

**BEFORE THE INDEPENDENT HEARINGS COMMISSIONER APPOINTED BY NEW
PLYMOUTH DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application under section 88 of the Act
by Devon 5 Investments Limited for consent
to develop five comprehensive townhouses
and subdivide land at 1-5/196 Mangorei
Road, New Plymouth

**STATEMENT OF STORMWATER ENGINEERING EVIDENCE OF IAN DONALD STEELE
ON BEHALF OF DEVON 5 INVESTMENTS LIMITED**

5 September 2018

INTRODUCTION

Qualifications and Experience

1. My name is Ian Donald Steele. I hold the qualifications of BE (Hons)(Civil)(2002) and Grad Cert(Infrastructure Asset Management)(2011); and I am a Professional Member of IPENZ (MIPENZ) and registered as a Chartered Professional Engineer (CPEng)(#255539).
2. Over my 17 year career, I have worked as a design engineer (Apex Consultants), mostly working on infrastructure design projects such as stormwater, road renewals, upgrades and road safety projects within Taranaki. I was the Road Network maintenance contract team leader for South Taranaki District (Apex Consultants), responsible for the design and maintenance supervision of the South Taranaki Road network including the role of Traffic Management Co-ordinator (TMC).
3. I have received Road Safety Auditor training, and my role prior to joining BTW Company was as Team Leader (Queensland / NT) - Infrastructure Management with ARRB Group, where I completed numerous project evaluations, road safety audits pavement assessments, road asset management plans and the like.
4. I have been employed by BTW Company since October 2011, currently as the director of Engineering. My role for BTW Company, New Plymouth includes design, supervision and reporting and investigation of various civil projects including many related to road, transport/traffic and site development engineering, specifically including stormwater management.
5. I confirm that I have read, and agree to comply with, the Environment Court's Code of Conduct for Expert Witnesses (Environment Court of New Zealand Practice Note 2014). This evidence I am presenting is within my area of expertise, except where I state that I am relying on the evidence of another person. To the best of my knowledge I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.

ROLE

6. I was engaged by the applicant in approximately September 2016 to undertake an assessment of the suitability of the site for building platforms. Since that initial work I have

also overseen engineering design at the site including management of stormwater and vehicle manoeuvring/parking.

SCOPE OF EVIDENCE

7. In my evidence I will comment on:

- a) The proposal;
- b) Submitters issues with stormwater and expert view on those points.

PROPOSAL

8. The proposal is well covered in the application and also discussed in the officer's report. I have read the BTW Stormwater Report '*Proposed Development 196 Mangorei Rd, New Plymouth*' dated 4 April 2018 (and agree with the conclusions reached in that report) and am familiar with the proposed stormwater design, including the Section 92 Requests for Information and responses regarding stormwater issues. My comments below relate specifically to matters around stormwater management at the site, and submitter's concerns.
9. The site is an old gully that has been filled sometime between the 1960's and 1990's (likely earlier in that time range). Other adjacent sites/properties such as Stumble Inn have some fill extents within those properties also.
10. The fill material makes the site unsuitable for disposal of stormwater onsite via soakage to ground. This is not uncommon for infill developments in New Plymouth.
11. The stormwater design has been undertaken to satisfy the requirements of the New Zealand Building Code – Surface water (E1). This means that stormwater is detained up to storm events of 10% Annual Exceedance Probability (AEP) to ensure that most rain events do not create issues for the downstream stormwater network.
12. Stormwater at the proposed development will be detained via a proposed below ground retention tank which under most rain events will collect and slowly release the stormwater runoff to the outlet from the site.
13. The stormwater outlet from the site discharges to an existing New Plymouth District Council manhole to the north of the property.
14. Events greater than the 10% AEP event (i.e. bigger storms) will be conveyed by secondary overflow. The secondary overflow would be to the north. The proposed secondary overflow

path is an existing path, in that the existing catchment (both the site and adjacent uphill land) would have stormwater flows in a similar direction to that which is proposed by the development.

SUBMISSIONS AGAINST THE APPLICATION

15. I have reviewed the submission in opposition to the proposed development. Matters related to stormwater raised within that submission included:

- a) Considers that the subdivision is inappropriate and will result in adverse effects from the number and sizes of the allotments which will not enable use in compliance with the required standards for permitted activities and will adversely affect the character and amenity of the surrounding area, stormwater management and the safe and efficient operation of the road transportation network;
- b) Concerns about adverse stormwater effects and adverse effects on the Trust's properties in the event of high levels of rainfall.

16. Having reviewed the concerns, and the stormwater design my comments are as follows:

- a) The site generally meets the requirements of the New Zealand Building Code – specifically Surface Water (E1).
- b) The site stormwater discharge for events up to the 10% AEP event will be detained using an underground tank and discharged to the NPDC stormwater network.
- c) There is potential for storm events greater than 10% AEP to have overland stormwater flows to the north. These flows will be muted and unlikely on the basis that the Building Code requires a 10% AEP event to be detained for an hour, whereas the peak flow during a large storm (say 1% AEP) would be generated in a storm of 10 minutes duration. At this site this means that approximately 100% of the 1% AEP event will be captured in the detention tank and disposed to the reticulated stormwater system. This means that an overland flow of approximately 3 l/s would occur during a 1% AEP event (10 mins).
- d) Further to the above, the additional flow depth to the existing secondary flow path is considered minimal, if measurable – noting that the existing overland flowpath through the site (from upstream sites) remains.

17. As noted in in paragraph 6.1 of the Officers Report, the only item for review by the applicant from the pre-hearing meeting was regarding a potential additional stormwater sump that would collect rain from the northern facade of the proposed townhouses. From my review of the final

design (post request for information), the stormwater design meets the requirements of the New Zealand Building Code, and I can see no need for an additional sump.

CONCLUSION

18. On the basis that the relevant proposed consent conditions as shown in the Officer's report will be imposed if consent is granted, the proposed development is able to appropriately manage stormwater disposal in a way that would not generate any significant adverse effects on the adjoining property at 192a Mangorei Road (or on the environment generally).

Ian Donald Steele
5 September 2018