

BEFORE THE SELWYN DISTRICT COUNCIL

UNDER the Resource Management Act 1991

AND

IN THE MATTER of Private Plan Change 71: Four Stars Development Limited
and Gould Developments Limited

**STATEMENT OF EVIDENCE OF WILLIAM JOHN GRANT SALMOND ON
BEHALF OF FOUR STARS DEVELOPMENT LIMITED AND GOULD
DEVELOPMENTS LIMITED**

SERVICING

Dated: 18 January 2022

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INTRODUCTION

- 1 My name is William John Grant Salmond. I have a Bachelor of Surveying and am a Licensed Cadastral Surveyor and am a full member of Survey and Spatial New Zealand. I have been in the survey industry for 20 years since completing my degree.
- 2 I am employed by Paterson Pitts Group as a Principal of the Christchurch Branch and am a Licensed Cadastral Surveyor. I have been exposed to a number of roles including being a consultant surveyor, a contractor's surveyor and hydro-graphic surveyor.
- 3 Since joining Paterson Pitts Group in October 2014, I have worked on many subdivisions in Christchurch, Selwyn and the rest of Canterbury. My input on these subdivisions has covered a wide range of roles from topographical surveys, to liaising with Councils on servicing requirements, preparing subdivision resource consents with detailed scheme plans, engineering monitoring and overseeing plus undertaking cadastral surveys for subdivisions.

CODE OF CONDUCT

- 4 I confirm that I have prepared this evidence in accordance with the Code of Conduct for Expert Witnesses. Code of Conduct for Expert Witnesses contained in Part 7 of the Environment Court Practice Note 2014. The issues addressed in this statement of evidence are within my area of expertise except where I state that I am relying on the evidence or advice of another person. The data, information, facts and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

SCOPE OF MY EVIDENCE

- 5 I prepared the Preliminary Servicing Assessment for the Four Stars and Gould Developments Operative District Plan Private Plan Change 71 (lodged 10/1/2021) and re-zone submissions 344 and 456 seeking the same rezoning, which can be found on Council's website.
- 6 My involvement began in 2020 when Paterson Pitts Group was engaged by Gould Developments Limited and Four Stars Development Limited to assist with the preparation of the application. That work involved preparing the Outline Development Plan (ODP) with direction from Ms Lauenstein and Ms Aston to ensure alignment with the Urban Design Assessment and the proposal. In addition the work included a servicing assessment, yield assessment, survey work and providing general project advice. In my role as a principal of Paterson Pitts Group and project manager I have been liaising with Selwyn District Council regarding the servicing requirements.

- 7 Following on from investigations of the servicing requirements for the proposal I prepared the servicing report included with the plan change request, as lodged with the Council.
- 8 The servicing report covers my preliminary assessment of water supply, stormwater, wastewater, roading and utilities. My evidence discusses the preliminary servicing investigations that I carried out and my findings. However, Mr Victor Mthamo discusses the issue of water supply in his evidence. In preparing my evidence, I have worked closely with Mr Mthamo, whose input has included:
- a) Peer reviewing my servicing report; and
 - b) Liaising with Selwyn District Council on the wastewater servicing options.

SUMMARY OF MY EVIDENCE

- 9 Stormwater will be collected from roofs and discharged to ground. Stormwater from hardstands and roading will be collected and discharged to ground. Resource consents for the collection, conveyance and discharge of stormwater will be sought from Environment Canterbury. I am not aware of any potential issues that would cause the Regional Council not to issue a stormwater discharge consent.
- 10 Selwyn District Council has confirmed that there is capacity in the local sewer reticulation to convey flows from the Site. There is also capacity at the Pines Wastewater Treatment Plant to treat and discharge wastewater to land. Mr Murray England (Asset Planning Manager) at Selwyn District Council was able confirm that details of the connection to the existing network can be dealt with at the detailed design stage when engineering plans are submitted as part of the subdivision consent.
- 11 I liaised with electricity and telecommunication utility companies. Providers were able to confirm that electricity and telecommunications could be provided by extending capacity from the existing networks.
- 12 In summary, there are no issues with providing services to the Site.

DESCRIPTION OF THE CATCHMENT OF THE PROPOSAL

- 13 The Plan Change seeks to amend the Operative Selwyn District Plan (OSDP) to enable development of the 53.89 ha site ('the Site') for residential purposes, including some medium density lots. The rezoning will accommodate a further 660 dwellings.
- 14 Part of the Site is within the Christchurch Airport 50 dBA Ldn noise contour. I understand that the contour is currently under review and that a number of technical documents prepared on behalf of Christchurch Airport show the removal of the contour from the affected part, in which case the whole Site may be developed. In my assessment of the servicing requirements, I have taken a conservative approach and assumed that the whole area is developed.

STORMWATER SERVICING

General

- 15 I am aware that there is no existing reticulated stormwater network servicing the site.
- 16 Having been involved with a number of subdivisions within Rolleston, and based on my experience in working on subdivisions elsewhere in Selwyn District, I am aware that stormwater will need to be managed within the plan change area. This will involve collection, conveyance and discharge to ground. This will require consent from Canterbury Regional Council.
- 17 In the following paragraphs I describe the stormwater proposal in more detail.

Stormwater Collection, Conveyance and Discharge

- 18 The primary and the secondary stormwater systems will be designed and constructed to handle at least the 20% and 2% AEP (Annual Exceedance Probability) or 5 year and 50 year flows respectively.
- 19 Roof stormwater is considered to be 'clean' requiring no treatment and can therefore be discharged directly to ground via standard soak-pits within the individual lots when developed.
- 20 Driveway runoff will either be intercepted at the end of the driveways and discharged to ground via soak-pits or may flow onto the street and conveyed to the collection and discharge systems serving the roads as I describe in more detail below.
- 21 Road runoff will be discharged to ground via roadside soak-pits without the need for treatment.

- 22 Secondary flows from the individual lots and the roads will flow towards the main roads away from the building platforms to prevent flooding. The building platforms will be set at least 300 mm above the 200-year flood levels as discussed in the evidence of Mr Victor Mthamo.
- 23 The applicant engaged LandTech Consulting to undertake soakage tests at various locations within the plan change area. The soakage tests show that infiltration rates range from 360 mm/hr (northern portion) to 2,000 mm/hr (mid and southern portions of the site).
- 24 I also checked Canterbury Maps for the groundwater levels under the site. The average ground water depth is 13.0 m below existing ground.
- 25 I discussed the implications of the infiltration tests and the groundwater levels with Mr Victor Mthamo who my company regularly engages to prepare stormwater applications for the subdivision work that we do in Selwyn. Mr Mthamo advised that:
- a) The 13.0 m depth to groundwater is advantageous as this means that there is sufficient soil matrix within this depth to mitigate the effects of any contaminants on the receiving groundwater environment. A detailed assessment of effects carried out as part of the discharge consent application to Canterbury Regional Council will confirm this assessment. It is Mr Mthamo's expectations that the effects to groundwater will be less than minor and stormwater can be discharged to ground without treatment.
 - b) The soil infiltration results are high enough to enable stormwater discharge to ground from events of up to 2% AEP without the need for attenuation. Efforts will be made when and where appropriate, to convey the discharges to the areas where the infiltration is highest (up to 2,000 mm/hr) as the soakage systems will be smaller in volume in these areas than in areas where the soakage system is lower (down to 360 mm/hr).
 - c) Discharge to ground within the Site will be a discretionary activity under the Canterbury Land and Water Regional Plan (CLWRP) and consent should be able to be granted with conditions that the applicant is able to comply with. Mr Mthamo is able to confirm this as he has worked on similar subdivisions by Gould Developments Limited in Rolleston.

Construction Phase Stormwater

- 26 Earthworks will involve the general clearance of vegetation and topsoil stripping, followed by general re-contouring to provide the basis for the layout of the lots and infrastructure. This will be confirmed when the subdivision layouts have been defined.
- 27 Stormwater during the construction phase will be to ground. A resource consent for the construction phase will be sought from Canterbury Regional Council.

Summary of the Stormwater Servicing

28 In my opinion, there are no issues with managing stormwater from the Site.

WASTEWATER SERVICING

Introduction

29 I carried out an assessment of the wastewater servicing with the assistance of Mr Mthamo.

Wastewater Generation and Flows from the PC71 Area

30 The wastewater flows will be calculated using the methodology in Part 6 of the Council's Code of Engineering Practice.

31 To get an understanding of the flows involved I have estimated the Average Flows and Maximum flows from the Site using Equations 1 and 3 in the Code as follows:

- a) Number of Lots = 660.
- b) Wastewater generation = 220 L/person/day.
- c) Number of people per lot = 2.7.
- d) Peak Average ratio = 2.5
- e) Storm Peak Factor.
- f) *Average Flow = $660 \times 220 \times 2.7 = 392,040 \text{ L/day} = 4.54 \text{ L/s}$.*
- g) *Maximum Flow = $4.54 \text{ L/s} \times 2 \times 2.5 = 22.7 \text{ L/s}$.*

32 The network capacity available needs to be able to accommodate an Average Flow of 4.54 L/s/ and a Maximum Flow of 22.7 L/s.

33 These flows have been calculated on the basis of the full 53 ha site being developed.

Wastewater Discharge Options

34 I carried out an initial assessment of wastewater servicing for the Site.

35 There are a number of options that are available for reticulating the wastewater from the PC71 site. I consider that there are five possible options for conveyance of wastewater from the Site

36 **Attachment 1** of my evidence presents these five options. In summary, they are:

- a) **Option 1** – Conveyance of some of the flow into the DN225 gravity sewer network in Levi Road gravity sewer or directly to the pump station in Goldrush Lane.
- b) **Option 2** – Conveyance of all or some of the flows by gravity to the Helpet Pump Station via the future Broadland Drive Road.

- c) **Option 3** - Conveyance of some of the flows into the DN150 uPVC gravity network in Reuben Avenue from Lincoln Rolleston Road.
 - d) **Option 4** – Conveyance of some of the flows into the DN150 gravity network in Falcons Landing subdivision. The flows would be discharge into the Lincoln Rolleston Road sewer pipes before they go into Branthwaite Drive or Saker Place.
 - e) **Option 5** –involves a new and separate sewer main down Lincoln Rolleston Road to Flight Close. While the primary objective will be to convey the flows by gravity it is also possible that the option may involve a sewer pump within the PC71 site in order to get the flows to the existing Flight Close sewer pump station.
- 37 I should point out that the options are not mutually exclusive. A combination of the options are likely to be used to service the Site depending on the available capacity in each pipe as I discuss below:
- a) The conveyance to the Helpet Pump Station would involve a new gravity sewer from the Site. This could be sized to convey most if not all of the flows.
 - b) If a staged development is to be carried out, wastewater flows from the northern catchments i.e. the areas adjacent to Levi Road can be conveyed to the Levi Road gravity network or to the pump station at Goldrush Lane.
 - c) If the subdivision development starts from the land adjacent to Lincoln Rolleston Road and Nobeline Drive then the Options 3 - 5 could provide capacity for the initial lots.
- 38 While every effort will be made to convey wastewater flows by gravity it is possible that some parts of the catchment may need to be pumped using a lift pump or standard sewer pressure pumps because of the topographical constraints.
- 39 As part of the assessment Mr England confirmed verbally that there was sufficient capacity in the surrounding network to support the development.
- 40 Subsequent to my discussion with Mr England, Mr Mthamo provided a peer review of the options and then contacted Mr England to re-confirm the capacity and acceptability of the four options. I have provided **Attachment 2** which is the written confirmation from Mr England that there is indeed capacity within the local sewer network to service the area. Mr England also so confirmed that details of the various options can be considered in more detail at the subdivision stage.

Summary of the Wastewater Servicing

- 41 I conclude that there are engineering options to resolve any issues with wastewater servicing.
- 42 Detailed assessment of the five options and the engineering design will be carried out at the subdivision stage. This approach is acceptable to SDC as confirmed in **Attachment 1**, and in Mr. England's evidence.
- 43 The design and construction of the new wastewater reticulation will be in accordance with Selwyn District Councils Code of Practice and developed in accordance with any resource consent conditions prior to submission to Council for approval.

UTILITIES – POWER SUPPLY & TELECOMMUNICATIONS

Power Supply

- 44 I sent a written request to Orion New Zealand Limited seeking confirmation of the feasibility of providing power to the Site. Orion was able to confirm that it can service the Site.
- 45 **Attachment 2** includes a letter from Orion confirming this capacity.

Telecommunications

- 46 I also asked for confirmation from Enable as to whether the Site could be serviced. Enable confirmed that it was able to provide services to the Site.
- 47 **Attachment 3** includes written communication from Enable confirming this capacity.

Summary of the Utilities Servicing

- 48 All lots will be provided with the ability to connect to a telecommunications and electrical supply network.
- 49 In my opinion, there are no issues with provision of infrastructure for utilities to the sites.

William Salmond

18 January 2022

**ATTACHMENT 1 – WASTEWATER OPTIONS AND CORRESPONDENCE FROM SELWYN
DISTRICT COUNCIL CONFIRMING WASTEWATER CAPACITY**



Will Salmond

From: Victor Mthamo <reeftide@gmail.com>
Sent: Thursday, 19 August 2021 4:32 pm
To: Will Salmond
Subject: FW: Plan Change 71 - Sewer Servicing

Hi Will,

Good news from Murray below.

Will call you tomorrow to discuss evidences.

Kind Regards,
Victor

From: Murray England <Murray.England@selwyn.govt.nz>
Sent: Thursday, 19 August 2021 4:13 pm
To: Victor Mthamo <reeftide@gmail.com>
Subject: Plan Change 71 - Sewer Servicing

Hi Victor,

Thank you for your earlier emails and phone conversation just now.

I am satisfied that this plan change area can be serviced with wastewater.

There are a number of connection points available into our network.

The exact connection point and type of internal reticulation e.g. gravity or via pump station can be determined at a later stage in the consenting process.

Kind regards

Murray England
Asset Manager – Water Services



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www.selwyn.getsready.net

ATTACHMENT 2 – CORRESPONDENCE FROM ORION

11 September 2020

Paterson Pitts Group
PO Box 160094
Hornby
CHRISTCHURCH 8441

Attention: Will Salmond

Dear Will,

Proposed Sub-Division connection to the Orion network – R/No 510232 Lincoln Rolleston Road, Rolleston

The letter is not suitable for Section 224 Title Clearance.

I refer to your letter and the above-named property. I have investigated your request and comment as follows;

1. Orion has the capacity on the upper network to supply the proposed subdivision of the above lot(s).
2. To comply with Orion's network security conditions, an alternative feed from adjoining developments may also be required.
3. There are presently no specific connections available for this Sub-Division; however,
4. Connection(s) could be made available with alteration / addition to the Orion network.
5. There will be costs associated with providing the connection(s). These will be in line with our 'Extensions and Connections Policy'.
6. This type of work would be a typical design build project. If you proceed; please have your designer forward their proposal to Orion for approval.

The terms and conditions presented will encompass Orion's policies and practices current at the time.

Please don't hesitate to contact me on (03) 363 9534, or email me at: Steve.Hancock@oriongroup.co.nz

Yours faithfully



Steve Hancock
Contract Manager Sub-Divisions

ATTACHMENT 3 – CORRESPONDENCE FROM ENABLE

13th October 2020

Will Salmond

Paterson Pitts Group

Christchurch

Dear Will

UFB Fibre delivery to the Levi Lincoln Sites

- In response to your query on the 3rd September, requesting confirmation from Enable of fibre delivery into the subdivisions at

139 Levi Road

232 Lincoln Rolleston Road

274 Lincoln Rolleston Road

294 Lincoln Rolleston Road

5 Nobeline Drive

15 Nobeline Drive

25 Nobeline Drive

In the areas shown in red, yellow blue



, I am pleased to be able to confirm the following;

Enable has the service capacity/ capability to fee this parcel of land. Feed can be provided, at standard network extension fees and Greenfield Development fees, from the existing Enable chamber 2320

I trust that the above confirmation allows you to fulfill council requirements



Yours sincerely



Rob Armstrong

Business Development Manager

Enable Networks Ltd