmentally sensitive parts of the site.</p>	<p><b>A1.1</b></p> <p><b>A1.2</b>   <b>OR</b></p> <p><b>A1.3.1</b>   <b>OR</b></p> <p><b>A1.3.2</b></p> <p><b>A1.4</b></p>	<p>The location of the whole development is not in an area subject to slopes equal to or greater than 15% as identified on the Steep or Unstable Land Code Map 1.</p> <p>The development proposal is wholly located within a Building Location Envelope previously approved by Council under this planning scheme as complying with the criteria specified in P1 of this Code, on a date after the Commencement Day<sup>2</sup>.</p> <p>The development proposal is wholly located within a Building Location Envelope (or however otherwise described) previously approved by Council in association with an approval for a Reconfiguring a Lot on the land prior to the Commencement Day.</p> <p><b>AND</b> The whole of the development proposal covers no more than 600m<sup>2</sup> and is not located on land with a slope greater than 1 in 4 (or 25%).</p> <p><b>OR</b> When there is no Building Location Envelope, no Acceptable Solution is provided.</p>	
<b>Topography</b>			
<p><b>P2</b> Development does not require major changes to, or result</p>	<p><b>A2</b></p>	<p><i>In Partial Satisfaction of P2</i> The extent of cut and fill is; (i) minimised to no more than 1.5m relative to</p>	

<sup>1</sup> In an application for Reconfiguring a Lot, it would be appropriate and expected that a condition of approval would require the registration of a covenant that defines the Building Location Envelope for each allotment.

<sup>2</sup> A Building Location Envelope (BLE) nominated and approved with a Reconfiguring a Lot approval continues to apply to the allotment at the time when other development (eg. a Material Change of Use and Building Works for a House) are proposed on the allotment. A new BLE cannot be nominated or approved and instead only an amendment to the original one can be made. If no BLE has ever been approved for the allotment, one can be nominated and considered before the lodgement of the development application. A BLE can be nominated with the development application requiring assessment against this code however the applicant in doing so accepts all risks and costs that result if the BLE is rejected.

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<b>Performance Criteria</b>	<b>Acceptable Solutions</b>
<p>in impacts on, the topography of the site and its associated natural functions, and is carried out in a manner that maintains on-site and downstream water quality and minimises disturbance to natural drainage patterns by:</p> <ul style="list-style-type: none"> <li>(a) arranging roads, paths and other activity areas to follow the natural contours; and</li> <li>(b) minimising the use of retaining walls and cut and fill; and</li> <li>(c) designing footings for structures to be parallel to the direction of stormwater flows or as point footings; and</li> <li>(d) minimising the extent of hard surfaces such as paved and roofed areas; and</li> <li>(e) collecting stormwater runoff from hard surfaces and drainage installations and discharging it to a lawful point of downstream discharge, in a manner that protects the quality of downstream water to within acceptable limits; and</li> <li>(f) minimising the length of driveways and roads and the number of watercourse and drainage line crossings.</li> </ul>	<p>the natural ground level at any point; and            (ii) not within 1.5m of any site boundary and revegetated to at least the density of planting that existed before any clearing occurred immediately following completion of the cut and fill works.</p>



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<b>Performance Criteria</b>		<b>Acceptable Solutions</b>	
<p><b>P3</b> Development provides and maintains a high level of safety for people and property from the risks of landslide or other dangers.</p> <p><i>Note:</i>                      For any development proposed on land subject to slopes equal to or greater than 15% as identified on the Steep or Unstable Land Code Map 1, the Council will require the development to comply with any recommendations and requirements of a Geotechnical report approved by Council having been prepared in accordance with <b>Planning Scheme Policy No. 3 - Preparation of Geotechnical Reports</b><sup>3</sup> that demonstrates that the development is safe.</p>	<p><b>A3.1.1</b></p> <p><b>A3.1.2</b> <b>OR</b></p> <p><b>A3.2</b></p>	<p><i>In Partial Satisfaction of P3</i></p> <p>The location of the development is not in an area subject to slopes equal to or greater than 15% as identified on the Steep or Unstable Land Code Map 1.</p> <p>The location of the development is in an area subject to slopes equal to or greater than 15% as identified on the Steep or Unstable Land Code Map 1 but a Slope Analysis confirms that the location of the development is not on a steep slope.</p> <p><b>AND</b></p> <p>Access is safe to any building location envelope, with a maximum longitudinal slope of not greater than 25% (1 in 4) that provides all weather access to the.</p>	
<b>Ecological Values</b>			
<p><b>P4</b> The development will not impact on areas with significant ecological values.</p>	<p><b>A4</b></p>	<p>The development complies with the <b>Biodiversity / Nature Conservation Code</b>.</p>	



<sup>3</sup> In some instances, Geotechnical Reports may have been done previously, for example when an allotment was created as a result of a Reconfiguring a Lot application.



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**PART B – REQUIREMENTS APPLICABLE TO ALL DEVELOPMENT EXCEPT RECONFIGURING A LOT**

<b>Performance Criteria</b>	<b>Acceptable Solutions</b>
<b>Building Siting and Design</b>	
<p><b>P5</b> Buildings or other structures are integrated with, have regard to and reflect the natural surroundings and topography of the land by:</p> <p>(a) being of a height generally less than the height of the existing mature vegetation canopy (where in existence); and</p> <p>(b) Incorporating external features such as walls, windows, door frames, roofs, gutters etc, of dark or muted colours which do not contrast with the surrounding vegetation; and</p> <p>(c) using foundations that minimise disturbance to the natural landscape, such as pole type foundations. Slab on ground is only used where cut and fill is minimised such as in split level construction; and</p> <p>(d) the use of non-reflective building materials.</p>	<p><i>In partial satisfaction of P5</i></p> <p><b>A5.1</b> All building works such as a house, garage, outdoor recreation, gazebos, sheds, etc (but excluding the driveway and septic trenches if required) on steep land are located in an approved building location envelope for the site<sup>4</sup>.</p> <p><b>A5.2 AND</b> Except at the location of building works, driveways, etc, the development does not involve the removal of trees or other vegetation<sup>5</sup>.</p>



<sup>4</sup> In an application for Reconfiguring a Lot, it would be appropriate and expected that a condition of approval would require the registration of a covenant that defines the Building Location Envelope for each allotment.

<sup>5</sup> For example to acquire views.



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**PART C – REQUIREMENTS APPLICABLE TO RECONFIGURING A LOT ONLY**

**Performance Criteria**

**Acceptable Solutions**

**Site Design and Allotment Size**

**P6** Allotment size and layout is to reflect the environmental, scenic and access constraints of steep land.

**A6** A building location envelope is nominated for each allotment and when that building location envelope has a slope of, or greater than 15%, each allotment has a minimum size and road frontage in accordance with the following Table 1 which overrides any minimum allotment size or frontage stated in the Reconfiguring a Lot Code or a Local Area Code such as the Norman Road Residential Area Code.

Slope	Minimum Allotment Size	Minimum Road Frontage
=or>15% but <20%	1400m <sup>2</sup>	25m
=or> 20% but <25%	1700m <sup>2</sup>	25m
=or> 25%	2000m <sup>2</sup>	30m

**Table 1**



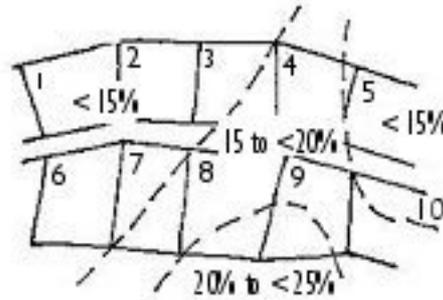
**STEEP OR UNSTABLE LAND CODE – APPENDIX 1**

**INSTRUCTIONS FOR DETERMINING SLOPE:**

**1 RECONFIGURATION A LOT**

**STEP 1:**

Prepare a *slope analysis* that identifies slope categories over the site, as follows:



**Figure 1: Example Slope Analysis (not to scale)**

In this example Slope Categories are:

- <15%
- =or>15 but <20%
- =or> 20% but <25%

**STEP 2:**

Overlay the proposed Reconfiguring a Lot layout (**refer Figure 1**).

**STEP 3:**

Determine slope for each lot using the following methods:

**Method 1**

- Lots which fall entirely within one slope category, eg. Lots 1, 2 and 6 are assigned the slope of that category, ie<15%.
- The assigned slope is then used to confirm the required minimum lot size, frontage, etc. mentioned in the relevant codes of this Planning Scheme for that particular slope category.

**AND**

**Method 2**

- Lots which fall within more than one slope category, eg. Lots 3, 4, 5, 7, 8, 9 and 10 have their slope determined by defining a *building location envelope* for each allotment and using the process defined for Building Works or Material Change of Use in section 2.

**2 For Building Work or Material Change of Use of Premises**

**STEP 1:**

Identify the *building location envelope* for the site (refer to the definition of building location envelope).

**STEP 2:**



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*Building location envelopes that fall entirely within one slope category are assigned the slope of that category.*

*Note: For the purposes of Reconfiguring a Lot, the assigned slope for the nominated building location envelope is to be used as the slope for the proposed allotment.*

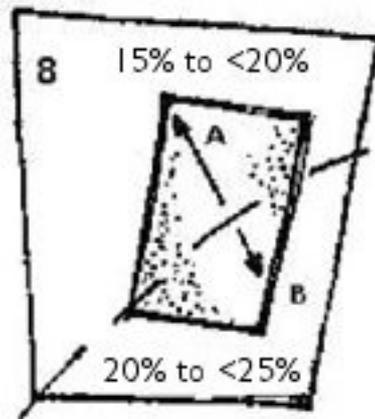
**CHAPTER 5**  
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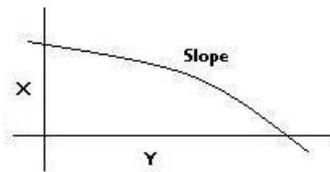
**STEP 3:**

Where *building location envelopes* do not fall entirely within one slope category (refer **Figure 2**), slope is determined by calculating the predominant slope of the *building location envelope*.



**Figure 2: Predominant slope of building location envelope (not to scale)**

- The predominant slope is measured perpendicular to the contours of the *building location envelope* and calculated as follows, and as illustrated in **figure 3**:  
Predominant Slope (%) =  $(x \div y)$  multiplied by 100, where:  
'x' is the change in elevation, in metres, (highest point to lowest point) of the *building location envelope*, and  
'y' is the horizontal distance, in metres, in a straight line between the highest point (A) and the lowest point (B) of the *building location envelope*



**Figure 3: Cross Section of predominant slope of building area**

- Where the *building location envelope* has more than one predominant slope, ie. due to a knoll or a gully, the average of the predominant slopes shall apply.

*Note: For the purposes of Reconfiguring a Lot, the assigned slope for the nominated building location envelope is to be used as the slope for the proposed allotment.*

