

## Geotechnical risk management

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<b>Objective</b>	4.3 We will establish a healthy balance between development and the environment
<b>Strategy</b>	4.3.4 Ensure that the Clarence Valley is sufficiently prepared to deal with natural disasters

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## 1. Purpose

The Geotechnical Risk Management Policy (the Policy) establishes the Risk Management approach for property affected by geotechnical hazards within the Clarence Valley Council Local Government Area (CVC LGA).

### 1.1 Objectives of the Policy

The objectives of this Policy are:

- (a) To develop a partnership between Council and the land owners within the geotechnical hazard areas to manage the risk,
- (b) To provide a mechanism for Council to assist landowners manage the risk on their properties and provide advice within the limitations of the expertise of Council staff;
- (c) To ensure that geotechnical and related structural matters are adequately investigated and documented by applicants or proponents of activities prior to the lodgement of any development application or Part V activities to carry out any development subject to this Policy, or wherever an application is lodged for a Building Certificate on land identified as a Geotechnical Risk;
- (d) To establish whether or not the proposed development activity is appropriate to be carried out, and if appropriate the conditions that should be applied, having regard to the results of the geotechnical and related structural investigations;
- (e) In the event that a proposed development activity is only appropriate if carried out subject to geotechnical and related structural engineering conditions, those conditions are able to be met, and are identified by applicants prior to lodgement of the development application, including all appropriate constraints and remedial maintenance actions required prior to, during and after the carrying out of the development;
- (f) To ensure effective controls exist to ensure a development is carried out in accordance with the requirements of this Policy;
- (g) To ensure that the preparation of geotechnical and related structural engineering information and certificates required to be lodged by this Policy are carried out by suitably qualified professionals with appropriate expertise in the applicable areas of engineering;
- (h) To ensure that developments are only carried out if geotechnical and related structural engineering risks, and where appropriate, coastal process risks are identified and can be effectively addressed and managed for the life of the development;
- (i) Ongoing requirements to maintain the integrity of the geotechnical solution as contained in a consent are effectively carried out to the specified requirements for the life of the development; and
- (j) To ensure the development is constructed in accordance with the recommendations of the Geotechnical Engineer/Engineering Geologist and verified by the Geotechnical Engineer/Engineering Geologist.

### 1.2 Application of this Policy

This Policy is to be applied as follows:

- (a) It shall address both structural and geotechnical requirements relating to geotechnical issues only in geotechnical hazard areas. Separate structural requirements will also apply for the erection of any structure in accordance with the Building Code of Australia (BCA) and best engineering practice.

(b) To each of the following:

1. Land identified as subject to potential slope instability. Council will consider whether the site or related land may be subject to slope instability by taking into consideration one or more of the following:
  - i. The information contained in Council's property database and other relevant documents or maps held in the office of Council;
  - ii. Any Inspection of the site in the opinion of Council and/or related land by a Council Officer or other person nominated by Council, which identified that the subject site or adjoining land may be subject to slope instability;
  - iii. Consideration of any geotechnical report that is relevant to the site or related land;
  - iv. Any other information available to Council; and/or
  - v. As a precautionary approach, Council may have the information reviewed by a third party independent geotechnical engineer or engineering geologist.
2. Development Applications that include:
  - i. excavations greater than 1 metre deep, the edge of which is closer to the site boundary or a structure to be retained on the site, than the overall depth of the excavation and/or
  - ii. any excavation greater than 3 metres deep below the existing surface and/or
  - iii. any excavation that has the potential to destabilize a tree capable of collapsing in a way that any part of the tree could fall onto adjoining structures (proposed or existing) or adjoining property and/or
  - iv. any fill greater than 1.0 metres in any part of the Council area not subject to a Master Plan where filling greater than 1 metre is included in the plan and/or
  - v. any works that may be affected by geotechnical processes or which may impact on geotechnical processes including but not limited to construction on sites with low bearing capacity soils.

## 2. Definitions

Any terms which are defined in the Environmental Planning & Assessment Act 1979 (E.P & A) or the E.P & A Regulations 2000 there under have the same meaning when used in this Policy. In this Policy, the following terms have the meanings set out below:

**Acceptable Risk Management** – The complete process of risk assessment and control of risk to the level defined as “acceptable” in this Policy.

**Acceptable Risk** – Acceptable Risk includes the risk to life and the risk to property, both must be considered. The guidance for the establishment of acceptable risk criteria in this Policy has been based on the contents of AGS2007(c & d). Acceptable Risk for Loss of Life for the person(s) most at risk, per annum is taken as having a probability of 10<sup>-6</sup> per annum. Acceptable Risk for Loss of Property is taken as “Low” as defined in AGS2007.

Risk levels for both Loss of Life and Property should be determined in accordance with the methodologies presented in AGS 2007(c). Risk of loss of life should be determined quantitatively. Risk of loss of property can be determined qualitatively or in accordance with the qualitative terminologies and matrices presented in AGS 2007(c).

**AGS** – Australian Geomechanics Society.

**AGS2000** – Australian Geomechanics Society 2000, “Landslide Risk Management Concepts and Guidelines”, AGS Sub-Committee on Landslide Risk Management, Australian Geomechanics Journal Vol 35 No. 1 March 2000 also reprinted in Australian Geomechanics Journal Vol 37 No. 2, May, 2002.

**AGS 2007 (a, b, c, d, e)** – means Australian Geomechanics Society 2007, “Landslide Risk Assessment and Management”, Australian Geomechanics Journal Vol 42, No 1, March 2007. AGS 2007 may be viewed on [www.australiangeomechanics.org](http://www.australiangeomechanics.org) (go to “Downloads” and view documents under Landslide Risk Management (2007))

**Application** - means any development application or Part V assessment applications which relates to land in the Clarence Valley Council LGA

**BCA** - means the Building Code of Australia.

**Building Certificate Geotechnical Risk Assessment** – means a geotechnical report associated with the lodgement of a Building Certificate Application. The report must conform with the requirements of AGS 2007 for identification and treatment of risk to the “Acceptable Risk Management” criteria stated in this policy and the requirement to remove risk wherever reasonable and practical. This is required in Form H – Geotechnical Declaration – Building Certificate or Order.

**Building** - includes any structure or part of a structure.

**Building Certificate** – A Certificate under Section 149a of the EPA Act that, if issued by Council, confirms that:

1. the building or part thereof is in accordance with a consent or approval, or
2. no action will be taken by Council in relation to a building or part thereof that was not originally approved.

The issuance of the certificate may be contingent on the carrying out of works.

**Coastal Engineer** - means a specialist coastal engineer who is a registered professional engineer with chartered professional status as a CP Eng with coastal engineering as a core competency and, has an appropriate level of professional indemnity insurance.

**Covenant** – An agreement between the Council and a landowner for the landowner to do, or to refrain from doing, certain acts in relation to the land. A restrictive covenant prevents a proprietor from carrying out specified actions. A positive covenant binds a proprietor to do or complete specified action(s).

**CPEng** — Chartered Professional Engineer (Institution of Engineers, Australia)

**CPGeo** — Chartered Professional Geologist (Australasian Institute of Mining)

**RPGeo** — Registered Professional Geoscientist (Australian Institute of Geoscientists)

**Civil Engineer or Structural Engineer** - means a civil or structural engineer who, is a registered professional engineer with chartered professional status (CP Eng) and, has an appropriate level of professional indemnity insurance.

**Development** - has the same meaning as set out in section 4 of the EP&A. Act 1979 or any replacement or substitution of that provision and includes not only that specific development but also the overall site on which the development is located.

**Engineering Geologist** - means a specialist Engineering Geologist who is a registered professional engineering geologist with chartered professional status being either CPEng or CPGeo or RPGeo with Landslide Risk Management as a Core Competence, and has an appropriate level of professional indemnity insurance.

**EP & A Act 1979** - means Environmental Planning & Assessment Act 1979 (NSW).

**Final Geotechnical Certificate** - means a certificate of a Geotechnical Engineer or Engineering Geologist in accordance with Form F – Geotechnical Declaration – Final Structural/Civil Certificate or Form G – Geotechnical Declaration – Final Geotechnical Certificate.

**Geotechnical Engineer** - means a specialist Geotechnical Engineer who is a registered professional engineer with chartered professional status being either CPEng or CPGeo or RPGeo with Landslide Risk Management as a Core Competence, and has an appropriate level of professional indemnity insurance.

**Geotechnical Hazard** - means a condition with the potential for causing the movement of rock, debris or earth, which may cause injury or death to persons or damage to, or destruction of property.

**Geotechnical Report** - means a report prepared by and/or technically verified by a Geotechnical Engineer or Engineering Geologist as defined by this policy, which incorporates each of the elements, where applicable to the type of development, described in Section 5.1.2. Preparation of the Geotechnical Report.

**Geotechnical Works** - means the elements of site modification designed by the geotechnical engineer.

**Life of the Structure** – This provides the context within which the geotechnical risk assessment should be made. The required 100 year baseline broadly reflects the expectations of the community for the anticipated life of a residential structure and hence the timeframe to be considered when undertaking the geotechnical risk assessment and making recommendations as to the appropriateness of a development, its design and any remedial measures that should be put in place to control risk.

It is recognized that in a 100-year period external factors that cannot reasonably be foreseen may affect the geotechnical risks associated with a site. Hence, the Policy does not seek the Geotechnical Engineers to warrant the development for a 100-year period, rather to provide a professional opinion that foreseeable geotechnical risks to which the development may be subjected in that timeframe have been reasonably considered.

**Minor Development and/or Minor Alteration (landscape)** – Development/alterations (including demolition) with a value less than \$20,000 generally involving works such as landscaping with trees greater than 2 metres in height or the potential to grow to greater than 2 metres in height, paving, dwarf walls, small awnings, minor changes to drainage either surface or underground or any other work of a minor nature that will or may affect the existing fall of rain onto the property, either more or less, will or may affect the flow of stormwater onto, within or from the property both on the surface and below the surface or any activity that will affect the ground surface by excavation or addition of material to the ground surface.

**Minor Development and/or Minor Alteration (structure)** – Development/alterations, generally involving a structure and/or drainage works, with a value of less than \$20,000 or as determined by Council from time to time every five years. That is, there can only be one minor development/alterations in any five-year period to a property for consideration under this category.

**Occupation Certificate** – means an interim or final Certificate under Section 109c of the EPA Act that if issued by Council or an accredited certifier, authorizes occupation and use of a building or part thereof.

**Orders Process** – Orders issued under Protection of the Environment Operations Act, 1997; Local Government Act, 1993; Environmental Planning & Assessment Act, 1979; Roads Act, 1993; and Noxious Weeds Act, 1993.

**Part V** – Environmental Planning & Assessment Act 1979 No203 Part 5.

**Policy** - means this Geotechnical Policy.

**Related Land** - means land including roads and thoroughfares that could affect or could be affected by any development proposed on a site.

**Remove Risk** – It is recognized that, due to the many complex factors that can affect a site, the subjective nature of the science of geotechnical engineering, the risk for a site and/or development cannot be completely removed. It is, however, essential that risk be reduced to at least that which could be reasonably anticipated by the community in everyday life. Further, landowners should be made aware of the reasonable and practical measures available to them to reduce risk as far as possible.

Hence where the Policy requires that “reasonable and practical measures have been identified to remove risk” it refers to the process of risk reduction. The Policy is not requiring the Geotechnical Engineer to warrant that risk has been completely removed, as this is not meaningfully achievable.

**Requirements** - include all acts, statutes, regulations, by-laws, ordinances, codes, delegated legislation, all approvals granted under any such instrument, the BCA, any applicable Australian Standard.

**Risk** - means a measure of the probability and severity of an adverse effect to health, property or the environment.

**Site** - means the whole of any parcel of land to which the carrying out of any development relates.

**Site Classification** - means a classification of the site in accordance with AS 2870.1 Australian Standard Residential Slabs and Footings.

**Structure** – Any building including, but not limited to residences, industrial and commercial buildings, out buildings, pools and retaining walls.

**Structural Design** - means the selection and proportioning of load carrying elements incorporated in a structure, which require certification by a structural engineer.

**Structural Document** - means a document (which may be in the form of drawings) from a Structural Engineer or Civil Engineer which makes recommendations in respect of the Structural Design and structural Works required for any structure to be erected on the site which, under this Policy, requires certification in accordance with Form B – Structural/Civil/Geotechnical Engineering Declaration – Construction Certificate Application and Form F – Geotechnical Declaration – Final Structural/Civil Certificate.

**Structural Works** - means the elements of any structure designed by a structural engineer.

**Tolerable Risk Management** – The complete process of risk assessment and control of risk to the level defined as “tolerable” in this Policy.

**Tolerable Risk** – 10-5 for the person(s) most at risk, per annum and “Moderate” for property, as defined in AGS 2007 (c & d). The Tolerable Risk criteria is only applicable to sites with structures that have been in existence in their present form for at least 10 years and have demonstrated a performance at a Tolerable Risk level, or better, during that period and there is not a foreseeable reason why this situation should change. Tolerable risk can only be considered as a criterion for the purpose of Building Certificates and under the Orders process.

**Verifier** - means a Geotechnical Engineer or Engineering Geologist or Coastal Engineer as defined by this policy who verifies a geotechnical report or aspects of a geotechnical report.

### 3. Background/legislative requirements

The guidance for the establishment of acceptable risk criteria in this policy is based upon the contents of the Australian Geomechanics Society’s Landslide Risk Management Concepts and Guidelines March 2000 (AGS 2000). These guidelines have been reviewed and the Australian Geomechanics Society has produced Practice Note Guidelines for Landslide Risk Management 2007 (AGS 2007), originally cited in Australian Geomechanics Vol 42 No 1 March 2007. This reference publication is to be read in conjunction with:

- AGS (2007) Guideline for Landslide Susceptibility, Hazard and Risk Zoning for Land Use
- AGS (2007) Australian GeoGuides for Slope Management and Maintenance
- AGS (2007) Commentary on Practice Note Guidelines for Landslide Risk Management 2007

The AGS 2007 are adopted as a reference document for this Document.

#### 4. Policy, protocol or procedure statement

Development must be undertaken in accordance with the “Acceptable Risk Management” criteria defined in this document for Loss of Property and Loss of Human Life for a design project life, taken to be 100 years, unless otherwise justified by the applicant and accepted by Council. These criteria are based on the guidelines established in AGS 2000 and as further developed in AGS2007.

Every reasonable, practical step that is available to remove risk should be taken even if the “Acceptable Risk Management” level has been achieved. The primary method of Geotechnical Risk Management in the CVC LGA is through the application of development conditions, Part V assessments and the review generated by the issue of Building Certificates, for all development on lands that has a potential geotechnical hazard.

Once geotechnical risk management measures have been identified for a site, it is the owners’ responsibility to ensure their sites are maintained in accordance with “AGS 2000” standards and the principal that every reasonable and practical step that is available should be used to remove risk.

This policy has been prepared in accordance with the provisions of Part 3 Chapter 7 Local Government Act 1993.

#### 5. Procedures

##### 5.1 When is a Geotechnical Report Required

A Geotechnical report is required to be lodged with a Development Application or an Application for a “Building Certificate”.

##### 5.1.1 Applications Requiring a Geotechnical Report

For all the lands and activities described in Clause 1.2 Section (b), unless a written exemption has been issued by Council.

- (a) All Development Applications or Part V assessment applications for development activities which include, but are not limited to, the erection of any buildings, demolition of buildings, drainage works or excavation/filling works are to be accompanied by a Geotechnical Report acceptable to Council. Should such a report not be provided, the Application will be deemed to be incomplete.
- (b) An Application for a Building Certificate must be accompanied by a Geotechnical Report acceptable to Council and Form F – Geotechnical Declaration – Final Structural/Civil Certificate.

##### 5.1.2 Preparation of the Geotechnical Report

It is the responsibility of the Geotechnical Engineer to determine the level of investigation required for a particular site/proposal.

- (a) For minor development or alteration the Geotechnical Engineer may determine that a detailed Geotechnical assessment is not required. This must be justified as a clear professional opinion with the supporting basis on which the opinion was formed and must be certified on *Form D – Geotechnical Declaration – Minor Impact*. At all times any

decision regarding the degree of investigations and assessment required must be dictated by consideration of risk to Life and Property and the recognition by the Geotechnical Engineer that the Council will rely on the Geotechnical Report/Opinion as the basis for ensuring that the geotechnical risk management aspects of the site/proposal have been adequately addressed.

- (b) For a Development Application, other than for minor development/alteration, where a detailed Geotechnical Report is to be submitted with a Development Application/ Part V assessments as required under this policy, the following elements must be included:
1. An assessment of the risk posed by all identifiable Geotechnical Hazards that have the potential to either individually or cumulatively impact upon people or property upon the site or related land to the proposed development in accordance with the guidelines set out in AGS 2007 and in particular, in the format detailed in the “Flow charts and matrices for Landslide Risk Management” that forms part of AGS 2007 (c).
  2. Plans and sections of the site to a minimum scale of 1:200 (or other scale acceptable to Council suitable for the site characteristics) and related land from survey and field measurements with contours and spot levels to AHD. Key features are to be identified, including the locations of the proposed development, buildings/structures on both the subject site and where relevant on the adjoining site.
  3. Storm water drainage, sub-surface drainage, water supply and sewerage pipelines and where appropriate the survey plan should be augmented by geomorphological mapping.
  4. Details of all site inspections and site investigations and any other information used in preparation of the Geotechnical Report. A site inspection is required in all cases. Site investigation may require sub-surface investigation; appropriate investigation may involve boreholes and/or test pit excavations or other methods necessary to adequately assess the geotechnical/geological model for the site.
  5. Photographs and/or drawings of the site and related land adequately illustrating all geotechnical features referred to in the Geotechnical Report, as well as the locations of the proposed development.
  6. Presentation of a geological model of the site and related land showing the proposed development, including an assessment of sub-surface conditions, taking into account thickness of the topsoil, colluvium and residual soil layers, depth to underlying bedrock, and the location and depth of ground-water. Hydrogeological conditions including seepage inflows and/or dewatering impacts should also be modelled and assessed where applicable. For Coastal bluff areas, the model must also include an assessment of the mechanism of bluff failure and assessment of the potential and scale of bluff failure that may affect the site.

7. A conclusion as to whether the site is suitable for the development proposed to be carried out. **This must be in the form of a specific statement that “The site is suitable (or can be made suitable) for the development proposed and that the site and/or the development proposal can achieve the Acceptable Risk Management required by this Policy provided that.....”** (The report is then to specify all conditions required to achieve this outcome throughout the four stages of development management as follows):
1. **Conditions to be provided to establish the design parameters** – (these conditions to be part of the DA/Part V report by Council) and are to be provided through the geotechnical report –
    - (i) Footing levels and supporting rock quality (where applicable)
    - (ii) Degree of earth and rock cut and fill (where applicable)
    - (iii) Recommendations for excavation and batters (where applicable)
    - (iv) Parameters, bearing capacities and recommendations for use in the design of all structural works with geotechnical components including all footings, retaining walls, surface and sub-surface drainage.
    - (v) Recommendations for the selection of building structure systems consistent with the geotechnical risk assessment.
    - (vi) Any other conditions required to ensure the proposal can achieve the “Acceptable Risk Management” level as defined in this Policy.
    - (vii) Any other condition required to remove geotechnical risks that can reasonably and practically be addressed.
  2. **Conditions applying to the detailed design to be undertaken for the construction certificate** – (these conditions to be part of the DA/Part V report to Council)
    - (i) That any structural design relating to the geotechnical aspects of the proposal is to be checked and certified by a suitably qualified and experienced Geotechnical Engineer as being in accordance with the geotechnical recommendations.
    - (ii) Any other design conditions the geotechnical engineer preparing the DA report believes are required in the design phase in order to ensure the design will achieve the “Acceptable Risk Management” level as defined in this Policy for potential loss of both property and life.
  3. **Conditions applying to the Construction** – (these conditions to be part of the DA/Part V report submitted to Council)
    - (i) Constructed works that require the sign off by a suitably qualified and experienced Geotechnical Engineer. The report must highlight and detail the inspection regime to provide the builder with adequate notification for all necessary inspections.
    - (ii) Any other construction conditions including works methodology and temporary works that the geotechnical engineer preparing the report believes are required in the construction phase in order to ensure the design will achieve the “Acceptable Risk Management” level as defined in this Policy for the potential loss of both property and life.

4. **Conditions regarding ongoing management of the site/structure** – (these conditions to be part of the DA/Part V report submitted to Council with the DA etc.).
    - (i) Any conditions that may be required for the ongoing mitigation and maintenance of the site and the proposal, from a geotechnical viewpoint.
    - (ii) Such conditions to be in the form of a recommendation for inclusion as a covenant (or similar) on the land title to ensure that any owner or future owners are clearly notified of their ongoing responsibility.
  
  8. For coastal bluff areas, a coastal engineer’s report as to the impact of coastal processes on the site and the coastal forces prevailing on the bluff must be incorporated into the geotechnical assessment as an appendix and the Coastal Engineer’s assessment must be addressed through the Geotechnical Report and structural specification.
  
  9. For bushfire prone lands, as designated in the CVC LGS mapping, the Geotechnical Report is to assess the potential geotechnical impacts of any Asset Protection Zones required and mitigate landslide risk due to Bushfire management.
  
  10. A statement with supporting information to the effect that every reasonable and practical step available has been identified to remove any foreseeable geotechnical risk from the site over and above attainment of the “Acceptable Risk Management” criterion.
  
  11. A copy of Form A – Geotechnical Declaration and Verification – Development Application, bearing the original signature of the Geotechnical Engineer and/or Engineering Geologist as defined by this policy, who has either prepared or technically verified the Geotechnical Report. Where a Coastal Engineer has been involved as required by this Policy.
- (c) Where a Geotechnical Report is to be submitted in support of a Building Certificate Application it is the responsibility of the Geotechnical Engineer to determine, from consideration of the site, the structures and the risk to life and property, whether a detailed assessment is required. Where, in the opinion of the Geotechnical Engineer the site/structures have been in existence for at least 10 years and have demonstrated a performance at a tolerable risk level, or better, during that period and, there is not a foreseeable reason why this situation should change the Geotechnical Report to be submitted with the application for a Building Certificate should at least address the following elements:
1. An assessment of the risk posed by the identifiable Geotechnical Hazards that have the potential to either individually or cumulatively impact upon people or property upon the site or related land to the existing development in accordance with the guidelines set out in AGS 2007 (c) and the criteria in this Policy for Tolerable Risk.
  
  2. For coastal bluff areas a coastal engineer’s report as to the impact of coastal processes on the site and the coastal forces prevailing on the bluff must be incorporated into the geotechnical assessment as an appendix and the Coastal

Engineer's assessment must be addressed through the Geotechnical Report and structural specification.

3. Details of all site inspections and site investigations and any other information used in preparation of the Geotechnical Report. A site inspection is required in all cases. Site investigation may require sub- surface investigations; appropriate investigations may involve bore holes and/or test pit excavation or other methods necessary to adequately assess the geotechnical/geological model for the site. It is the responsibility of the Geotechnical Engineer to determine the level of investigation required to adequately address the issues of risk to life and property.
4. Photographs and/or drawings of the site and related land adequately illustrating all geotechnical features referred to in the Geotechnical Report, as well as the existing structure.
5. A conclusion as to whether the site and the existing development achieves the Tolerable Risk Management criteria "and if not, what specific actions are required to achieve this criteria to enable a Building Certificate to be issued.
6. Any further reasonable and practical action that should be undertaken to remove risk.
7. Any covenant that would be necessary to ensure the ongoing mitigation and maintenance of the site from a geotechnical viewpoint.
8. A copy of *Form A – Geotechnical Declaration and Verification – Development Application* and *Form H – Geotechnical Declaration – Building Certificate or Order*, bearing the signature of the Geotechnical Engineer/Engineering Geologist as defined by this Policy who has either prepared or technically verified the Geotechnical Report. Where a Coastal Engineer has been involved, as required by this Policy a separate *Form A – Geotechnical Declaration and Verification – Development Application* must be submitted by that Engineer.

## **5.2 Development Application/Building certificate not supported**

Circumstances in which Council would not support a Development Application or an application for a Building Certificate

- (a) Where, under *Clause 5.1.1*, a Development Application/Part V assessment is required to be accompanied by a Geotechnical Report, then this report must be prepared and/or verified by a Geotechnical Engineer or Engineering Geologist and a Coastal Engineer (where applicable) as defined by this policy, through the submission of *Form A – Geotechnical Declaration and Verification – Development Application*. Where a Geotechnical Report accompanying a Development Application has been prepared by a person/s with qualifications that do not meet the requirements of this policy then Council shall refuse to support the development application, until the Geotechnical Report has been verified by a Geotechnical Engineer or Engineering Geologist and, where applicable, Coastal Engineer, as defined by this policy.

- (b) Where under *Clause 5.1.1*, a Building Certificate Application is required to be accompanied by a Geotechnical Report, then this report must be prepared and/or verified by a Geotechnical Engineer or Engineering Geologist and a Coastal Engineer (where applicable) as defined by this policy, through the submission of *Form H – Geotechnical Declaration – Building Certificate or Order*. Where a Geotechnical Report accompanying a Building Certificate Application has been prepared by a person/s with qualifications that do not meet the requirements of this policy then Council shall refuse to support the development application, until the Geotechnical Report has been verified by a Geotechnical Engineer or Engineering Geologist and, where applicable, Coastal Engineer, as defined by this policy.
- (c) If a Geotechnical Report or independent review of a Geotechnical Report accompanying an application, identifies the risk to property and/or life posed by the geotechnical hazard as greater than the level of “Acceptable Risk Management” **in the case of a Development Application or “Tolerable Risk Management” in the case of a Building Certificate** as defined in this Policy after all feasible measures to reduce the risk have been considered and/or where the geotechnical report does not follow the methodology of AGS 2007.

### 5.3 Requirements for Specific Situations

- (a) Prior to the occupation of any structure or the commencement of any use authorised by development consent, the applicant must submit to Council a copy of the Final Geotechnical Certificate (*Form F – Geotechnical Declaration – Final Structural/Civil Certificate*), bearing the original signature of the author or verifier of the Geotechnical report. Council will refuse to issue an Occupation certificate, regardless of whether the occupancy certificate application is of interim or final status, until it receives the Final Geotechnical Certificate. Where the original author or verifier of the Geotechnical Report is unavailable to sign *Form F – Geotechnical Declaration – Final Structural/Civil Certificate*, Council will accept another suitably qualified Geotechnical Engineer as the authority to sign off.
- (b) Council may, if appropriate, impose conditions on a development consent/Part V assessment requiring the lodgement of interim Geotechnical Certificates related to the stages of the construction of any development the subject of the consent. The form of any such interim certificate must be consistent with *Form E – Geotechnical Declaration – Remediation*. It is the responsibility of the Geotechnical Engineer preparing the Geotechnical Report in support of the Development Application submission to ensure the necessary conditions requiring interim inspections are included in the Geotechnical Report.
- (c) All conditions relating to the geotechnical aspects of the proposal for the design and construction phase are to be incorporated in the report as *Clause 5.1.2*, Council will rely on those conditions as being the complete set required to ensure the proposed outcome achieves an “Acceptable Risk Management” level as defined in this Policy.
- (d) Any development application/Part V for a development subject to this Policy must incorporate any conditions the Geotechnical Engineer or Engineering Geologist believes are necessary to incorporate into a covenant on title to ensure that the land owner both at the time of application and into the future is aware of their responsibilities for any necessary on-going works or monitoring to ensure the site and the development remain within the “Acceptable Risk Management” level.

## 5.4 Other Analysis Requirements

Other analysis Requirements are as follows:

- (a) Where a Geotechnical Report contains a recommendation for a separate analysis of the site to be carried out by another consultant, for example a flood study to be compiled by a hydrological consultant, this recommendation is to be highlighted to the applicant in the submission of the Geotechnical Report. This would enable the applicant to engage the required consultant and obtain the necessary report prior to the lodgement of the Development Application.
- (b) This policy requires that the structural engineer, who prepares the structural documentation, is a civil or structural engineer as defined by this policy. This policy also requires that the engineer in preparing the structural documentation, has viewed and where necessary used the recommendations given in the Geotechnical Report for the same development. These requirements need to be verified by accompanying the submission of the structural documentation with a completed copy of *Form B – Structural/Civil/Geotechnical Engineering Declaration – Construction Certificate Application* or *Form C – Geotechnical Declaration Subdivision – Construction Certificate Application*.
- (c) This policy requires that where the site is in a coastal bluff area, the Geotechnical Engineer must engage a Coastal Engineer to provide an assessment of the impact of coastal process and identification of the coastal forces that impact on the site. This report should form an appendix to the Geotechnical Report and the geotechnical analysis must include an interpretation of the influence of coastal processes and forces on the site and the development.
- (d) Council retains the right to have a Geotechnical report submitted with a Development application peer reviewed by an independent Geotechnical Engineer or Engineering Geologist or Coastal Engineer (where applicable) at the applicant's cost.

## 6. Attachments

### 6.1 Form A – Geotechnical Declaration and Verification – Development Application

To be submitted with a *Development Application* or *Part V Application*. If this form is not submitted with the geotechnical report the report will be refused.

This form is essential to verify that the geotechnical report has been prepared in accordance with CVC Geotechnical Risk Management Policy and that the author of the geotechnical report is a geotechnical engineer or engineering geologist as defined by CVC Geotechnical Risk Management Policy. Alternatively, where a geotechnical report has been prepared for subdivision or is greater than two years old or by a professional person not recognised by CVC Geotechnical Risk Management Policy, then this form may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy.

## **6.2 Form B – Structural/Civil/Geotechnical Engineering Declaration – Construction Certificate Application**

To be submitted with the structural design forming part of an application for a *Construction Certificate*.

This form must be attached with the submission of the structural documentation required for the determination of a *Construction Certificate* or combined development application and *Construction Certificate* submission.

This form is essential, as it provides evidence to the PCA determining the *Construction Certificate*, that the structural design has been prepared or verified by a structural engineer or civil engineer as defined by CVC Geotechnical Risk Management Policy and that the structural design has been prepared in accordance with the recommendations given in the geotechnical report for the same development. This form also covers additional design documents required to cover other works not shown on the main structural/civil design drawings. This form is also essential to establish that the recommendations given in the geotechnical report have been interpreted and incorporated into the structural design as originally intended by the geotechnical engineer in preparing the geotechnical report.

## **6.3 Form C – Geotechnical Declaration Subdivision – Construction Certificate Application**

To be submitted with an application for an engineering <*construction certificate*> for subdivision of land. This form must be attached to the application for the <*construction certificate*>.

This form is essential to verify that the geotechnical report has been prepared in accordance with CVC Geotechnical Risk Management Policy and that the author of the geotechnical report is a geotechnical engineer or engineering geologist as defined by CVC Geotechnical Risk Management Policy. Alternatively, where a geotechnical report has been prepared by a professional person not recognised by the CVC Geotechnical Risk Management Policy, then this form may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by CVC Geotechnical Risk Management Policy.

## **6.4 Form D – Geotechnical Declaration – Minor Impact**

This form may be used where minor construction works present minimal or no geotechnical impact on the site or related land. A geotechnical engineer or engineering geologist must inspect the site and/or review the proposed development documentation to determine if the proposed development requires a geotechnical report to be prepared to accompany the development application. Where the geotechnical engineer determines that such a report is not required then they must complete this form and attach design recommendations where required. A copy of this form with design recommendation, if required, must be submitted with the development application.

## **6.5 Form E – Geotechnical Declaration – Remediation**

This form must be submitted where development must be staged for geotechnical reasons and remediation of the site to a <*tolerable risk*> is necessary prior to any further development continuing on the site.

This form is essential, as it provides verification at each stage of the development, prior to the next stage commencing, that the remediation of the site to a <tolerable risk> has been carried out in accordance with the requirements of the geotechnical report and <add reference to specific section> of CVC Geotechnical Risk Management Policy and that no unforeseen ground conditions have been encountered which could impact on the integrity of structures on site or related land or the landslide risk. The geotechnical engineer or engineering geologist who prepared and/or verified the report must carry out site inspections as determined by the report to ensure that the design(s) documented on Form(s) B have been completed prior to signing this form.

#### **6.6 Form F – Geotechnical Declaration – Final Structural/Civil Certificate**

This form must be submitted to the <PCA> at the completion of a project and prior to the issue of an <occupation certificate>.

This form is essential, as it provides evidence to the <PCA> that the development works have been carried out in accordance with the requirements of the structural design, any site inspections, and that any changes to the development occurring during construction, were carried out in accordance with all the requirements and recommendations of the structural design and geotechnical report, conditions of development consent relating to geotechnical issues, and any site instructions issued.

#### **6.7 Form G – Geotechnical Declaration – Final Geotechnical Certificate**

This form must be submitted to the <PCA> at the completion of a project and prior to the issue of an <occupation or subdivision certificate>.

This form is essential, as it provides verification that the development works have been carried out in accordance with the requirements of the geotechnical report during construction, and any site inspections, and that no unforeseen ground conditions have been encountered which could have an impact on the integrity of structures on site or related land and any subsequent geotechnical requirements introduced during the construction process.

#### **6.8 Form H – Geotechnical Declaration – Building Certificate or Order**

This form is to be submitted with Application for a <Building Certificate> or in response to an order.

### **7. Acknowledgements**

This policy has been adapted from:

- Pittwater Council – Appendix 5 (To Pittwater P21) – Geotechnical Risk Management Policy for Pittwater - 2009
- Wollongong Development Control Plan 2009 - Part E – General Controls – Environmental Controls – Chapter E12:Geotechnical Assessment
- Australian Geomechanics Vol 42 No 1 March 2007

<b>FORM</b>	<b>A</b>	Page 1 of 2	
		<b>Geotechnical Declaration and Verification Development Application</b>	
Office Use Only			
<p><b>To be submitted with a development application. If this form is not submitted with the geotechnical report the report will be refused.</b></p> <p>This form is essential to verify that the geotechnical report has been prepared in accordance with <i>CVC Geotechnical Risk Management Policy</i> and that the author of the geotechnical report is a geotechnical engineer or engineering geologist as defined by <i>CVC Geotechnical Risk Management Policy</i>. Alternatively, where a geotechnical report has been prepared for subdivision or is greater than two years old or by a professional person not recognised by <i>CVC Geotechnical Risk Management Policy</i>, then this form may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by <i>CVC Geotechnical Risk Management Policy</i>.</p>			
<b>Section 1</b>		<b>Related Application</b>	
DA Number			
DA Site Address			
DA Applicant			
<b>Section 2</b>		<b>Geotechnical Report</b>	
Details		Title:	
		Author's Company/ Organisation Name:	Report Reference No:
		Author:	Dated:     /     /
<b>Section 3</b>		<b>Checklist</b>	
Geotechnical Requirements (Tick as appropriate, either Yes or No)		<b>The following checklist covers the minimum requirements to be addressed in a geotechnical report. This checklist is to accompany the report. Each item is to be cross-referenced to the section or page of the geotechnical report which addresses that item.</b>	
Yes	No	<input type="checkbox"/> <input type="checkbox"/> A review of readily available history of slope instability in the site or related land as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> An assessment of the risk posed by all reasonably identifiable geotechnical hazards as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Plans and sections of the site and related land as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Presentation of a geological model as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Photographs and/or drawings of the site as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> A conclusion as to whether the site is suitable for the development proposed to be carried out either conditionally or unconditionally as per <Add reference>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> If any items above are ticked No, an explanation is to be included in the report to justify why. <Add reference>	
		Subject to recommendations and conditions relevant to:	
Yes	No	<input type="checkbox"/> <input type="checkbox"/> selection and construction of footing systems,	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> earthworks,	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> surface and sub surface drainage,	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> recommendations for the selection of structural systems consistent with the geotechnical assessment of the risk,	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> any conditions that may be required for the ongoing mitigation and maintenance of the site and the proposal, from a geotechnical viewpoint,	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> highlighting and detailing the inspection regime to provide the <PCA> and builder with adequate notification for all necessary inspections.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> State Design life adopted:        Years	

**Note:** <Add reference>: Add in the relevant section or page number of the listed geotechnical report which addresses each item.

<b>FORM</b>	<b>A</b>	Page 2 of 2
<b>Geotechnical Declaration and Verification Development Application</b> .....		

**Section 4 List of Drawings referenced in Geotechnical Report**

Design Documents	Description	Plan or Document No.	Revision or Version No.	Date	Author

**Section 5 Declaration**

<p>Declaration (Tick all that apply)</p> <p>Yes</p> <p><input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> N/A <input type="checkbox"/></p> <p><input type="checkbox"/> N/A <input type="checkbox"/></p> <p><input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> No <input type="checkbox"/></p>	<p><b>I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and on behalf of the company below, I:</b></p> <p>am aware that the geotechnical report I have either prepared or am technically verifying (referenced above) is to be submitted in a support of a development application for the proposed development site (referenced above) and its findings will be relied upon by <i>&lt;the Regulator&gt;</i> in determining the development application.</p> <p>prepared the geotechnical report referenced above in accordance with the AGS (2007c) as amended and CVC Geotechnical Risk Management Policy .</p> <p>am willing to technically verify that the Geotechnical Report referenced above has been prepared in accordance with the AGS (2007c) as amended and CVC Geotechnical Risk Management Policy .</p> <p>am willing to technically verify that the geotechnical report prepared for the development application for the site confirms the land will achieve the level of <i>&lt;tolerable risk&gt;</i> of slope instability as a result of the considerations described in <i>&lt;add reference to specific section of&gt;</i> CVC Geotechnical Risk Management Policy taking into account the total development and site disturbances proposed.</p> <p>am willing to technically verify that the geotechnical report prepared for the site and related land being greater than two years old confirms the land will achieve the level of <i>&lt;tolerable risk&gt;</i> of slope instability as a result of the considerations described <i>&lt;add reference to specific section of&gt;</i> of CVC Geotechnical Risk Management Policy taking into account the total development and site disturbances proposed.</p> <p>have professional indemnity insurance in accordance with CVC Geotechnical Risk Management Policy of not less than \$.... million, being in force for the year in which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to <i>&lt;the Regulator&gt;</i>.</p>
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**Section 6 Geotechnical Engineer or Engineering Geologist Details**

Company/ Organisation Name			
Name (Company Representative)	Surname:	Mr /Mrs /Other:	
	Given Names:		
	Chartered Professional Status:	Registration No:	
Signature	Dated:     /     /		

Reference: AGS (2007c) "Practice Note Guidelines for Landslide Risk Management". Australian Geomechanics Society, Australian Geomechanics, V42, .N1, March 2007.

Note: N/A = Not Applicable.

FORM

**B**

## Structural/Civil/Geotechnical Engineering Declaration – <Construction Certificate> Application

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Only

### To be submitted with the structural design forming part of an application for a <construction certificate>.

This form must be attached with the submission of the structural documentation required for the determination of a <construction certificate> or combined development application and <construction certificate> submission.

This form is essential, as it provides evidence to the <PCA> determining the <construction certificate>, that the structural design has been prepared or verified by a structural engineer or civil engineer as defined by CVC Geotechnical Risk Management Policy and that the structural design has been prepared in accordance with the recommendations given in the geotechnical report for the same development. This form also covers additional design documents required to cover other works not shown on the main structural/civil design drawings. This form is also essential to establish that the recommendations given in the geotechnical report have been interpreted and incorporated into the structural design as originally intended by the geotechnical engineer in preparing the geotechnical report.

### Section 1 Related Application

*Reference* What is the <Regulator's> development application number?

*DA Site Address*

*DA Applicant*

### Section 2 Structural/Civil Design Documents

*List of  
Structural/Civil  
Design  
Documents  
(More space on  
page two if  
required)*

Description	Plan or Document No.	Revision or Version No.	Date	Author

### Section 3 Geotechnical Report

*Details*

Title:

Author:

Dated: / /

Author's Company/  
Organisation Name:

Report Reference No:

### Section 4 Declaration by Structural/Civil Engineer or Designer of Additional Design Documents in Relation to a Geotechnical Report

Declaration  
(Tick all that apply)

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

I am a structural or civil engineer as defined by the CVC Geotechnical Risk Management Policy and on behalf of the company below.

I have prepared the structural designs listed in Section 2 above and/or Section 6 below, in accordance with the recommendations given in the above geotechnical report.

I am a design engineer and have prepared Additional Design documents listed in Section 7 below in accordance with the recommendations given in the above geotechnical report.

I am aware that the <PCA> will rely on this declaration in granting a <construction certificate> for works to which the above structural design documents and geotechnical report relate.

I certify that any residential structure designed or erected in accordance with the structural design prepared by the structural engineer or civil engineer achieves the performance requirements of Clause 1.3 of the current version of AS 2870 (this must be ticked when accompanied by minimal impact certification).

I have professional indemnity insurance in accordance with CVC Geotechnical Risk Management Policy of not less than \$.... million, being in force for the year in which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to <the Regulator>.

FORM

**B**

## Structural/Civil/Geotechnical Engineering Declaration – <Construction Certificate> Application

### Section 5 Structural/Civil/Design Engineer Details

Company/ Organisatio n Name			
Name (Company Representat ive)	Surname:	Mr /Mrs /Other:	
	Given:		
	Chartered Professional Status:	Registration No:	
Signature			Dated:     /     /

### Section 6 Ancillary Structural/Civil Design Required Prior to Completion of Geotechnical Declaration

List of Structural Design Documents Required	Description	Company Responsible	Plan or Document No.	Revision or Version No.	Date of Additional Form B *	Author
	eg. Landscaping retaining walls					
	eg. Anchor design					

### Section 7 Additional Design Documents Required Prior to Completion of Geotechnical Declaration

List of Design Documents Required	Description	Company	Plan or Document No.	Revision or Version No.	Date of Additional Form B *	Author
	eg. Surface & subsoil drainage design					
	eg. Infiltration or effluent disposal					

**Section 8 and 9 are not to be completed until each relevant ancillary and additional Form B has been completed and forwarded to the geotechnical engineer/engineering geologist**

### Section 8 Declaration in Relation to Structural/Civil Designs and Additional Design Drawings

Declaration (Tick all that apply)  Yes No  <input type="checkbox"/> <input type="checkbox"/>  <input type="checkbox"/> <input type="checkbox"/>  <input type="checkbox"/> <input type="checkbox"/>	I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and on behalf of the company below:	
	<input type="checkbox"/>	I prepared and/or technically verified the above geotechnical report and now declare that I have viewed the above listed design documents prepared for the same development.
	<input type="checkbox"/>	I am satisfied that the recommendations given in the above geotechnical report have been incorporated into the design documents as intended.
	<input type="checkbox"/>	I consider no additional drawings are required to show all the required works listed in the Geotechnical Report.

### Section 9 Geotechnical Engineer or Engineering Geologist Details

Company/ Organisatio n Name			
Name (Company Representat ive)	Surname:	Mr /Mrs /Other:	
	Given Names:		
	Chartered Professional Status:	Registration No:	
Signature			Dated:     /     / .....

Note: \* A separate Form B is required to be completed by the design engineer for those works listed in each of Sections 6 and 7 of this Form B.

<b>FORM</b>	<b>C</b>	<h2 style="margin: 0;">Geotechnical Declaration</h2> <h3 style="margin: 0;">Subdivision &lt;Construction Certificate&gt; Application</h3>
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Office Use Only		

**To be submitted with an application for an engineering <construction certificate> for subdivision of land. This form must be attached to the application for the <construction certificate>.**

This form is essential to verify that the geotechnical report has been prepared in accordance with CVC Geotechnical Risk Management Policy and that the author of the geotechnical report is a geotechnical engineer or engineering geologist as defined by CVC Geotechnical Risk Management Policy . Alternatively, where a geotechnical report has been prepared by a professional person not recognised by the CVC Geotechnical Risk Management Policy , then this form may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by CVC Geotechnical Risk Management Policy .

### Section 1      Related Application

<i>Reference</i>	What is the Regulator's Development Application Number?
<i>DA Site Address</i>	
<i>DA Applicant</i>	

### Section 2      Geotechnical Report

<i>Details</i>	Title:	
	Author:	Dated:      /      /      .....
	Author's Company/ Organisation Name:	Report Reference No:

### Section 3      Declaration

Declaration (Tick all that apply)	<p><b>I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and on behalf of the company below:</b></p>				
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; padding: 5px;">Yes</td> <td style="text-align: center; padding: 5px;">No</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>	Yes	No	<input type="checkbox"/>	<input type="checkbox"/>	<p>I prepared the geotechnical report referenced above in accordance with the AGS (2007c) as amended and the CVC Geotechnical Risk Management Policy .</p>
Yes	No				
<input type="checkbox"/>	<input type="checkbox"/>				
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I am willing to technically verify that the geotechnical report referenced above has been prepared in accordance with the AGS (2007c) as amended and CVC Geotechnical Risk Management Policy .</p>		
<input type="checkbox"/>	<input type="checkbox"/>				
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I have professional indemnity insurance in accordance with CVC Geotechnical Risk Management Policy of not less than \$.... million, being in force for the year in which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to &lt;the Regulator&gt;.</p>		
<input type="checkbox"/>	<input type="checkbox"/>				
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I am aware that the geotechnical report I have either prepared or am technically verifying (referenced above) is to be submitted in support of an engineering &lt;construction certificate&gt; for subdivision of land for the proposed development site (referenced above) and its findings will be relied upon by &lt;the Regulator&gt; determining the engineering &lt;construction certificate&gt;.</p>		
<input type="checkbox"/>	<input type="checkbox"/>				

FORM

C

## Geotechnical Declaration Subdivision <Construction Certificate> Application

### Section 4 Checklist

Geotechnical Requirements (Tick as appropriate, either Yes or No)	<b>The following checklist covers the minimum requirements to be addressed in a geotechnical report in accordance with &lt;Add reference to specific section of&gt; CVC Geotechnical Risk Management Policy . This checklist is to accompany the report.</b>	
Yes		
No		
<input type="checkbox"/>	<input type="checkbox"/>	The extent and stability of proposed embankments including those acting as retarding basins <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Recommended Geotechnical testing requirements <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Required level of geotechnical supervision for each part of the works as defined under AS3798 – Guidelines on Earthworks for Commercial and Residential Developments <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Compaction specification for all fill within private subdivisions <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	The level of risk to existing adjacent dwellings as a result of a construction contractor using vibratory rollers anywhere within the site the subject of these works. In the event that vibratory rollers could affect adjacent dwellings, 'high risk' areas shall be identified on a plan and the engineering plans shall be amended to indicate that no vibratory roller shall be used within that zone <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	The impact of the installation of services on overall site stability and recommendations on short term drainage methods, shoring requirements and other remedial measures that may be appropriate during installation <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	The preferred treatment of any areas of unacceptable risk within privately owned allotments <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Requirement for subsurface drainage lines <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Overall suitability of the engineering plans for the proposed development <Add reference>
<input type="checkbox"/>	<input type="checkbox"/>	Risk mitigation plan defined <Add reference>

### Section 5 Geotechnical Engineer or Engineering Geologist Details

Company/ Organisation Name		
Name (Company Representative)	Surname:	Mr /Mrs /Other:
	Given Names:	
	Chartered Professional Status:	Registration No:
Signature		Dated:        /        /        .....

Reference: AGS (2007c) "Practice Note Guidelines for Landslide Risk Management". Australian Geomechanics Society, Australian Geomechanics, V42, .N1, March 2007.

**Note:** <Add reference>: Add in the relevant section or page number of the listed geotechnical report which addresses each item.

<b>FORM</b>	<b>D</b>	<h2 style="margin: 0;">Geotechnical Declaration</h2> <h3 style="margin: 0;">Minor Impact</h3>
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This form may be used where minor construction works present minimal or no geotechnical impact on the site or related land. A geotechnical engineer or engineering geologist must inspect the site and/or review the proposed development documentation to determine if the proposed development requires a geotechnical report to be prepared to accompany the development application. Where the geotechnical engineer determines that such a report is not required then they must complete this form and attach design recommendations where required. A copy of this form with design recommendation, if required, must be submitted with the development application.

**Note:** In all situations, this form will need to be accompanied by Form B where the structural engineer or civil engineer certifies that any residential structure designed or erected in accordance with the plans and specifications prepared by the structural engineer or civil engineer achieve the performance requirements of Clause 1.3 of the current version of AS 2870.

**Note:** The use of this form does not preclude the geotechnical consultant from requiring a Geotechnical Report.

### Section 1 Related Application

<i>Reference</i>	What is the Council Development Application Number?
<i>DA Site Address</i>	
<i>DA Applicant</i>	

### Section 2 Documentation

<i>List of Documents Reviewed</i> <small>(More space on page two if required)</small>	Description	Plan or Document No.	Revision or Version No.	Date	Author

### Section 3 Declaration

Declaration (Tick all that apply)	<p><b>I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and I have inspected the site and reviewed the proposed development at the DA Site Address described above. As a result of my consideration of the CVC Geotechnical Risk Management Policy, of my site inspection and review of the documentation listed above, I have determined and declare that, on behalf of the company below:</b></p>
Yes    No <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>The current load-bearing capacity of the site will not be exceeded or be adversely impacted on by the proposed development, and</p> <p>The proposed works are of such a minor nature that the requirement for geotechnical advice in the form of a geotechnical report, prepared in accordance with CVC Geotechnical Risk Management Policy is considered unnecessary for the adequate and safe design of the structural elements to be incorporated into the new works as there is no change to the current landslide risk on the site in accordance with AGS (2007c), and</p> <p>In accordance with AS 2870 Residential Slabs and Footings, the site is to be classified as a type: .....</p> <p>I have attached design recommendations to be incorporated in the structural design in accordance with this site classification.</p> <p>I have professional indemnity insurance in accordance with CVC Geotechnical Risk Management Policy of not less than \$... million, being in force for the year in which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to &lt;the Regulator&gt;.</p> <p>I am aware that this declaration shall be used by &lt;The Regulator&gt; as an essential component in granting development consent for a structure to be erected on the site or related land without requiring submission of a geotechnical report complying with the CVC Geotechnical Risk Management Policy in support of the development application.</p>

Reference: AGS (2007c) "Practice Note Guidelines for Landslide Risk Management". Australian Geomechanics Society, Australian Geomechanics, V42, N1, March 2007.

**Section 4 Additional Documentation**

<i>List of Documents Reviewed</i>	Description	Plan or Document No.	Revision or Version No.	Date	Author

**Section 5 Geotechnical Engineer or Engineering Geologist Details**

<i>Company/ Organisation Name</i>			
<i>Name (Company Representative)</i>	Surname:	Mr /Mrs /Other:	
	Given Names:		
	Chartered Professional Status:	Registration No:	
<i>Signature</i>			Dated:    /    /    .....









which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to *<the Regulator>*.



**F**  
**FORM**

**Geotechnical  
Declaration  
Final  
Structural/Civil  
Certificate**

**Section 5 List of Site Instructions Issued**

<i>List of Documents Issued</i>	Description/Title	Reference No.	Date	Author	Associated Design Drawings	
					Yes	No

**Section 6 Additional Design Documents**

<i>List of Additional Design Documents</i>	Description	Plan or Document No.	Revision or Version No.	Date	Author

**Section 7 Structural Engineer or Civil Engineer Details**

<i>Company/ Organisation Name</i>					
<i>Name (Company Representative)</i>	Surname:	Mr /Mrs /Other:			
	Given Names:				
	Chartered Professional Status:	Registration No:			
Signature					
Dated:            /            /            .....					

**FORM**

**G**

**Geotechnical Declaration  
Final Geotechnical Certificate**

Office Use Only



**This form must be submitted to the <PCA> at the completion of a project and prior to the issue of an <occupation or subdivision certificate>.**

This form is essential, as it provides verification that the development works have been carried out in accordance with the requirements of the geotechnical report during construction, and any site inspections, and that no unforeseen ground conditions have been encountered which could have an impact on the integrity of structures on site or related land and any subsequent geotechnical requirements introduced during the construction process.

**Section 1 Related Application**

Reference	What is the Development Application number?
DA Site Address	
DA Applicant	

**Section 2 Geotechnical Report**

Details	Title:	
	Author:	Dated: / / .....
	Author's Company/ Organisation Name:	Report Reference No:

**Section 3 Work as Executed Drawings & Ongoing Maintenance Plans relevant to Geotechnical Risk Management**

List of Documents (more space on page 2 if required)	Description	Plan or Document No.	Revision or Version No.	Date	Author	

**Section 4 Declaration**

Declaration (Tick all that apply)  Yes No <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p><b>I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and I prepared or verified the geotechnical report as described above on behalf of the company below. I:</b></p> <p>inspected and am satisfied that the foundation materials upon which the structural elements of the development have been erected, complied with the requirements and recommendations specified in the geotechnical report.</p> <p>to the best of my knowledge, am satisfied that the development referred to above has been carried out in accordance with all the requirements and recommendations of the above geotechnical report, and conditions of development consent relating to geotechnical issues.</p> <p>to the best of my knowledge, am satisfied that where changes to the development occurred during construction, those changes were carried out in accordance with all the requirements and recommendations of the above geotechnical report, conditions of development consent relating to geotechnical issues, and any site instructions or site reports issued by me as listed below.</p> <p>am aware that the &lt;PCA&gt; requires this certificate prior to issuing an occupation or subdivision certificate for the above development and will rely on this certificate as verification that the above development has achieved the necessary level of &lt;tolerable risk&gt; as defined by CVC Geotechnical Risk Management Policy and in</p>
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determining the <occupation or subdivision certificate>.



FORM

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# Geotechnical Declaration

## Final Geotechnical Certificate

### Section 5 List of Site Reports or Site Instructions Issued

List of Documents Issued	Description/Title	Reference No.	Date	Author	Associated Design Drawings	
					Yes	No

### Section 6 Additional Work as Executed Drawings and Ongoing Maintenance Plans relevant to Geotechnical Risk Management

List of Additional Documents	Description	Plan or Document No.	Revision or Version No.	Date	Author

### Section 7 Geotechnical Engineer or Engineering Geologist Details

Company/ Organisation Name			
Name (Company Representative)	Surname:	Mr /Mrs /Other:	
	Given Names:		
	Chartered Professional Status:	Registration No:	

Signature

Dated: / / .....

FORM	H	Page 1 of 1				
		<h2 style="margin: 0;">Geotechnical Declaration</h2> <h3 style="margin: 0;">Building Certificate or Order</h3>				
Office Use Only						
<p>This form is to be submitted with Application for a &lt;Building Certificate&gt; or in response to an order.</p>						
<b>Section 1 Related Application</b>						
DA Number						
Site Address						
Applicant						
<b>Section 2 Geotechnical Report</b>						
Details		Title:				
		Author:		Dated:    /    /		
		Author's Company/ Organisation Name:		Report Reference No:		
<b>Section 3 Declaration</b>						
Declaration (Tick all that apply) Yes    No <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		<p>I am a geotechnical engineer or engineering geologist as defined by the CVC Geotechnical Risk Management Policy and I prepared or verified the geotechnical report as described above on behalf of the company below. I:</p> <p>have inspected the site and existing development and am satisfied that both the site and development achieves &lt;tolerable risk&gt; level requirement of the &lt;Regulator's geotechnical DCP&gt;. The attached report provides details of the assessment in accordance with the CVC Geotechnical Risk Management Policy . The report also contains recommendations as to any reasonable and practical measures that can be undertaken to reduce foreseeable risk.</p> <p>have inspected the site of the existing development. The attached report details the remedial actions required to be undertaken prior to me being prepared to certify that the site and the development achieves the &lt;tolerable risk&gt; criteria required by the CVC Geotechnical Risk Management Policy .</p> <p>to the best of my knowledge, am satisfied that where changes to the development occurred during construction, those changes were carried out in accordance with all the requirements and recommendations of the above geotechnical report, conditions of development consent relating to geotechnical issues, and any site reports or site instructions issued by me as listed below.</p> <p>am aware that the &lt;PCA&gt; requires this certificate prior to issuing a &lt;Building Certificate&gt; for the above development and will rely on this certificate as verification that the development has achieved the necessary level of &lt;tolerable risk&gt; as defined by CVC Geotechnical Risk Management Policy and in determining the &lt;occupation or subdivision certificate&gt;.</p> <p>have professional indemnity insurance in accordance with CVC Geotechnical Risk Management Policy of not less than \$.... million, being in force for the year in which the report is dated, with retroactive cover under this insurance policy extending back to the engineer's first submission to &lt;the Regulator&gt;.</p>				
<b>Section 4 List of Site Reports or Site Instructions Issued</b>						
List of Documents Issued	Description/Title	Reference No.	Date	Author	Associated Design Drawings	
					Yes	No
<b>Section 5 Geotechnical Engineer or Engineering Geologist Details</b>						
Company/ Organisation Name						
Name (Company Representative)	Surname:		Mr /Mrs /Other:			
	Given Names:					
	Chartered Professional Status:		Registration No:			
Signature		Dated:    /    / .....				