

**BEFORE THE HEARINGS PANEL
FOR THE QUEENSTOWN LAKES PROPOSED DISTRICT PLAN**

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of Hearing Stream 13 –
Queenstown
Mapping Annotations
and Rezoning Requests

**SUPPLEMENTARY REBUTTAL EVIDENCE OF KIMBERLEY BANKS
ON BEHALF OF QUEENSTOWN LAKES DISTRICT COUNCIL**

**QUEENSTOWN MAPPING
GROUP 1B QUEENSTOWN URBAN - FRANKTON AND SOUTH**

11 July 2017

 **Simpson Grierson**
Barristers & Solicitors

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1. INTRODUCTION

- 1.1 My full name is Kimberley Anne Banks. I am a Senior Planner and have been employed by the Queenstown Lakes District Council since 2015.
- 1.2 My qualifications and experience are set out in my statements of evidence in chief dated 25 May 2017.
- 1.3 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise except where I state that I am relying on the evidence of another person. The Council, as my employer, has agreed for me to give expert evidence on its behalf in accordance with my duties under the Code of Conduct.

2. SCOPE

- 2.1 My supplementary rebuttal evidence is provided in response to the following evidence filed on behalf of:
- (a) Mr Edgar (Planning) and Mr Baxter (Landscape) for Land Information New Zealand (661);
 - (b) Mr Bryant (Geotech) and Mr Vivian (Planning) for Kerr Ritchie Architects (48); and
 - (c) Ms Millton (Planning) for B Grant (318, 434);
- 2.2 My evidence has the following attachments:
- (a) **Attachment A:** Decision Notice – Variation to RM980009; and
 - (b) **Attachment B:** Canterprise review of consent variation application, 31 August 2001.
- 2.3 All references to the Proposed District Plan (**PDP**) provision numbers are to the Council's Reply version of those provisions, unless

otherwise stated. In addition, I have used tab references to documents included in the Council's Bundle of Documents (**CB**) dated 10 March 2017.

3. MS LUCY MILLTON FOR B GRANT (318, 434)

3.1 Ms Millton has submitted planning evidence on behalf of Mr Grant. I note that in my s42A I rejected this submission based on natural hazards risks (an active schist debris landslide hazard is mapped on the QLDC natural hazards database) and the lack of detailed information in order to determine the appropriateness of rezoning this site to Low Density Residential Zone (**LDRZ**). I note that no geotechnical evidence specific to this rezoning proposal has been provided by the submitter, and instead copies of assessments undertaken in 1997 and 1998 have been provided.

3.2 At her paragraph 2.3 Ms Millton states that the notified Rural zoning prevents any permitted development from occurring in an area that was previously determined to be appropriate for more intensified residential developments, and on this point makes reference to RM980009. To provide further background, it is my understanding from a review of Council's consent file for RM980009 that consent was initially granted for 5 allotments on 15 September 1999, as shown in **Figure 1** below:

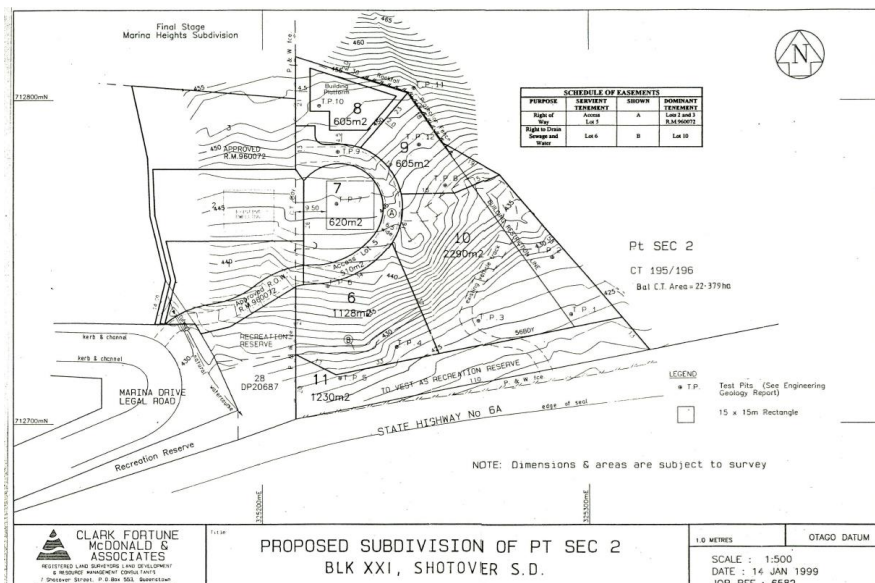


Figure 1: Proposed subdivision to create five (5) allotments, RM980009

3.3 A variation to the conditions of consent was subsequently sought by the applicant in November 2001, and the QLDC Decision Notice includes the following comments: “The variation of consent is requested as geotechnical reports have produced new evidence on the stability of the land” and further that: “The result of this information [is] that the plan of subdivision has been amended so three rather than five residential lots are now being created”. I include this Decision Notice within Attachment A, and the approved plans are shown in **Figure 2** below which reflect only three approved allotments, being Lots 6, 7 and 10 D.P.345807.

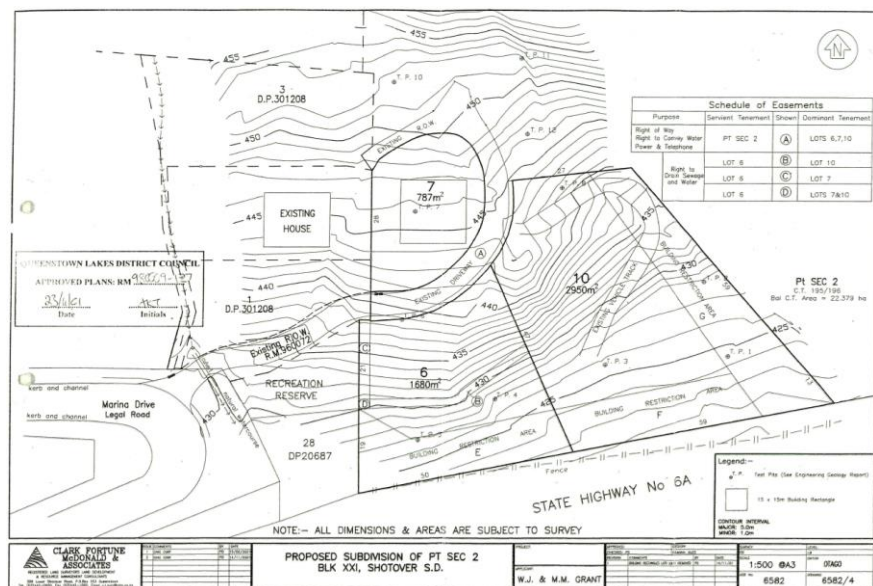


Figure 2: Approved subdivision consent to create three (3) allotments, RM980009, 23 November 2001.

3.4 Relating to Ms Millton's view (at paragraph 2.3) that the area “was previous [sic] determined to be appropriate for more intensified residential developments on smaller allotments”, I disagree however that this assumption can be made from this previous resource consent. RM980009 initially enabled 5 allotments, which was subsequently reduced to 3 following revised geotechnical analysis. The resource consent also gave specific consideration to the natural hazard mitigation approach required for this scale of development (namely the construction of a rockfall protection fence as required by condition 8(f)), in addition to building platforms which were defined following analysis of sub-surface conditions. I note that condition 8(f) and the design of this rockfall protection fence was specific to the

approval of 3 lots only, and there is no information provided to indicate whether this mitigation solution would also be appropriate under rezoning to LDRZ, which could enable more than 3 lots. I also understand that this fence has not yet been constructed.

3.5 **Figures 3 and 4** below are extracts from a Canterprise report prepared in 2001 for the consent variation application (Refer **Attachment B**), and these provide information obtained on sub-surface conditions following geotechnical analysis. I consider these figures demonstrate that the consent process enabled an assessment of the appropriate scale of development for this land, and in locations with appropriate geotechnical stability.

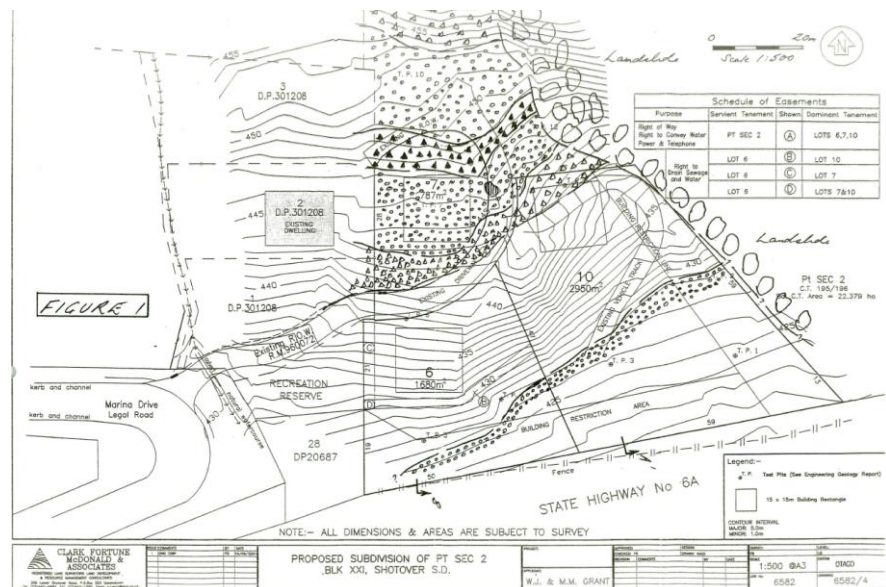


Figure 3: Extract from Canterprise review of amended subdivision proposal and indicating proposed building platforms, 31 August 2001.

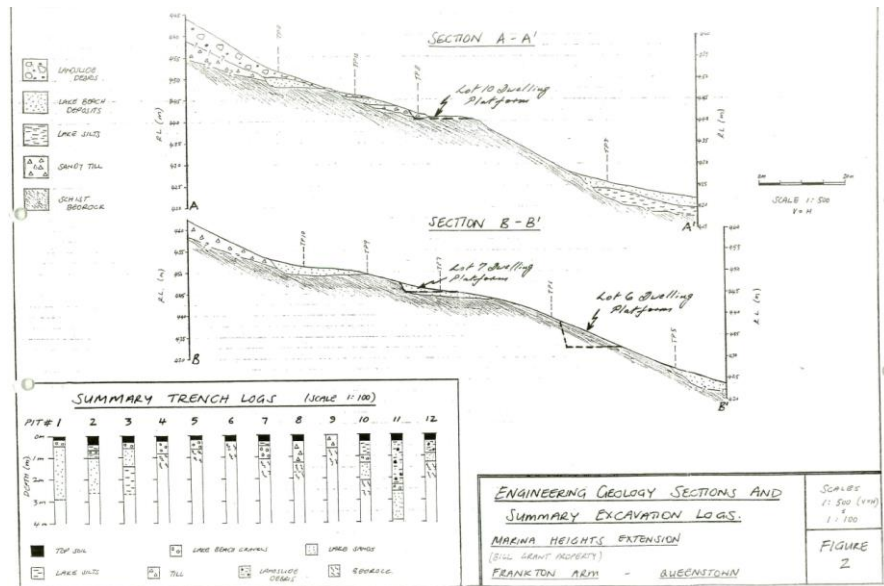


Figure 4: Extract from Canterprise review of amended subdivision proposal and illustrating location of proposed building platforms, 31 August 2001.

3.6 Mr Watts has provided geotechnical rebuttal evidence for QLDC, and based on a review of the 1997 Canterprise report and the 1998 Tonkin and Taylor review, recommends further investigation of the risk of movement of the active landslide during seismic or static conditions; and that the rockfall risk is further analysed before development is approved on the site. Mr Watts does not consider the land is suitable for development of a low density residential zone until the further investigation has been undertaken.

3.7 In my view, the geotechnical reports provided by Ms Milton cannot be relied upon for the proposed rezoning, for the following reasons:

- (a) they were undertaken approximately 10 years ago, and conditions may have changed since this time;
- (b) the reports pre-date the 1999 floods, and therefore they do not consider the effects of this particular event;
- (c) mitigation measures including a rockfall protection fence were recommended on the basis of three approved lots, and not on the basis of the level of intensity that could be enabled by the LDRZ sought; and
- (d) no assessment of the level of risk or the likelihood of occurrence has been provided.

3.8 Based on this, and on the rebuttal evidence of Mr Watts, I do not consider the level of evidence provided at this point in time provides adequate certainty that:

- (a) the density of development enabled by the zoning would not significantly increase natural hazard risk (Policy 28.3.1.2 and 28.3.2.1 **[CB19]**);
- (b) natural hazard risk can be avoided or managed for the level of permitted development enabled under a LDRZ without resource consent (1 unit per 450m², Rule 7.4.9 **[CB7]**); and
- (c) mitigation can be successfully provided on site (27.5.6 **[CB18]**).

3.9 Whilst it may be possible to address natural hazards at resource consent stage, I consider that the rezoning of land would set an expectation that the density of development could be achieved across the entire zoned area. Furthermore, Policy 28.3.2.1 of Chapter 28 of the PDP is "*Avoid significantly increasing natural hazard risk*"¹. Because the 'significance' of the level of risk for this land remains unknown for the intensity of development sought by the rezoning, I remain opposed to this submission. I consider that the Rural zone provides a more appropriate framework for the consideration of future housing proposals via resource consent. The Rural zone would not set any expectation over the density of development which could be achieved on the site.

KELVIN HEIGHTS

4. MR PADDY BAXTER FOR LAND INFORMATION NEW ZEALAND (661)

4.1 Mr Baxter has filed evidence on behalf of LINZ, and planning evidence has been filed by Mr Edgar, which incorporates a hazard assessment by Mr Bryant (Geoconsulting). I note that in my s42A I rejected this submission based on natural hazards risks and the lack of detailed information in order to determine the appropriateness of rezoning this site.

¹ I acknowledge Policy 4.5.1 of the decisions version of the Proposed Regional Policy Statement (which must be had regard to) and note that this remains subject to appeal.

- 4.2 Mr Bryant (consistent with his report relating to submission 48) finds that the landslide on Peninsula Hill to the south of the site is dormant and does not present any risk to the site. Mr Bryant also identifies potential instability along the terrace edge, and recommends further investigation of the rock fall hazard.
- 4.3 Mr Watts has provided geotechnical rebuttal evidence for QLDC, and recommends that further investigation is undertaken to refine the geological model for the landslide hazard and this should include an assessment of risk of movement of the active landslide during seismic or static conditions. Mr Watts is of the view that the evidence of Mr Bryant does not contain sufficient information to demonstrate it is suitable for low density residential development.
- 4.4 I note that both the structure plan and the geotechnical evidence of Mr Bryant identify a central gully that may naturally contain rockfall and debris flow, and play a role in the mitigation of hazard risk. Based on this information, I reconsider my statements made at paragraphs 24.16 to 24.19 of my s42A report in which I considered that the HDRZ may be a suitable zone for the site. I consider that the HDRZ may be too intensive for the range of constraints affecting this site; and would set an inappropriate precedent that this level of intensity can be practically achieved; which also has flow on effects for infrastructure planning.
- 4.5 However, based on the current evidence of Mr Bryant and Mr Watts, I continue to reject this submission because there has been no assessment of the level of risk based on the zoning sought, or the likelihood of occurrence. I do not consider the level of evidence provided at this point in time provides adequate certainty that:
- (a) the density of development enabled by the zoning would not significantly increase natural hazard risk (Policy 28.3.1.2 and 28.3.2.1 **[CB19]**);
 - (b) natural hazard risk can be avoided or managed for the level of permitted development enabled without resource consent

(eg Rules 7.4.9, 8.4.10 and 9.4.3 [CB7, CB8 and CB9]);
and

(c) mitigation can be successfully provided on site (Rule 27.5.6 [CB18]).

4.6 Whilst it may be possible to address natural hazards at resource consent stage, I consider that the rezoning of land would set an expectation that the density of development could be achieved across the entire zoned area. Furthermore, the same considerations apply as noted in my paragraph 3.9 above. Therefore, because the 'significance' of the level of risk for this land remains unknown for the intensity of development sought by the rezoning, I remain opposed to this submission. I consider that the Rural zone provides a more appropriate framework for the consideration of future housing proposals via resource consent. The Rural zone would not set any unrealistic expectation over the density of development that could be achieved on the site.

5. MR VIVIAN AND MR BRYANT FOR KERR RITCHIE (48)

5.1 Mr Vivian has submitted planning evidence on behalf of Kerr Ritchie, and Mr Bryant provides geotechnical evidence. I note that in my s42A I rejected this submission based on natural hazards risks and the lack of detailed information in order to determine the appropriateness of rezoning this site.

5.2 In relation to the mapped landslide hazard, Mr Bryant has stated that "*the landslide is now considered dormant... accordingly there is no threat to any development proposal no matter where it is sited*". The rebuttal evidence of Mr Watts for QLDC however recommends that further analysis is undertaken to determine if the landslide could be reactivated during seismic or static conditions.

5.3 In relation to rockfall hazard, Mr Bryant notes that a rockfall source is present above the property and there is still a potential for rockfall, and that a further study would be necessary to assess the threat. He notes that should a further study indicate a higher than anticipated threat, then some form of rockfall barrier may be necessary. Mr

Watts considers that there appears to be some uncertainty regarding the magnitude of the rock fall risk, and that this hazard should also be assessed and quantified further. Mr Watts is of the view that these further investigations are necessary before a decision on the suitability of development on the site can be made.

5.4 The assessment of Mr Bryant, while identifying landslide and rockfall hazards, does not assess the level of risk based on the zoning sought, or the likelihood of occurrence. I do not consider the level of evidence provided at this point in time provides adequate certainty that:

- (a) the density of development enabled by the zoning would not significantly increase natural hazard risk (Policy 28.3.1.2 and 28.3.2.1 **[CB19]**);
- (b) natural hazard risk can be avoided or managed for the level of permitted development enabled under the LDRZ without resource consent (1 unit per 450m², Rule 7.4.9 **[CB7]**); and
- (c) mitigation can be successfully provided on site (27.5.6 **[CB18]**).

5.5 Whilst it may be possible to address natural hazards at resource consent stage, I consider that the rezoning of land would set an expectation that the density of development could be achieved across the entire zoned area. Furthermore, the same considerations apply as noted in my paragraph 3.9 above. Therefore, I remain opposed to this submission, and I consider that the Rural zone provides a more appropriate framework for the consideration of future housing proposals via resource consent. The Rural zone would not set any unrealistic expectation over the density of development that could be achieved on the site.

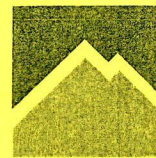


Kimberley Banks

11 July 2017

Attachment A

Decision Notice – Variation to RM980009



**QUEENSTOWN
LAKES DISTRICT
COUNCIL**

File: RM 980009 – 125 & 127
Number: 2907127800
Compliance

23 November 2001

WJ & MM Grant
C/- Clark Fortune McDonald
P O Box 583
QUEENSTOWN

Dear Sir/Madam

DECISION OF THE QUEENSTOWN LAKES DISTRICT COUNCIL

RESOURCE MANAGEMENT ACT 1991

WJ & MM GRANT – RM980009 – 125 & 127

EXTENSION OF TIME AND VARIATION TO CONDITIONS OF CONSENT

I refer to your application for an extension of time, and a variation of conditions to resource consent RM980009. The variation of consent is requested as geotechnical reports have produced new evidence on the stability of the land. The extension of time is requested because of the delays incurred in producing the geotechnical reports.

The request was considered under delegated authority pursuant to Section 34 of the Resource Management Act 1991 on 23 November 2001.

The subject site is located on the northern side of State Highway 6A (Queenstown - Frankton Road) immediately to the east of the Marina Heights subdivision. It is legally described as Part Sections 2 and 4 Block XX Shotover Survey District.

Two decisions have been issued for Grant both relating to RM980009. The first was released on 6 July 1998, stating that the Committee needed more information before it could make a final decision. The second was issued 15 September 1999, granting consent for the subdivision of a 23 hectare title to create five residential allotments subject to conditions. It is

the 15 September 1999 consent that is referred to throughout this decision and that the variation and extension of time are sought for.

The variation was considered on a non-notified basis in accordance with Section 127(3) of the Resource Management Act 1991. The variation proposes to remove Lots 8 and 9 from the subdivision and increase the size of the balance lot it is considered that the degree of adverse effects is resulting from the change in conditions is likely to be decreased.

Decision

Extension of Time

Consent is granted pursuant to Section 125 of the Act to extend the lapsing date of consent RM980009, which lapsed on 15 September 2001 for six months. It will now lapse on 15 March 2002.

Variation

Consent is granted pursuant to Section 127 of the Act, such that the following conditions of resource consent RM980009 are varied, as follows:

1. Condition 1 is deleted and replaced by the following text:

“That the activity be undertaken in accordance with the Clark Fortune McDonald plans and specifications submitted with the application stamped as approved on 23 of November 2001 and attached to this decision, with the exception of the amendments required by the following conditions of consent.”

2. Condition 4 is deleted and replaced by the following text:

“Prior to certification pursuant to section 224 and in accordance with Section 221, of the Act, the consent holder shall prepare and submit for the approval of the Principal: Resource Management - CivicCorp consent notices to be registered on the new Certificate’s of Title for Lots 6 and 10 for the performance of the following conditions on an on-going basis:

- a) *The location of dwellings in Building Restriction Areas E, F, and G is prohibited.*
- b) *If any vegetation is removed from the Building Restriction Areas E and F the owner shall revegetate it to the satisfaction of the Principal: Resource Management.”*

3. Condition 5 is deleted.

4. Condition 8 is deleted and replaced by the following text:

“Prior to the commencement of any works on the land being subdivided and prior to certification pursuant to Section 223 of the Resource Management Act 1991, the applicant shall provide to the Queenstown Lakes District Council for approval copies of specifications, calculations and design plans as is considered by Council to be both necessary and adequate to detail the following engineering works required:

- a) *The provision of a water supply system, which is adequate to supply each of the new allotments created by the subdivision. The supply shall comply with the requirements of the New Zealand Fire Service Code of Practice 1992 and NZS 4404:1981 for a class E risk classification.*
- b) *The provision of a separate water supply connection to each of the allotments created by the subdivision. This shall be achieved by constructing a ridermain sized in accordance with NZS 4404:1981 or watermain to the frontage of each allotment and providing a separate connection and stopcock for each allotment.*
- c) *The provision of a separate sanitary sewer connection to each of the allotments created by the subdivision. This shall be achieved by constructing a reticulation network that connects to the Council's sewer main in the legal road immediately adjacent to the western boundary.*
- d) *The provision of a separate stormwater connection to each of the allotments created by the subdivision. This shall be achieved by constructing a reticulation network, which connects to the Council's stormwater main in the legal road at the southwestern corner of the subdivision site. Stormwater from the proposed Rights of Way shall be discharged to an approved oil and grit interceptor before being discharged into the stormwater reticulation network.*
- e) *The provision for an overland flow path for the passage of any stormwater unable for any reason to pass through the stormwater drainage system. The applicant shall ensure that future residential dwellings do not obstruct these paths.*
- f) *The construction of a rockfall protection fence in accordance with the recommendations contained in the geotechnical Evaluation of the proposed subdivision carried out by David H Bell of Canterbury dated 31 August 2001 and submitted with the application.*
- g) *The construction of proposed right of way A in accordance with NZS4404:1981. The access lot shall be a minimum width of 6.5 metres with a sealed carriageway of 5metres wide.*
- h) *The provision of a vehicle crossing to each allotment created by the subdivision. All vehicle crossings shall be constructed in accordance with NZS 4404:1981 or such other standard as approved by the Council.*
- i) *The consent holder shall specify procedures to be put in place to minimise the spread of dust during earthworks construction.”*

5 Condition 9(a) is deleted and replaced by:

“Pay to the Council a headworks fee of \$2,730.00 (GST inclusive) towards the cost of upgrading the public water supply system to ensure the adequacy to cater for the additional allotment to be created by this development. This figure is based on \$910.00 per allotment.”

6 Condition 9(b) is deleted and replaced by:

“Pay to the Council a headworks fee of \$5,550.00 (GST inclusive) towards to the cost of upgrading the Council’s sanitary sewage system to ensure its adequacy to cater for the additional allotment to be created by the development. This figure is based on \$1,850.00 pre allotment.”

7 Condition 9(e) is deleted and replaced by:

“Pay to the Queenstown Lakes District Council a reserves contribution of \$10,500.00 (GST inclusive) based on 7.5% of the value of each new allotment. The contribution is calculated as follows:

<i>Lot 6</i>	<i>45,000.00 x 7.5% = \$3,375.00</i>
<i>Lot 7</i>	<i>50,000.00 x 7.5% = \$3,750.00</i>
<i>Lot 10</i>	<i>45,000.00 x 7.5% = \$3,375.00”</i>

Reasons for the Decision

Background

Resource consent was sought in 1998 for the subdivision of a 23-hectare lot into 5 residential allotments with a balance Lot of 22.3 hectares. The application was notified and two hearings held. The first was to determine whether a CivicCorp request for a peer review of a geotechnical report was reasonable. The Committee decided it was and the decision was issued on 6 July 1998. At the second hearing Committee granted consent for the subdivision, subject to conditions. This decision was issued on 15 September 1999. It is this decision that the applicant is now seeking an extension of time and variation for.

In February 2000 Queenstown Lakes District Council notified the consent holder that the conditions of consent were to be reviewed. In response to this the applicant commissioned a geotechnical report. This took approximately 1 year to be produced. Following that a further geotechnical report was requested that took three months to be produced. As a result of these reports the plan of subdivision was significantly changed. The applicant now requires a variation for the amended plans and an extension of time of six months to gain Section 223 approval.

Extension of Time

Section 125 of the Resource Management Act 1991 allows the Council to grant an application for an extension to the duration of a resource consent provided that such an application is

received within the first three months of the date of expiration, and provided that the statutory tests contained in Section 125 are satisfied.

The relevant tests are:

- “(i) *Substantial progress or effort has been made towards giving effect to the consent and is continuing to be made; and*
- (ii) *The applicant has obtained approval from every person who may be adversely affected by the granting of the extension, unless in the authority’s opinion it is unreasonable in all the circumstances to require the obtaining of every such approval; and*
- (iii) *The effect of the extension on the policies and objectives of any plan is minor.”*

Substantial Progress or Effort

The applicant had 24 months to give effect to the consent. It took fifteen of these months for an outside agency to produce the geotechnical reports. As these reports were a Council requirement, this is considered to be a circumstance outside the control of the applicant that hindered substantial progress or effort being made.

It is considered that continuous substantial effort has been made towards giving this effect to this consent as the above matters were beyond the control of the applicant.

Written Approvals

Section 125(1)(b)(ii) is not concerned with the adverse effects of the activity itself. Rather it is concerned that the extension of time to give effect to the activity authorised by the consent will have adverse effects on involved parties.

Such adverse effects include any uncertainties caused by the delay in construction activities, or any effects related to any changes to the physical environment or to activities in the vicinity since the granting of this consent.

There have been few changes to the surrounding environment since the granting of the consent. Consequently no persons are considered to be adversely affected by the granting of the extension.

Effects of the extension on the Objectives and Policies of the Plan

It is not considered that this present proposal will impact on the integrity of the policies and objectives of the either the Transitional or Proposed District Plan.

Consequently the application passes the final test under Section 125 for an extension of time for a resource consent and an extension can be granted for a further six months from the lapsing of this consent, being 15 March 2002.

This request for an extension of time is reasonable, as many of the matters have been outside the control of the consent holder.

Variation to the Conditions of Consent

The applicant is seeking a variation to the conditions of consent. In order for the variation to be considered Section 127 of the Act states that there must have been a change in circumstances that has caused a condition to become inappropriate or unnecessary.

It is considered that because new geotechnical information has become available since consent was originally granted there has been a change in circumstances. The result of this information is that the plan of subdivision has been amended so three rather than five residential lots are now being created. Lots 8 and 9 are now incorporated into the balance lot. This has resulted in the amendment of conditions 9(a), 9(b) and 9(e) as fewer financial contributions are required. Lot 11, which was set aside as reserve under Condition 4, has been incorporated into Lots 6 and 10. A building restriction line has been implemented to ensure that the land remains vacant.

Lot 5 was part of the original subdivision as an access lot. However since the granting of consent the Plan of Subdivision has been amended and Lot 5 is now part of the balance lot, Part Section 2 and Lots 6, 7 and 10 have a right of way easement over it, causing Condition 5 to be superfluous. Condition 8(g) has been amended accordingly.

The applicant requested that condition 9(g) be amended to become a consent notice. However the works it requires are not on-going and so this change would not be an appropriate use of a consent notice.

The applicant also asked that stormwater from the three lots be allowed to drain into a natural watercourse on the property. This request is not granted because the consequences if the culvert under State Highway 6 fails are more than minor as the Highway is the main route into Queenstown.

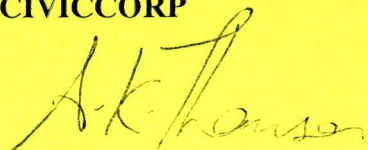
Other Matters

The costs of processing the application are currently being assessed and you will be advised under separate cover whether further money is required or whether a refund is owing to you.

Should you not be satisfied with the decision of the Council and objection may be lodged in writing to the Council setting out the reasons for the objection under Section 357 of the Resource Management Act 1991 not later than 15 working days from the date this decision is received.

If you have any enquiries please contact Angela Thomson on phone (03) 442 4777.

Prepared by
CIVICCORP



Angela Thomson
PLANNER

Reviewed and Approved by
CIVICCORP



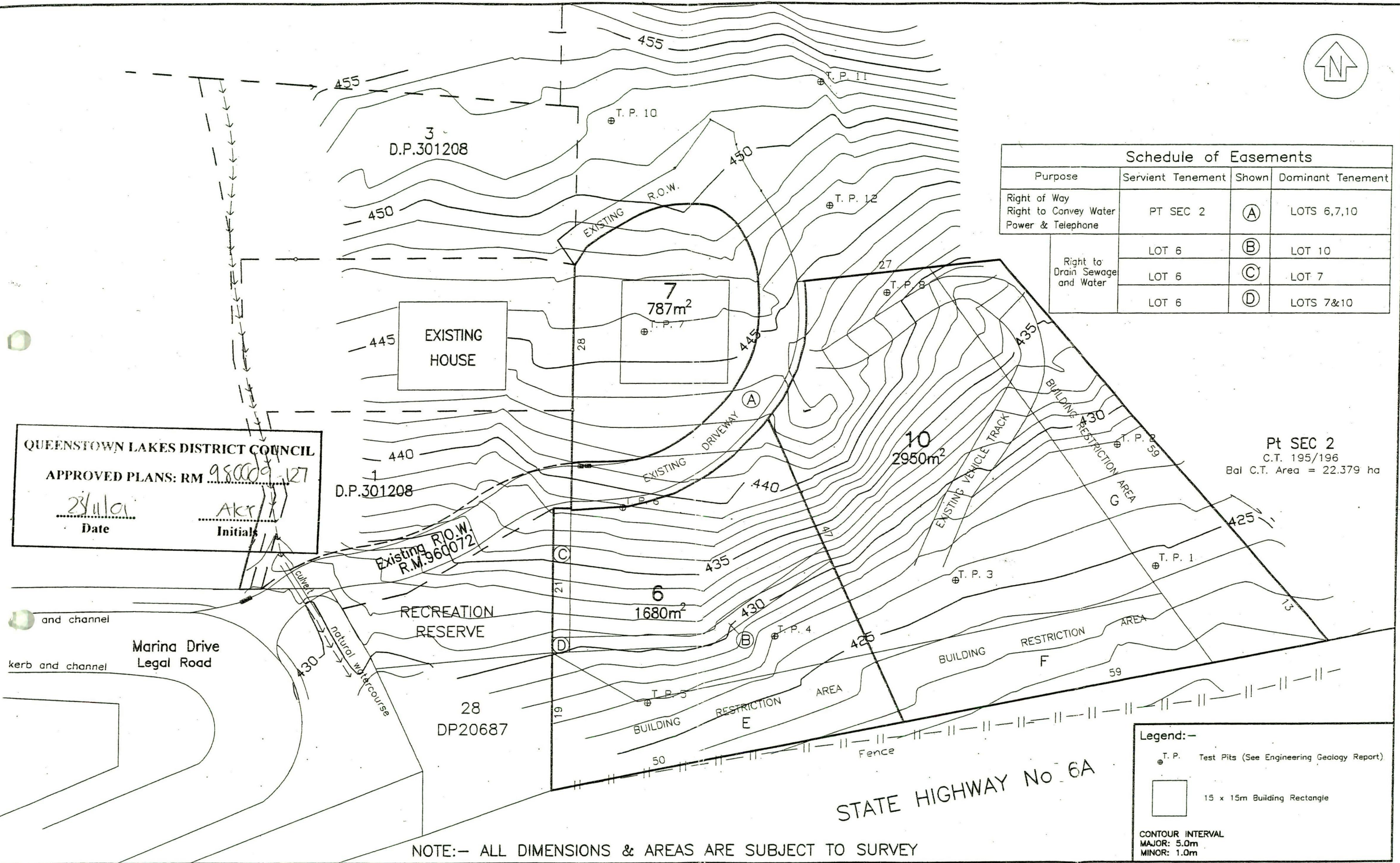
Jane Titchener
PRINCIPAL: RESOURCE MANAGEMENT



Schedule of Easements			
Purpose	Servient Tenement	Shown	Dominant Tenement
Right of Way Right to Convey Water Power & Telephone	PT SEC 2	(A)	LOTS 6,7,10
Right to Drain Sewage and Water	LOT 6	(B)	LOT 10
	LOT 6	(C)	LOT 7
	LOT 6	(D)	LOTS 7&10

QUEENSTOWN LAKES DISTRICT COUNCIL
 APPROVED PLANS: RM 980009 127
 28/11/01 Date AKR Initials

Pt SEC 2
 C.T. 195/196
 Bal C.T. Area = 22.379 ha



NOTE:- ALL DIMENSIONS & AREAS ARE SUBJECT TO SURVEY

Legend:-
 T.P. Test Pits (See Engineering Geology Report)
 15 x 15m Building Rectangle
 CONTOUR INTERVAL
 MAJOR: 5.0m
 MINOR: 1.0m

CLARK FORTUNE
McDONALD & ASSOCIATES
 REGISTERED LAND SURVEYORS LAND DEVELOPMENT & RESOURCE MANAGEMENT CONSULTANTS
 309 Lower Shotover Road, P.O.Box 353 Queenstown
 Tel. (03)442-0990, Fax (03)442-1060, Email g.t.surv@extra.co.nz

ISSUE	COMMENTS	BY	DATE
1	CMVC CORP	PD	19/06/2001
2	CMVC CORP	PD	14/11/2001

PROPOSED SUBDIVISION OF PT SEC 2
BLK XXI, SHOTOVER S.D.

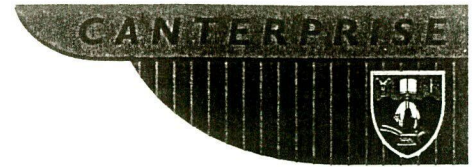
PROJECT:
 APPLICANT:
W.J. & M.M. GRANT

REVISION	COMMENTS	BY	DATE
1	BUILDING RECTANGLES LOTS 5&10 REMOVED	PD	14/11/01

APPROVED:	DESIGN:	SURVEY:	LEVEL:
CHECKED: PD	DRAWN: WJGS	FB	LB
SCALE: 1:500 @A3		DATUM: OTAGO	
JOB No. 6582		DRAWING 6582/4	

Attachment B

Canterprise review of consent variation application, 31 August 2001



COPY

CP/07/01/013

31 August 2001

Mr Peter De La Mere
Clark Fortune McDonald & Associates
Registered Surveyors & Planning Consultants
PO Box 553
QUEENSTOWN

CANTERPRISE LIMITED

University of Canterbury

Private Bag 4800

Christchurch New Zealand

Fax: (03) 442 1066

Dear Sir

re: **W GRANT SUBDIVISION – MARINA HEIGHTS – QUEENSTOWN**

With reference to your recent request I have reviewed the amended proposal for the Marina Heights Extension subdivision which you provided, and wish to advise as follows:

- I initially commented on this development by way of Canterprise Report CP2576 dated 19 August 1997, and five building lots (6-10 inclusive) were under consideration at that time. The new proposal involves only Lots 6, 7 and 10, with significant change to the Lot 6/10 boundary and the upper two lots (8 & 9) having been deleted.
- I have transferred the site engineering geology to the new plan provided by yourselves, which is appended as Figure 1, and the legend is as for Figure 1 in my original report. Cross sections A-A' and B-B' fortuitously pass through the three proposed dwelling sites on Lots 6, 7 and 10, and I have positioned those on my original Figure 2 which is also appended.
- The dwelling site for proposed Lot 6 is located on *in situ* schist bedrock which dips obliquely downslope at about 25°, and there is minimal soil or colluvial cover (Figure 1). Should the footprint be excavated as indicated on Figure 2 a cut face up to 6m in height would result, and extreme care is required (including specific foundation design and retention) to avoid planar or wedge failures in the dipping schist.
- The dwelling site for proposed Lot 7 is located entirely on beach gravels (Figure 1), and the excavation shown on Figure 2 would have a maximum height of 2.5m. Although retention may be required, battering back to the likely wave-cut schist profile is a preferred option and some engineering advice is indicated during construction.
- The dwelling site for proposed Lot 10 is located on the eastward sloping surface of an old track which exposes schist bedrock (Figure 1), and again a maximum excavated height of 2m is indicated on Figure 2 with battering at 1 on 1 (45°) in the glacial till. However, given the likely footprint

geometry in three dimensions specific foundation design and possible retention is advised for this building site.

- No rockfall protection is required for either of Lots 6 or 7 given the wide catch area and associated drainage measures above and to the east of proposed Lot 7. I recommend, however, that above the dwelling site shown for Lot 10 a minimum 15m long engineered protection fence be incorporated, preferably along the upper Lot 10 boundary (Figure 1), and it may be realistic to incorporate a landscaped bund as well.
- The building exclusion zone shown for Lot 10 is still appropriate, and is in fact not onerous in terms of the total lot area. I also recommend that drainage measures be included on or above the Lot 10 upper boundary, with engineered discharge of stormwater to the south-east of the footprint area shown in Figure 1.

In summary, the proposed three-lot development for Marina Heights Extension is entirely satisfactory geotechnically, but due note must be taken of the issues raised in this report and in earlier correspondence on this matter. In particular, this summary review should be read in conjunction with my original Canterprise Report CP2576 dated 19 August 1997, and the later comments regarding rockfall protection design and drainage in my letter of 24 December 1998. I reiterate that specific engineering design, supervision and certification of foundations and associated retention is required for Lots 6 and 10: for Lot 7 requirements are much less, with long-term drainage measures above and east of the site being the principal geotechnical issue identified.

I trust that this brief report is sufficient for your needs, but do not hesitate to contact me if any matter requires clarification or elaboration. A more detailed report dealing with long-term slope remediation above the Marina Heights Extension area is in preparation, and will be forwarded in the near future.

Yours sincerely



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