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16 July 2013

Frank Walker
c/- McIntyre Partnership
2 Hodgson Street
Kew Vic 3101

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Attention: Mr Frank Walker/Mr Peter McIntyre

Dear Sir,

**RE: Cuckoo/Wombat Lodge, Site 182 – Preliminary Site Assessment for
Underground Car Park and Cellar Extension**

Introduction

This report presents a preliminary site assessment for the extension of the existing underground garage at Site 182 together with the construction of two new underground cellars, new entrances to the lodges and a new alcove area. Cuckoo/Wombat Lodge is located at the northern end of Beehive Lane/Cobbler Lane (Site 182). It is understood that these construction works will be generally undertaken as excavation works below the level of and to the south of the existing lodge. (Refer Figure 1).

SMEC was commissioned by Mr Reg Perkins of GMR Engineering Services (GMR) by email on 13 August 2013 subsequent to receipt of SMEC's proposal, email dated 9 August 2013.

The aim of the preliminary geotechnical site assessment is to provide a geotechnical site assessment in order to satisfy the requirements of the Alpine Resorts Planning Scheme Erosion Management Overlay – Schedule 1 Management of Geotechnical Hazard for planning application purposes.

Available Information

The site assessment has been based on the following sources of information:

- McIntyre Partnership P/L drawing no. TP.01.
- SMEC Australia Pty Ltd Report AR MB 259 "Assessment of Slope Instability – Site 181, Holland Lodge" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 243 "Assessment of Slope Instability – Site 182, Twentieth Rothbury Pty Limited - Wombats" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 269 "Assessment of Slope Instability – Site 183, St Christina" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 241 "Assessment of Slope Instability – Site 184, Pontresina – H Simon" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 238 "Assessment of Slope Instability – Site 185, Cobbler Ski Lodge" dated 25 May 1999.

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- SMEC Australia Pty Ltd Report AR MB 237 "Assessment of Slope Instability – Site 194, Crosscut Lodge" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 239 "Assessment of Slope Instability – Site 199, Kandahar Ski Club" dated 25 May 1999.
- SMEC Australia Pty Ltd Report AR MB 236 "Assessment of Slope Instability – Site 192, Shaky Knees Lodge" dated 25 May 1999.
- SMEC Australia Pty Ltd Report MB 259 "Site Description – Site 181, Holland Lodge" dated 14 March 1999.
- SMEC Australia Pty Ltd Report MB 243 "Site Description – Site 182, Wombats" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 238 "Site Description – Site 185, Cobbler Ski Club" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 269 "Site Description – Site 183, St Christina" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 241 "Site Description – Site 184, Pontresina" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 237 "Site Description – Site 194, Crosscut Lodge" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 239 "Site Description – Site 199, Kandahar Ski Club" dated 12 March 1999.
- SMEC Australia Pty Ltd Report MB 236 "Site Description – Site 192, Shaky Knees Lodge" dated 12 March 1999.
- Department of Natural Resources and Environment 1:250,000 series Warburton Geological Map.
- Coffey Geosciences Pty Ltd Report AW1501/1-AA "Geotechnical Assessment, Proposed Ski Lodge Development Site 184, Engadin Site, Mt Buller, Victoria" dated 27 August 2001.
- Coffey Geosciences Pty Ltd Report AW1501/1-AD "Geotechnical Assessment, Engadin Redevelopment Site 184, Mt Buller, Victoria" dated 30 June 2004.
- Coffey Geosciences Pty Ltd Report AW1837.1AB "Geotechnical Assessment, Proposed Car Park Structure, Shaky Knees Lodge, Summit Road, Mt Buller, Vic" dated 10 January 2005.
- Coffey Geosciences Pty Ltd Report AW1703/1-AB "Geotechnical Assessment Report, Rear of Abom, Shaky Knees Lodge, Summit Road, Mt Buller, Vic" dated 10 January 2005.
- Personal knowledge of site by Mr Philip Styles (Principal Engineering Geologist, SMEC) gained over many site visits to Mt Buller.

Figure 2 shows the spatial relationship of these sites to one another.

Site Conditions

The site is located on the northern end of Beehive Lane/Cobbler Lane, Mt Buller. This area is on the northern side of a major ridge line extending east – west that slopes at generally about 15 to 18 degrees to the north east. The existing building is located downhill of the road.

The natural surface below the fill slopes down the site at about 17 degrees.

The DNRE 1:250,000 series Warburton sheet indicates that the surface geology at the site comprises Quaternary age basalt.

The Coffey reports indicate that the geology in the area is generally consistent with this with the depth to rock at Site 184 (to the south west of Site 197) was found to be between 2.3m and 3m. Depth to rock at Site 192 (north east of Site 182) was not determined as the test pit was terminated at 1.7m deep. It should be noted that fill material was present at Sites 184 and 192 and that the depth to rock at Site 192 could vary.

No evidence of slope instability was observed by either Coffey or SMEC.

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Risk Assessment

Loss of Life

Based on the “Practice Note Guidelines for Landslide Risk Management” as prepared by the Australian Geomechanics Society (AGS) Sub-Committee on Landslide Risk Management (2007), for loss of life, the individual risk can be calculated from:

$$R_{(LoL)} = P_{(H)} \times P_{(S:H)} \times P_{(T:S)} \times V_{(D:T)}$$

Where

$R_{(LoL)}$ is the risk (annual probability of loss of life (death) of an individual).

$P_{(H)}$ is the annual probability of the landslide.

$P_{(S:H)}$ is the probability of spatial impact of the landslide impacting a building (location) taking into account the travel distance and travel direction given the event.

$P_{(T:S)}$ is the temporal spatial probability (e.g. of the building or location being occupied by the individual) given the spatial impact and allowing for the possibility of evacuation given there is warning of the landslide occurrence.

$V_{(D:T)}$ is the vulnerability of the individual (probability of loss of life of the individual given the impact).

Based on the available information and our assessment of the site conditions, we have assigned the following values to the probabilities/vulnerabilities above:

$$P_{(H)} = 10^{-5} \text{ (Rare)}$$

$$P_{(S:H)} = 10^{-2} \text{ (Likely)}$$

$$P_{(T:S)} = 10^{-3} \text{ (Possible)}$$

$$V_{(D:T)} = 10^{-3} \text{ (Possible)}$$

$$\text{Therefore, } R_{(LoL)} = 10^{-13}.$$

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The AGS suggested loss of life tolerable risk for an existing slope / existing development is 10^{-4} /annum. On this basis, the risk of loss of life for Bluff Lodge is considered to be acceptable.

Property

The risk matrix, presented in Figure 3, is a simple, qualitative method of relating the hazard (what could happen) to the impacts (consequence of the hazard), to obtain the risks. Figure 4 presents descriptions for the likelihood and consequence of events or scenarios. A measure of the risks includes the vulnerability of installations, costs and many complex issues such as environment, safety, social, functionality, sustainability and reputation. The definitions for hazard and risk assessment used in this report are those used by the Australian Geomechanics Sub-Committee on Landslide Risk Management (2007).

Based on the available information and our knowledge of the site, it is considered that the likelihood of slope instability occurring at this site is “Rare”. The consequences to property should slope instability occur are assessed as being “Medium”. This gives a risk rating of “Low” which is considered to be acceptable for the proposed works.

Schedule 1 Management of Geotechnical Hazard

Attachment A presents a completed Form 1 as required by the Alpine Resorts Planning Scheme Erosion Management Overlay – Schedule 1 Management of Geotechnical Hazard. This has been provided to assist GMR in obtaining planning permission for the proposed works.

Attachment B presents a copy of our certificate of currency for Professional Indemnity Insurance as required by the Planning Scheme.

Closure

We trust this meets your present needs. If you have any questions regarding this matter, please do not hesitate to contact the undersigned.

Yours sincerely,



Philip Styles
Principal Engineering Geologist
MAIG RPGeo 10,087

Attachments:

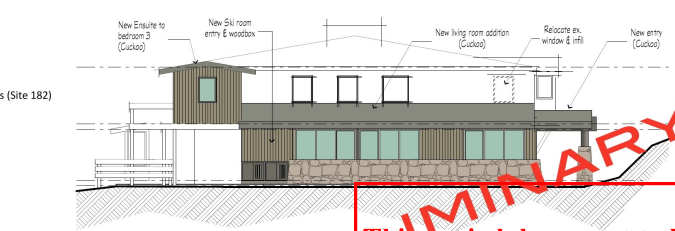
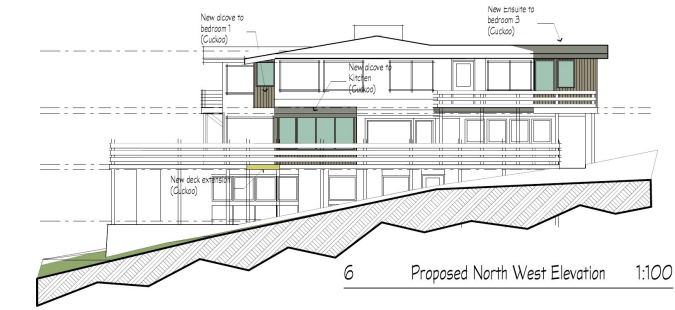
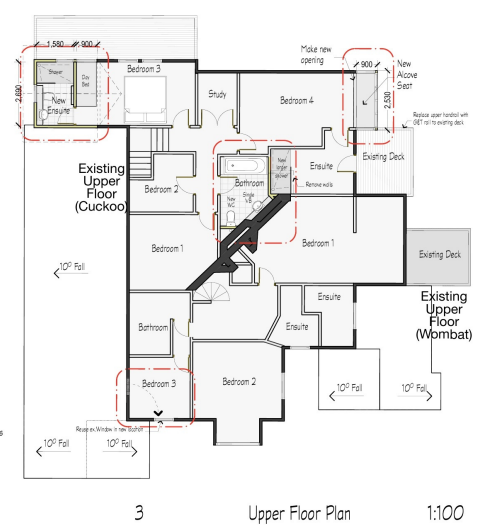
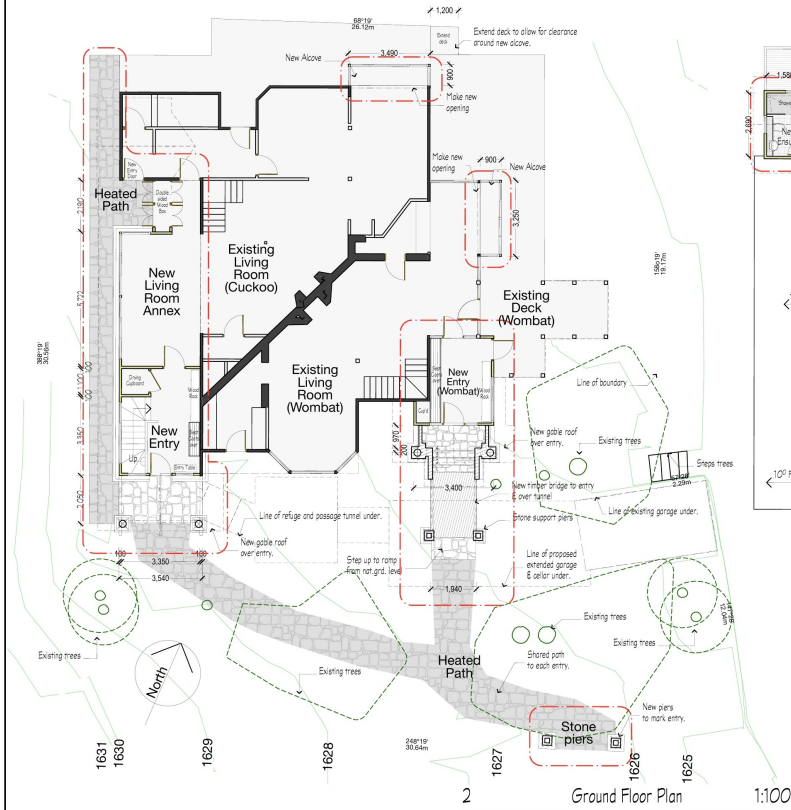
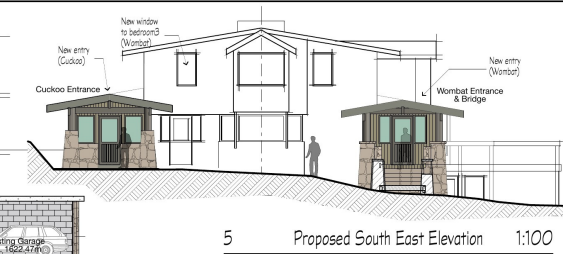
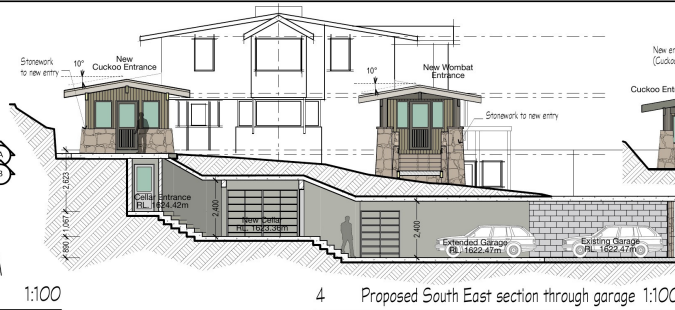
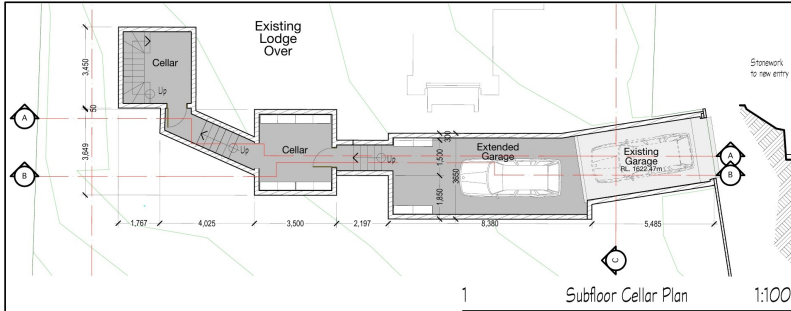
A - Form 1

B - Certificate of Currency

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Area Summary

Gross Floor Areas Existing	=134.31m ²
Lower ground floor	=134.31m ²
Ground floor	=151.52m ²
Upper Floor	=458.30m ²
Total	=668.44m²

Proposed additions	=64m²
Gross Floor Areas Proposed (Existing + Proposed)	=522.3m²
Area of Site	= 837.79m²



Figure 1
Cuckoo/Wombats (Site 182)
Site Works
Scale : As Shown

PRELIMINARY

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Figure 3. Risk Matrices¹

Qualitative Risk Analysis Matrix – Level of Risk to Property

Likelihood		Consequences to Property (With indicative approximate cost of damage)				
	Indicative Value of Approximate Annual Probability	1: Catastrophic 200%	2: Major 60%	3: Medium 20%	4: Minor 5%	5: Insignificant 0.5%
A – Almost Certain	10 ⁻¹	VH	VH	VH	H	M or L ⁽¹⁾
B – Likely	10 ⁻²	VH	VH	H	M	L
C – Possible	10 ⁻³	VH	H	M	M	VL
D – Unlikely	10 ⁻⁴	H	M	L	L	VL
E – Rare	10 ⁻⁵	M	L	L	VL	VL
F – Barely Credible	10 ⁻⁶	L	VL	VL	VL	VL

Notes: ⁽¹⁾ For Cell A5, MAY BE SUBDIVIDED SUCH THAT A CONSEQUENCE OF LESS THAN 0.1% IS Low Risk.

⁽²⁾ When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

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¹ Figures 1 and 2 have been taken from “Practice Note Guidelines For Landslide Risk Management 2007”, B. Walker et alia, Australian Geomechanics Vol 42 No 1 March 2007

Risk Level Implications

Risk Level		Example Implications ⁽³⁾
VH	Very High Risk	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and impractical. Work likely to cost more than the value of the property.
H	High Risk	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	Moderate Risk	May be tolerated in certain circumstances (subject to Regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low Risk should be implemented as soon as possible.
L	Low Risk	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	Very Low Risk	Acceptable. Manage by normal slope maintenance procedures.

Notes: ⁽³⁾ The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide.

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Figure 4. Risk Matrix Definitions

Qualitative Measures of Likelihood

Approximate Annual Probability		Implied Indicative Landslide Recurrence Interval		Description	Descriptor	Level
Indicative Value	Notional Boundary					
10^{-1}	5x10 ⁻²	10 years	20 Years	The event is expected to occur over the design life.	Almost Certain	A
10^{-2}		100 years		The event will probably occur under adverse conditions over the design life.	Likely	B
10^{-3}	5x10 ⁻³	1000 years	200 years	The event could occur under adverse conditions over the design life.	Possible	C
10^{-4}	5x10 ⁻⁴	10,000 years	2,000 years	The event might occur under very adverse conditions over the design life.	Unlikely	D
10^{-5}	5x10 ⁻⁵	100,000 years	20,000 years	The event is conceivable, but only under exceptional circumstances over the design life.	Rare	E
10^{-6}	5x10 ⁻⁶	1,000,000 years	200,000 years	The event is inconceivable or fanciful over the design life.	Barely Credible	F

Note: ⁽⁴⁾ The table should be used from left to right; use Approximate Annual Probability or Description to assign Descriptor, not *vice versa*.

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Qualitative Measures of Consequences to Property

Approximate Cost of Damage		Description	Descriptor	Level
Indicative Value	Notional Boundary			
200%	100% 40% 10% 1%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.	Catastrophic	1
60%		Extensive damage to most of structure and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.	Major	2
20%		Moderate damage to some of structure and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.	Medium	3
5%		Limited damage to part of site requiring some reinstatement stabilisation works.	Minor	4
0.5%		Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix).	Insignificant	5

- Notes:
- (5) The Approximate Cost of Damage is expressed as a percentage of market value, being the cost of the improved value of the unaffected property which includes the land plus the unaffected structures.
 - (6) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the property (land plus structures), stabilisation works required to render the site to tolerable risk level for the landslide which has occurred and professional design fees, and consequential costs such as legal fees, temporary accommodation. It does not include additional stabilisation works to address other landslides which may affect the property.
 - (7) The table should be used from left to right; Approximate Cost of Damage or Description to assign Descriptor, not *vice versa*.

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ATTACHMENT A
EROSION MANAGEMENT OVERLAY
SCHEDULE 1 MANAGEMENT OF GEOTECHNICAL HAZARD

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Department of Sustainability and Environment

ALPINE RESORTS PLANNING SCHEME
Erosion Management Overlay – Schedule 1 Management of Geotechnical Hazard

FORM 1

Declaration and/or verification made by geotechnical engineer or engineering geologist as part of a geotechnical report

Name of application: CUCKOO/WOMBATS LODGE CAR PARK & CELLAR EXTENSION

Address of subject site: SITE 182, BEEHIVE / CUCKOO LANE, Mt BULLER, 3723

I, PHILIP STYLES (insert name) of SMEC AUSTRALIA PTY LTD (trading or company name)

on 16 August 2013 (insert date)

certify that I am a geotechnical engineer or engineering geologist as defined by the Erosion Management Overlay (Schedule 1 – Management of Geotechnical Hazard) and I have: (tick appropriate box):

prepared the Geotechnical Report referenced below in accordance with the Australian Geomechanics Society's Geotechnical Risk Management Guidelines and Clause 3 of the EMO1

or

technically verified that the geotechnical report referenced below has been prepared in accordance with the AGS's Geotechnical Risk Management Guidelines and Clause 3 of the EMO1.

Geotechnical report details:

Report title:	<u>CUCKOO/WOMBAT LODGE, SITE 182 - PRELIMINARY SITE ASSESSMENT FOR UNDERGROUND CARPARK & CELLAR EXTENSION</u>
Report date:	<u>16 AUGUST 2013</u>
Report reference:	<u>AS ABOVE</u>
Author:	<u>PHILIP STYLES</u>
Author's affiliation:	<u>MEMBER AUST INST GEOSCIENTISTS RPCEO 10,087</u>

Documentation relied upon in report preparation:

<u>SMEC Rpts ARMB 259, 263, 264, 241, 238, 237, 229, 236, MB259, 215, 269, 241, 238, 237, 239, 236, COFFEY RPTS, AW1501/1-AD, 1501/1-AD, AW187-1A8, AW1803/1-AD, GEOLVIC MAD WARBURTON 1125V, 00V</u> <u>PERSONAL KNOWLEDGE</u>
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I am aware that the Geotechnical Report I have either prepared or am technically verifying for the above development is to be submitted in support of a development application for the proposed development SITE 182 EXTENSIONS (name of development) requiring approval from the Minister for Planning.

Further, I hold a current professional indemnity insurance policy of at least \$2 million, evidence of which is attached with this form.

Name PHILIP STYLES Signature Philip Styles
Date 16/8/13



**ATTACHMENT B
CERTIFICATE OF CURRENCY**

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ENGINEERING CONSULTANTS UNDERWRITERS LTD.

Certificate of Currency

We hereby certify that the undermentioned Insurance Policy has been issued with effect from 4:00 p.m. EST on **June 30, 2013**.

Class of Insurance: Professional Indemnity
Insured: SMEC Holdings Limited, SMEC International Pty. Ltd. and their subsidiaries as noted in Appendix A and Joint Ventures.
Period of Insurance: June 30th 2013 at 4:00 p.m. EST to June 30th 2014 at 4:00 p.m. EST
Form: Claims Made
Policy No.: ECUL-PI-002-2013
Per Claim Limit: AUD 2,000,000
Annual Aggregate Limit: AUD 2,000,000
Wording: Insurer will pay the Losses of the Insured that arises from any Claim first made against the Insured and which is notified to the Insurer during the Policy Period for any civil liability arising out of the conduct of the professional business.
Jurisdiction: Worldwide excluding U.S.A. and Canada
Territory: Worldwide excluding U.S.A. and Canada
Reinsured By: Swiss Reinsurance Company Limited, and Liberty International Underwriters


Adrienne Hintz
Authorized Representative
Engineering Consultants Underwriters Ltd.

Butterfield Bank Building, 6th Floor, 65 Front Street, Hamilton HM 12, Bermuda
Tel: (441) 295-2144; Fax: (441) 292-8062
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**Appendix A
Subsidiaries of SMEC Holdings Limited
Dated June 25, 2013**

<p>ACE Consultants Ltd. Brisbane City Enterprises Pty Ltd Energy Holdings Limited Engineering General Consultants EGC (Pvt.) Ltd Frontier Energy Limited Frontier Hydro Limited Himalayan Green Energy Private Limited Ocyana Pvt Ltd PT SMEC Denka Indonesia SMUrban Pty Ltd t/a SMEC Urban. SMEC Asia Limited SMEC Australia Pty Limited SMEC Bangladesh Limited SMEC Beijing Co Ltd SMEC Central Asia LLP SMEC China Engineering & Management Consulting Co. Engineering Consultants Contracting Limited SMEC New Zealand Limited</p>	<p>SMEC Holdings Limited SMEC India Pvt Ltd SMEC International Pty Limited SMEC International (Malaysia) SDN. Berhad SMEC Mongolia LLC SMEC Operations Pty Limited SMEC Pakistan (Pvt) Limited SMEC Philippines Inc. SMEC PNG Ltd SMEC Services Pty Limited SMEC Vietnam Joint Stock Company Snowy Mountains Engineering Corporation Limited TT Energy Private Ltd Combined Engineering & Integrated Solutions (Pvt) Limited SMEC Energy SDN Berhad SMEC Foundation Limited Lean and Hayward Pty Ltd</p>
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 Adrienne Hintz
 Authorized Representative

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