Hutt City Council
30 Laings Road
Private Bag 31912
Lower Hutt 5040
New Zealand
www.huttcity.govt.nz
T 04 570 6666
F 04 569 4290

24 February 2022

Louana Fruean
[redacted]

Tēnā koe Louana

Request for Information – Local Government Official Information and Meetings Act (LGOIMA) 1987

We refer to your official information request dated 31 August 2021 for information about the Papakainga in Wainuiomata.

The first tranche of information we hold relating to the Papakainga is accompanying this letter. The second (and final) tranche is expected to be sent to you by the end of next week.

Information will be withheld from some documents under the following grounds of section 7(2) of the LGOIMA:

(a) To protect the privacy of natural persons, including that of deceased natural persons;
(g) To maintain legal professional privilege;

You have the right to seek an investigation and review by the Ombudsman of this response. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Please note that this letter may be published on the Council's website.

Again, I apologise for the time taken to respond to your request.

Nāku noa, nā

Susan Sales
Senior Advisor, Official Information and Privacy

From: Bruce Hodgins <bruce.hodgins@huttcity.govt.nz>
Sent: Tuesday, 2 October 2018 2:44 pm
To: Section 7(2)(a)
Subject: Papakainga Housing

Kia ora Section 7(2)(a)

Following the Policy meeting the other evening we were asked to look at issues around Council's ability to apply rates to the proposed housing development.

The answer we have received is that because the Maori Land Court established the Maori Reservation under both sections 338 and 340 of TTWMA as a reserve for the use and benefit of the people of NZ, the land becomes non-rateable.

In questioning the solicitor around this she advised that she did not think the use of the reserve for housing was permissible. Let's meet on Thursday afternoon at 1.00pm to discuss this issue. I will see what further information I can dig up.

Attached is the initial response from Buddle Findlay which includes limitations on leasing that exist under the Act.

Bruce

INITIAL LEGAL ADVICE from Buddle Findlay

1st email
Under schedule 1 of the Local Government (Rating) Act 2002, Māori Reservations are only classified as fully non-rateable land where either:

- it is used for the purposes of a marae or meeting place and it does not exceed 2 hectares; or
- it is a Māori reservation under section 340 of TTWMA (which is a Māori reservation that is not a wahi tapu that has been specified to be held for the common use and benefit of the people of New Zealand).

It will be important, therefore, to confirm the purpose of the reservation, but if it does not fit within either of those categories it may be possible for that land to be rateable. For example, it appears that if the reservation is for the purposes of a marae, but is larger than 2 hectares, it may not be exempt from ordinary rating requirements.

Sorry we can't provide a definite answer on this right now, however if you are able to find out some more information about the reservation in question, we would be happy to look into this further to determine whether the exemptions apply in the specific circumstances.

As an additional point, I note that another potential issue is whether Māori reservation land is able to be leased for a period of more than 14 years. Note that section 338(12) of TTWMA says:

- The trustees in whom any Maori reservation is vested may, with the consent of the court, grant a lease or occupation licence of the reservation or of any part of it for any term not exceeding 14 years

(including any term or terms of renewal), upon and subject to such terms and conditions as the court thinks fit.

This may be an issue that has already been separately considered and dealt with by Housing New Zealand, however we wanted to flag it for you now just in case it has not yet been worked through. We would be happy to look into and advise further on Māori Land Court issues if that would be helpful.

2nd email

Thanks very for sending those through, that does help to clarify things somewhat, however unfortunately in order to be able to give a definitive answer on the rateability of the land we will need a few more details, in particular:

- the stated purpose for which the Māori reservation has been set aside (as notified in the Gazette);
- the intended stated purpose for which the Council reserve will be set aside as a Māori reservation (i.e. for the common use and benefit of the people of New Zealand, or some other purpose such as a village site); and
- the land area of both the Māori reservation land, and the Council reserve land.

At the risk of complicating things further, it is also worth just noting that on a quick look at section 338 of TTWMA, it appears that the Act provides for Māori reservation status to be placed over land that is already the subject of a lease or licence (and the status does not affect those rights). However, as I noted below, it may be more difficult to obtain a lease over a Māori reservation once it has been confirmed.

Therefore, it may be worth considering the order in which the necessary steps are carried out, to ensure the intended end result can be achieved as simply as possible. This is just a preliminary thought based on my review of the provisions today, but we can certainly look into this further if that would be helpful.

Bruce Hodgins
Divisional Manager Parks & Gardens

Hutt City Council, 30 Laings Road, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 570 6839, **M** 027 4820 461, **W** www.huttcity.govt.nz

From: Parvati Rotherham <Parvati.Rotherham@huttcity.govt.nz>
Sent: Friday, 26 February 2016 10:52 am
To: S7(2)(a) portnicholson.org.nz
Cc: Kim Kelly <Kim.Kelly@huttcity.govt.nz>; Alma Andrews <alma.andrews@huttcity.govt.nz>
Subject: Wanui Papakainga

Kia ora Section 7(2)(a)

It was great to meet you last week to hear your vision for the papakainga proposed at the former Wainuiomata Intermediate/High School site. I thought I'd send you an email to reiterate that I can be your first point of contact for helping make this development a success.

I can offer assistance in terms of having meetings with the right experts within our organisation to ensure that any consenting process is quick, easy and affordable for you.

We could also offer you financial incentives under the Hutt City Development Charges Remissions Policy. In order to comply you need to construct 3 or more adjoined dwellings or 3 or more dwellings within a development with a combined land area of no more than 400m2 per dwelling on average. Building and resource consents need to be approved before 30 June 2017 and construction must commence within 2 years of the building consent being issued in order to be eligible. A copy of the policy can be found here.

I understand initial concepts have been discussed with Boffa Miskell, you may also want to consider local consultants to aid your design and applications as they could be more affordable and have a better understanding of local conditions. We may be able to offer a list of these people if you are interested.

As discussed, there are a few options available to you: Plan Change or Resource Consent. Resource consent could be quicker and easier than a plan change.

Let's meet up in a couple of weeks once you have a clearer picture of what you want to do on site.

He i kona mai

Parvati Rotherham
Development Liaison Manager

Hutt City Council, 531 High Street, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 570 7426 **T** 0274 062 561 **W** www.huttcity.govt.nz **F** huttcitycouncil

Meeting with Kara Dentice (PNBST trustee) 24.07.18

Housing development in Wainuiomata using a Papakāinga approach – they are building 'affordable housing' but most of it is in the $450000 price bracket –they need to ensure the provision of Kaumatua housing and selling it to a combination of HNZ as social housing, at the market rate and at a subsidised rate – they are in the process of working out these ratios

They are using a shared equity model which they are discussing with government it's an approx. an $80m job –they have developers involved to do this

Council has been really good with the consenting process and the Mayor has really championed this work. They are using a model that promotes equitable housing – need to work out how to get developers on board. Want to use a cost plus 10% model.

There is a lot of work that neds to be done to get families mortgage ready and ready to be home owners – they want to get people on to a homeownership pathway (element of social engineering to all of this)

What options are there to build on Council land e.g. using 99 year leases-shared equity model

If Council is keen to take the lead/ work with led social housing providers they need to take a collective approach with iwi.

Make sure we don't build slums…and don't build dependency – intent of these programmes needs to be that within x amount of time you will transition into full home ownership.

We don't want these new houses to perpetuate the issues that have already been created – they need to be designed deliberately and intentionally – and not just be reactionary.

Can we bring developers into the strategy? Craig Walton –UPL developer- could be a good person to involve – need to have input from this group/ industry.

We need to build intergenerational wealth and the aspirations of people are really important.

It's about giving people the option to choose.

There are 3 strands: immediate need, education and availability.

Education e.g. what are places like weltech doing to teach people about budgeting etc. how do we address all three strands? How do we support this?

There is a reasonable level of support at Council.

It might be good to have a small partnership with Port Nicholson. Kara will have a talk with the board about we can be involved in this together and how they want to work with us etc.

Let's join the dots with Matt Reid to create community partnerships to show success and get further support and funding from government.

The facilitator for the big workshop should come up with a one page summary of how the workshop will go –maybe give them some draft principles, sets of rule/ expectations etc.

Kara will see if there is someone else who can come to the workshop (now that date has been changed he may be able to attend)

Need to outline Councils intentions for developers?

From: Parvati Rotherham
Sent: Wednesday, 15 March 2017 4:01 pm
To: 'Section 7(2)(a) portnicholson.org.nz>
Subject: RE: Plant support for Taranaki Whānui Papakāinga

Kia ora S7(2)(a)

I've had chat to Bruce Hodgins, Parks Manager, the costs of this amount of plants would be around $60,000 unfortunately we can't fund this or assist with the provision of plants. The wholesale price we get is the same as you could get from various nurseries. Have you considered propagating your own "eco-sourced" plants now so they will be ready when the time comes for planting?

We may be able to assist with any berm planting along the front of the site.

Kind Regards,

Parvati

From: Section 7(2)(a) portnicholson.org.nz]
Sent: Wednesday, 15 March 2017 11:13 AM
To: Parvati Rotherham
Subject: RE: Plant support for Taranaki Whānui Papakāinga

Of course, please find the plant list attached ☺

Ngā mihi

Section 7(2)(a)

Taranaki Whānui

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

Tramways Building
1-3 Thorndon Quay
Wellington 6011
PO Box 12164
Wellington 6144

Phone: (04) 472 3872
Fax: (04) 472 3874

From: Parvati Rotherham [mailto:Parvati.Rotherham@huttcity.govt.nz]
Sent: Wednesday, March 15, 2017 11:13 AM

To: [redacted]portnicholson.org.nz>
Subject: RE: Plant support for Taranaki Whānui Papakāinga

Hi [redacted] Are you able to send me the plants list you sent Kim and Alma, they did not forward that to me and are not available at the moment.

Thanks,

Parvati

From: [redacted]portnicholson.org.nz]
Sent: Wednesday, 15 March 2017 10:36 AM
To: Parvati Rotherham
Cc: Kim Kelly; Alma Andrews; Bruce Hodgins
Subject: RE: Plant support for Taranaki Whānui Papakāinga

Kia ora Parvati,

Thank you very much for your response.
That's fantastic, please keep me updated on the outcome of your discussion with the Parks team.

Ngā mihi

[redacted]

Taranaki Whānui

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

Tramways Building
1-3 Thorndon Quay
Wellington 6011
PO Box 12164
Wellington 6144

Phone: (04) 472 3872
Fax: (04) 472 3874

From: Parvati Rotherham [mailto:Parvati.Rotherham@huttcity.govt.nz]
Sent: Wednesday, March 15, 2017 10:19 AM
To: [redacted]portnicholson.org.nz>
Cc: Kim Kelly <Kim.Kelly@huttcity.govt.nz>; Alma Andrews <alma.andrews@huttcity.govt.nz>; Bruce Hodgins <Bruce.Hodgins@huttcity.govt.nz>
Subject: RE: Plant support for Taranaki Whānui Papakāinga

Kia ora [redacted]

Kim has forwarded me your email. My role at Council is to be the first point of contact for developers.

James Beban has been in touch about your papakainga development in Wainuiomata, so I have an idea of what you are trying to achieve and happy to assist.

We are looking at offering development remissions for this project, this means we can cover your resource consent, building consent (less BRANZ and MBIE levies), development and reserve contributions.

I will liaise with our Parks team to see what we can do about the plants.

If you need anything further please do get in touch.

Kind Regards,

Parvati Rotherham
Development Liaison Manager

Hutt City Council, 30 Laings Road, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 570 7426 **T** 0274 062 561 **W** www.huttcity.govt.nz **F** huttcitycouncil

From: [redacted]portnicholson.org.nz]
Sent: Friday, 10 March 2017 4:21 p.m.
To: Shane Parata; Alma Andrews
Cc: Nick Robinson; Kim Kelly
Subject: Plant support for Taranaki Whānui Papakāinga

Tēnā kōrua, ko Shane rāua ko Alma

As you are aware, Taranaki Whānui are in the process of developing our papakāinga in Wainuiomata. We are currently in Phase 1 of the project which involves building 8 Kaumātua houses and 15 whānau houses, with landscape design being a key part of this.

I have been heavily involved with developing our landscape plan. Please find attached a breakdown of the agreed list of plants that we have included in our resource consent.

We are looking for some support from our council partners to see if there is an opportunity to provide us with some of the plants we are seeking. Can you please indicate whether this is an avenue that I can pursue.

Ngā mihi

Section 7(2)(a)

[redacted]

Taranaki Whānui

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

Tramways Building
1-3 Thorndon Quay
Wellington 6011
PO Box 12164
Wellington 6144

Out of Scope

[redacted]

From: Section 7(2)(a) [redacted]
Date: 15 August 2019 at 3:56:12 PM NZST
To: <jo.miller@huttcity.govt.nz>
Cc: 'Section 7(2)(a) [redacted] portnicholson.org.nz>, Section 7(2)(a) [redacted]
Section 7(2)(a) [redacted] @egmontdixon.com>
Subject: FW: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Hi Jo,

Further to our conversation yesterday, this is the remission issue, which I raised with you.

Please excuse the fact that I have copied in [redacted] but he along with the Wellington Company are our partners in the development of the houses at Wainuiomata, so he will have a better understanding of the timing around the completion of stage 1 and he will also have a better understanding of the time lines for stages 2 and 3, which have the same potential as stage 1 but are subject to further consultation with members.

I can confirm, as you accurately surmised, the development at Wainuiomata is not an out and out development for profit model, as we, the Port Nicholson Block Settlement Trust, are providing the land and the Wellington Company is providing the development expertise and the funding, to enable the delivery of the housing proposed for the benefit of the members.

[redacted] and I would be more than happy to come out next week if you had some time and provide a further overview of what is being delivered at Wainuiomata. We could also bring some collateral relating to other initiatives which we the Trust and the Wellington Company have brought to market with an affordable aspect. These other developments relate to land made available to the Trust as part of its RFR portfolio.

It occurs to me I should separately in another email also explain how our RFR rights work, as that will also be of use.

Look forward to hearing from you and in terms of my availability I am in Wellington on Tuesday and Wednesday next week if you had some time to see [redacted] and myself.

[redacted]

From: [redacted] egmontdixon.com>
Sent: Thursday, 18 July 2019 11:22 AM
To: Matt Reid <Matt.Reid@huttcity.govt.nz>; [redacted]
Subject: RE: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Kia ora Matt

I referred this back to Taranaki Whanui whom we (TWC) are acting as the development agent for this papakainga.

They will revert accordingly.

Nga mihi

[redacted]

From: Matt Reid <Matt.Reid@huttcity.govt.nz>
Sent: Thursday, 11 July 2019 11:17 AM

To: Section 7(2)(a) egmontdixon.com>; Section 7(2)(a)
Section 7(2)(a)
Subject: RE: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Kia ora Section 7(2)(a)

Thanks for your email. I have looked into this matter following S7(2)(a) earlier questions of me.

Unfortunately we are not in a position to be able to offer an extension. Council's remissions policy resulted in unprecedented numbers of development proposals. We need to be transparent and totally consistent with how we apply the policy – including with regards to the 2 year timeframe.

My understanding is Council agreed to the previous remission in 2017 - expired in April 2019. The Wellington Company lodged at the end of 2018 a new application for a remission for the same site which we are waiting for signing which extends the timeframe for another 2 years. You requested 5 years which our previous CEO declined.

I'm sorry we are unable to accommodate your request.

Thanks

Matt

Matt Reid
General Manager, City and Community Services

Hutt City Council, 30 Laings Road, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 570 6878, **M** 027 280 7468, **W** www.huttcity.govt.nz

From: Section 7(2)(a) egmontdixon.com]
Sent: Wednesday, 10 July 2019 11:02 AM
To: Section 7(2)(a) Matt Reid
Subject: RE: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Kia ora Matt

Section 7(2)(a) Port Nicholson Block Trust (The Trust) – Manager has requested I email you regarding the email below.

I have recently received an email from Christine Chong regarding the development contributions remission agreement and a request to have this signed or be invoiced (As attached).

As per the emails below, the Trust are seeking an extension to the two year window that has been tabled in the agreement to one reflect the scale of the development and two the proposed development form and social outcomes.

Can you please confirm Council's position on this matter.

Nga mihi

Section 7(2)(a)

From: Section 7(2)(a)
Sent: Friday, 5 July 2019 8:36 AM
To: matt.reid@huttcity.govt.nz
Cc: Section 7(2)(a) egmontdixon.com>
Subject: FW: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Hi Matt,

Good to meet you yesterday at the NZTA lead meeting concerning the Cycleway project.

The matter I spoke to you about is outlined b S7(2)(a) elow as I caught up with him subsequent to our meeting.

Would be great if we could have the extensions and timeframes sought b S7(2)(a) below as we think this project is of value to the entire community.

Look forward to hearing from you.

Section 7(2)(a)

From: Section 7(2)(a) egmontdixon.com>
Sent: Thursday, 4 July 2019 5:40 PM
To: Section 7(2)(a) twc.co.nz
Subject: Fwd: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Section 7(2)(a)

Please refer to the attached development contributions remissions agreement with HCC for Te Puna Wai - Wainuiomata.

The current agreement proposed is for two years.

We will require the following:

Stage 1 - three years
Stage 2/3 - five years from the completion of Stage 1.

This will reflect the timeframes required to deliver this development and the rate of uptake of housing by the members and others of the Trust.

Nga mihi

Section 7(2)(a)

From: Christine Chong <Christine.Chong@huttcity.govt.nz>
Sent: Wednesday, June 19, 2019 12:17:02 PM
To: Section 7(2)(a)
Subject: Draft Remission Agreement for 82 - 106 Moohan Street, Wainuiomata

Hi Section 7(2)(a)

Attached is the remission agreement of 82-106 Moohan St, Wainuiomata. Can this be signed and returned to me please. As I mentioned the time frame of 2 years was set by the Senior Leadership Team. It is the timeframe that everyone else got.

Kind Regards
Christine

Christine Chong

Development Liaison Manager

Hutt City Council, 30 Laings Road, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 570 7426 **T** 0274 062 561 **W** www.huttcity.govt.nz **F** huttcitycouncil

Christine Chong
Development Planning Liaison Manager

Hutt City Council, 30 Laings Road, Private Bag 31912, Lower Hutt 5040, New Zealand
T 04 5707426, **M** 0274062561, **W** www.huttcity.govt.nz

Concept Plan A (ii)

Legend

- Key Cultural Building
- Retained Buildings
- Medium Density **x 60** (3 storey) or **40** (2 storey)
- Kaumatua Whare (Elders) **x 9 (18)**
- Whanau Whare 1 (Extended Family)
- Whanau Whare 2 (Duplex) **x 4 (8)**
- Whanau Whare 3 (Single) **x 27**
- Mara Kai (Food Garden)
- Communal Gathering Space
- Carpark
- Speed Humps (gateway)
- Pedestrian Connections
- Buffer Landscaping
- Site Boundary (Phase 1)
- Site Boundary (Phase 2)
- Balance Land

Buildings Key

1. Community Centre
2. Gymnasium
3. Commercial/Health
4. Commercial/Health
5. Workshop/Employment
6. Kohanga Reo (Language Nest)
7. Food Forest
8. Key Cultural Building
9. Mixed Tenure Medium Density
10. Commercial/Business Incubation

Total Yield : 113 (@ 3 storey medium density) or
93 (@ 2 storey medium density)

Phase 1 : 40 Households
Phase 2 : 73 Households (3 storey medium density)
53 Households (2 storey medium density)

Boffa Miskell
www.boffamiskell.co.nz

N

Data Sources:

Projection:

WAINUIOMATA INTEGRATED HOUSING PROJECT

Concept Plan A (ii)

| Date: 18 November 2014 | Revision: 0 |

Plan prepared for Port Nicholson Block Settlement Trust by Boffa Miskell Limited

Project Manager: **Chris.duffy@boffamiskell.co.nz** | *Drawn:* CD | *Checked:* -

whanau whenua whare

toitu te whenua

papakainga

DEVELOPMENT GUIDE

WIKI design & consultancy LTD
www.wiki.maori.nz

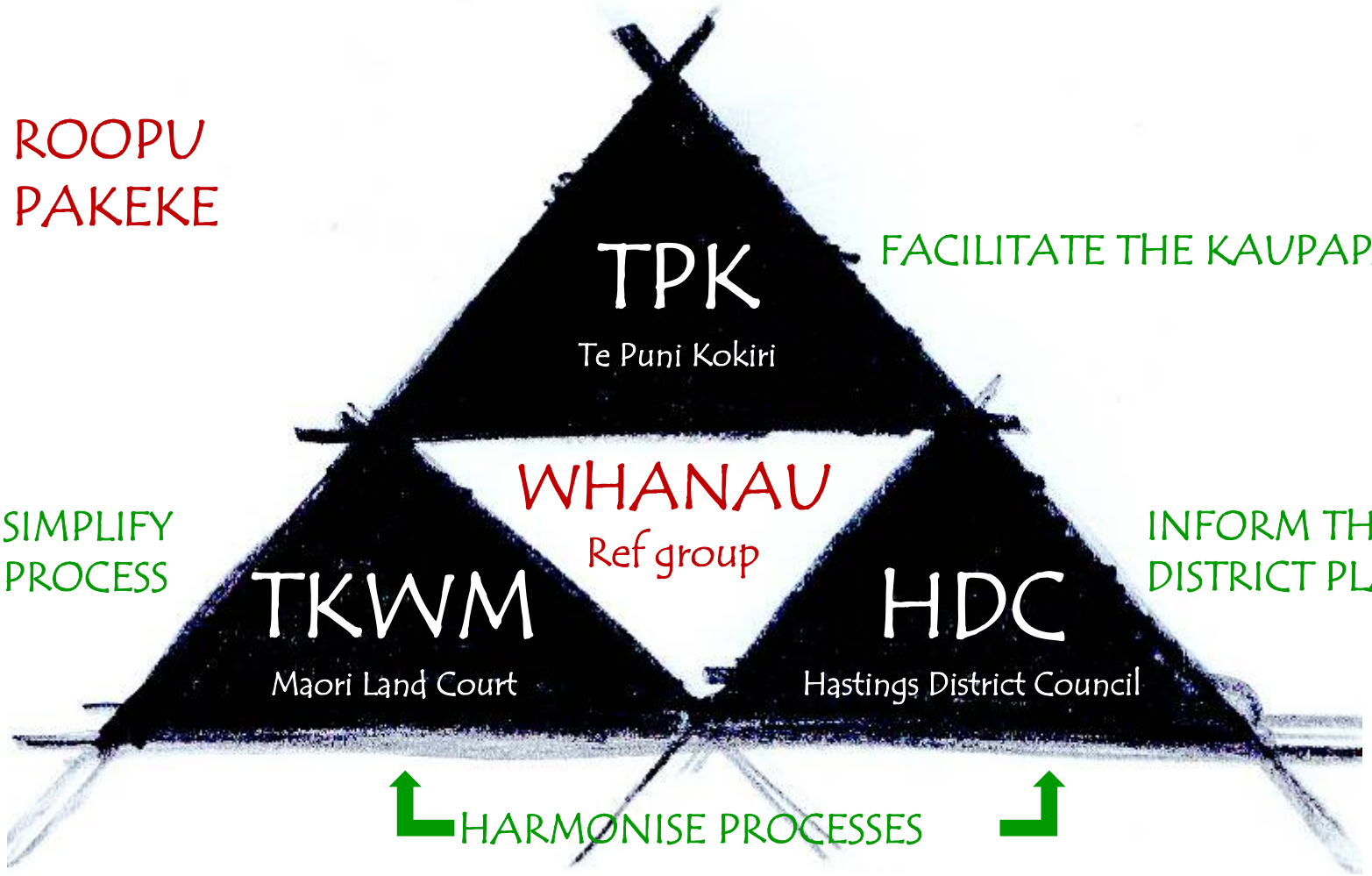
HASTINGS DISTRICT COUNCIL

Karl Wixon. Director WIKI Design. Project consultant.

Marama Laurensen. HDC. Strategic Advisor Culture & Heritage.
Piripi McKay. HDC. Team Leader Environmental Policy.
Craig Scott. HDC. Environmental Planning.

papakainga development project

guide to building homes on ancestral land



'Papakainga'

Roopu Pakeke defined 'Papakainga' as: "Building on ancestral land"

Project Team interpreted this definition to include:

Maori land under Te Ture Whenua Maori Act.

Land under General Title which was alienated out of Maori Title in 1967 by court order where land had any less than three owners.

Ancestral land under General Title where inter-generational occupation has been maintained – 'ahi kaa roa'.

Land purchased as strategic acquisition to reoccupy ancestral land.

our rights & aspirations

te tiriti o waitangi
human rights (universal decl)
economic/social/cultural rights
indigenous rights

whaka-papa
whanau ora
ahi kaa roa
puawaitanga o te taiao

our rights – te Tiriti o Waitangi

te tino rangatiratanga..

o ratou wenua

o ratou kainga

me o ratou taonga katoa

our rights – te Tiriti o Waitangi

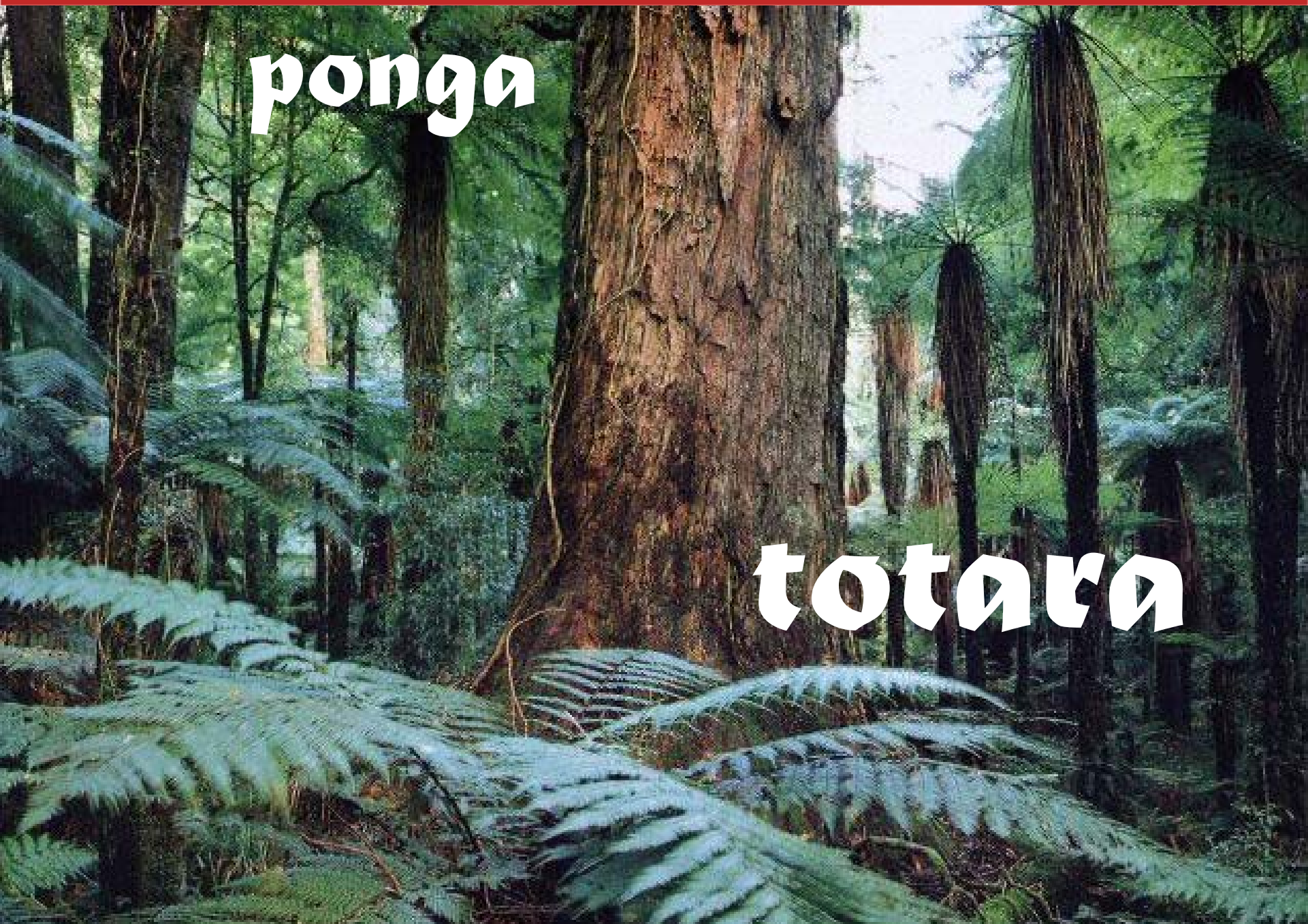
to design our own future...

our right to occupy our land

our right to house our people

in accord with our values


raupo


ponga
totara


nikau

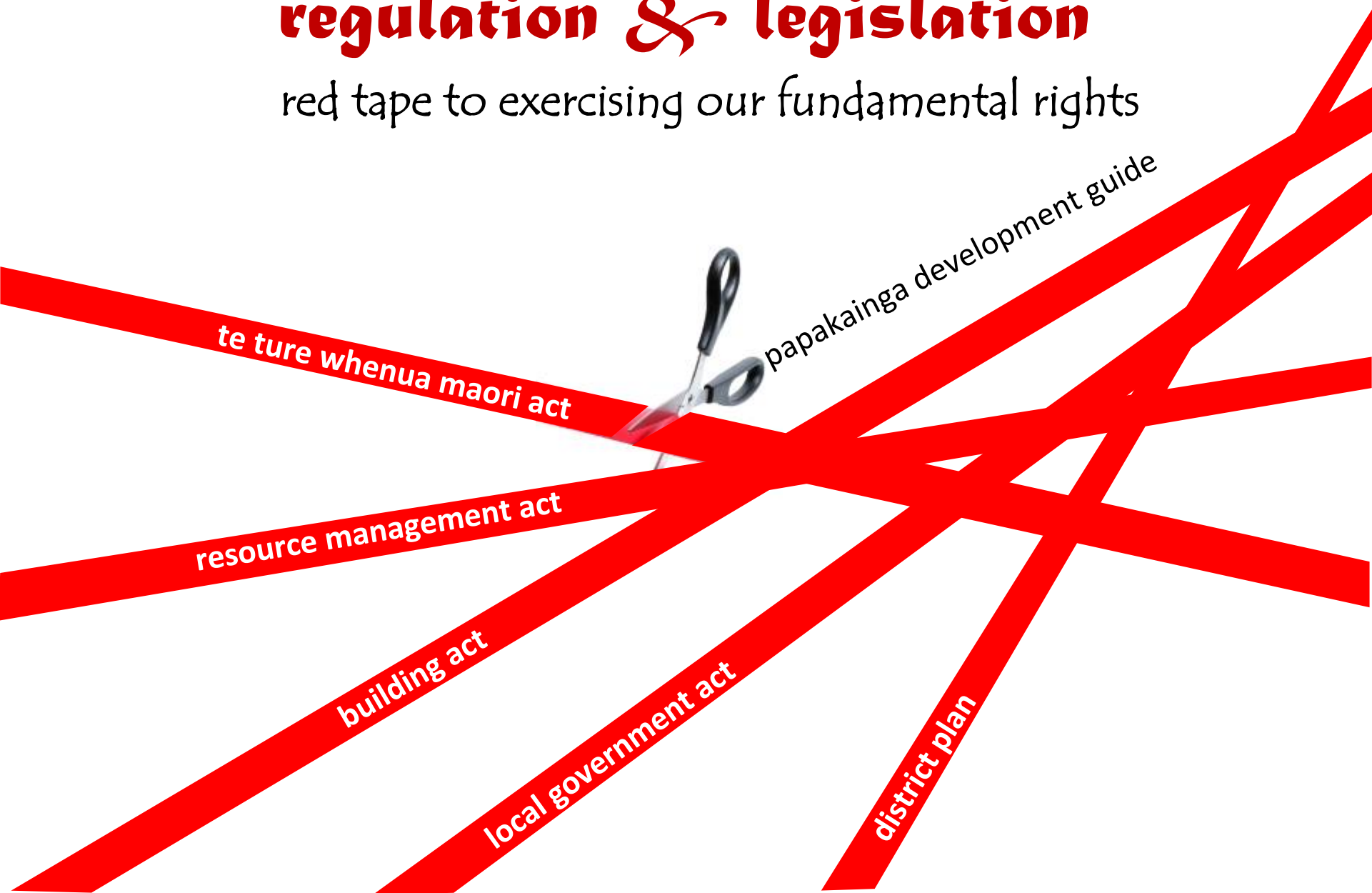

harakeke


pingao

uku

regulation & legislation

red tape to exercising our fundamental rights



lessons learned

Disconnect between agencies / regulations

Greatest barrier is often whanau –
need for a 'whanau first' approach.

Need for whanau driven process (tikanga), NOT process driven whanau (legislation & regulation)

Need for strategic approach i.e. papakainga housing as means to an end – not an end unto itself.('intentional community')

lessons learned

Need for a Maori Switzerland
(neutral and impartial advice – facilitation – mediation etc)

Need to balance individual with collective needs and aspirations.

Need for 'connected' future proof outcomes – infused with our culture and values.

Need for early, and ongoing, engagement of expertise into kaupapa whanau.

lessons learned

HDC & Maori Land Court processes are complex and wrapped in jargon, but navigable, however;

Quality of outcome is more dependant upon whanau and whare processes e.g. development of shared vision, strategy, site and housing design.

Cost and access to finance is the ultimate barrier – there is no such thing as 'low cost' papakainga housing on rural or semi-rural land.
(sewage treatment, power connection, road access etc)

whanau driven process

whano whano

360 appraisal – know your whanau / whenua / past / future

haramai te toki

Equip yourself – gather the tools – gain knowledge

haumi e

Gather in the whanau – whakapapa & kaupapa

hui e

Share vision, understanding, aspirations, needs – formulate plan

taiki e

Strike out – act together

whanau driven process

he aha te mea nui o te ao?

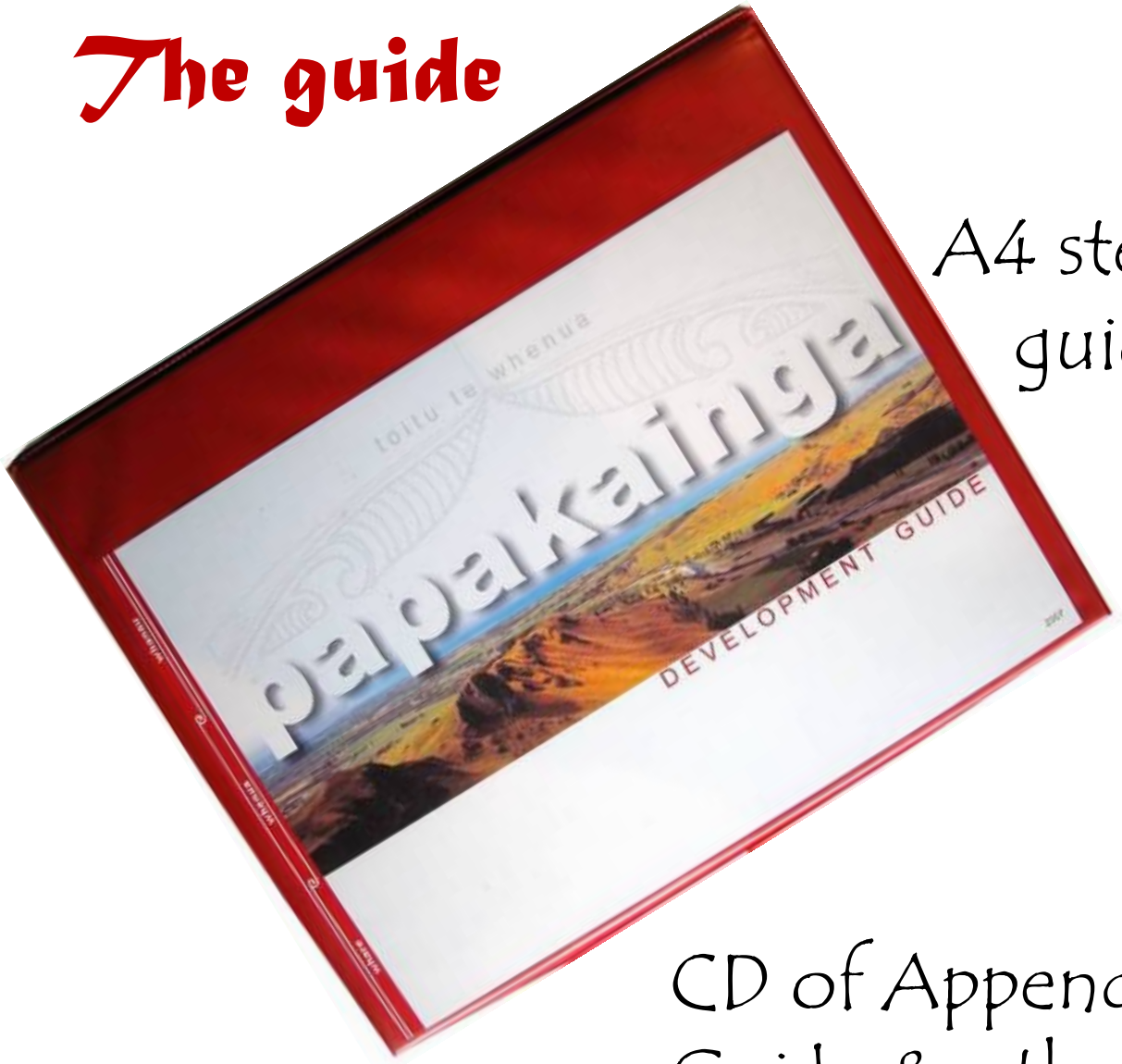
he tangata, he tangata, he tangata

Whatungarongaro te tangata
Toitu te whenua

ko te whare e hanga te tangata

ko te tangata e hangaia e te whare

The guide



A4 step-by step guide

CD of Appendices: Guide & other resources

Guide structure

nga wā – the phases

1. Whanau
2. Whenua
3. Whare

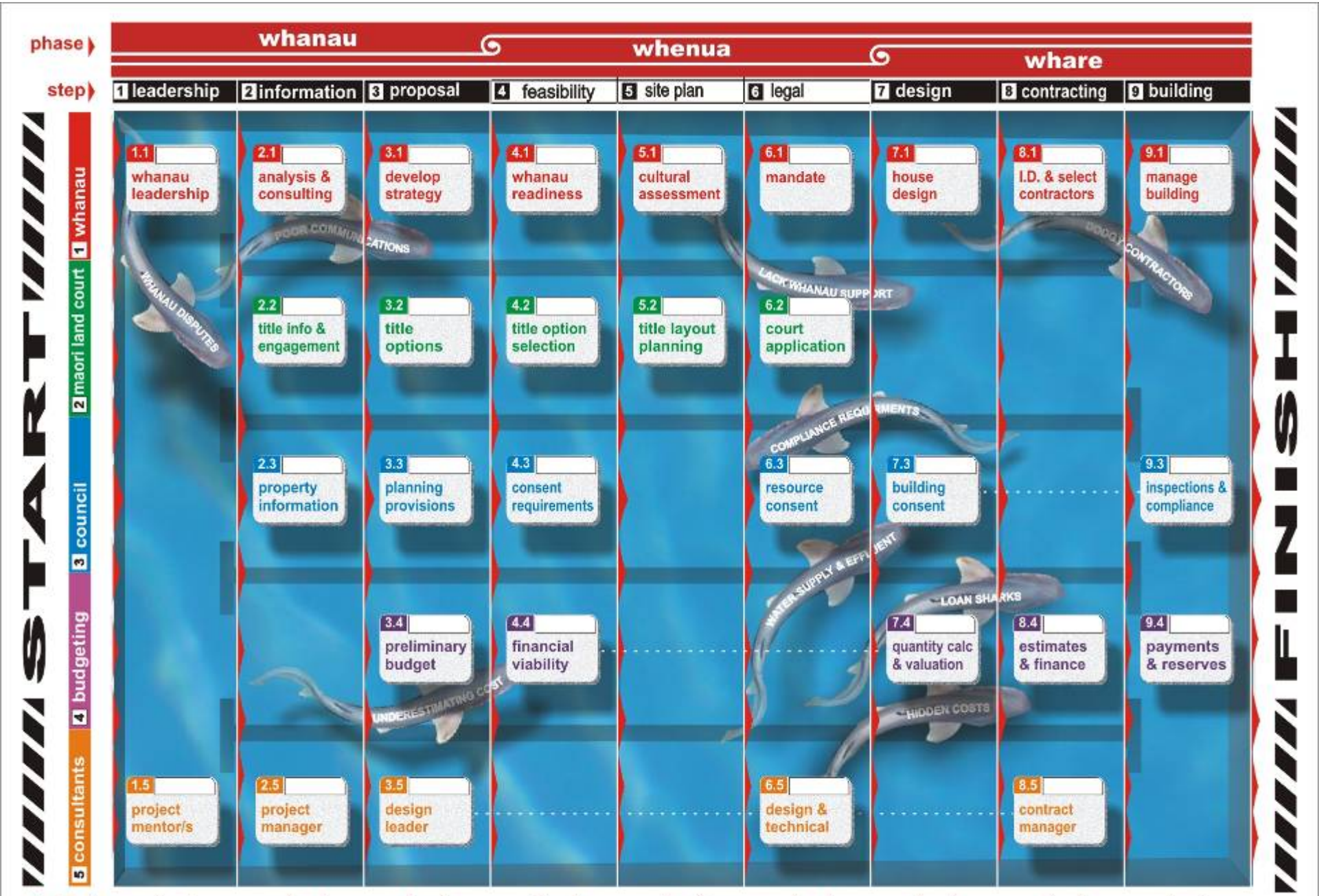
whakatika – the process

1. Leadership
2. Information
3. Proposal
4. Feasibility
5. Site Plan
6. Legal
7. Design
8. Contracts
9. Building

ngā aho – the strands

1. Whanau
2. Maori Land Court
3. Council
4. Budgeting
5. Consultants

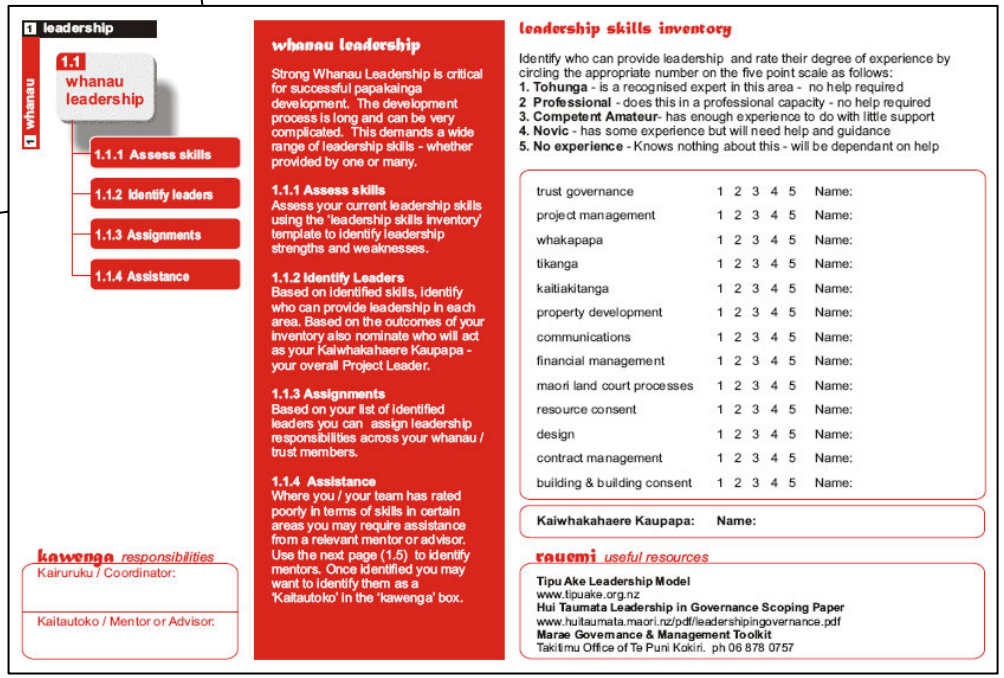
'swim-lane' process map – key to the guide



Content structure

Section introduction:
General info
Whakatauki

Templates:
"fill in the blanks"
& process maps



Template features

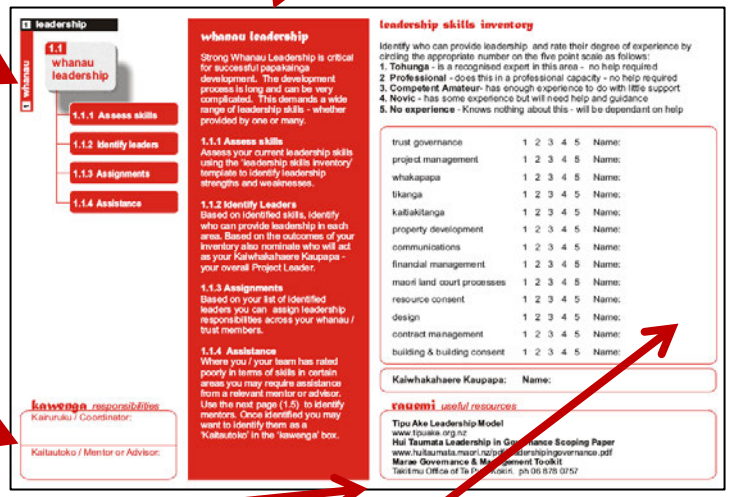
Narrative description of process / Work packages

Section Index & Work Breakdown

whanau leadership

Strong Whanau Leadership is critical for successful papakainga development. The development process is long and can be very complicated. This demands a wide range of leadership skills - whether provided by one or many.

1.1.1 Assess skills
Assess your current leadership skills using the 'leadership skills inventory' template to identify leadership strengths and weaknesses.



Responsibility Assignment

kawenga *responsibilities*

Kairuruku / Coordinator:

Kaitautoko / Mentor or Advisor:

Resource Reference

rauemi *useful resources*

Tipu Ake Leadership Model
www.tipuake.org.nz

Fill in the blank Templates

trust governance	1 2 3 4 5	Name:
project management	1 2 3 4 5	Name:
whakapapa	1 2 3 4 5	Name:
tikanga	1 2 3 4 5	Name:

1.1 whanau leadership

step 1: leadership

Strong Leadership of your papakainga development project is critical to project success.

Papakainga development requires leadership in a variety of domains, such as cultural leadership, design leadership, legal leadership and communications leadership.

Like the waka it also requires a variety of leadership roles or styles such as:

Kaiwhakahaere - leader of direction

Kaihautu - leader of people.

Kaiwhakatere - tactical leader

Leadership can come from within the whanau but can also come from outside the whanau. This guide provides templates for you to identify your leaders, but also to identify where you may need external leadership or support, through the engagement of Kaitautoko - project advisors or mentors.

Whilst leadership can be shared amongst a variety of people, it is vital that the project has a **Kaiwhakahaere Kaupapa** - or Project Leader. That person needs to inspire and weld together the whanau and others towards the achievement of a compelling vision.

1.5 project mentor/s

ki nga whakaeke haumi

"Join those who can join sections of a canoe"

Seek those leaders who are able to weld diverse groups into a successful combination.

1351

3.1 development strategy

- 3.1.1 Moemoea
- 3.1.2 Kaupapa
- 3.1.3 Situation Analysis
- 3.1.4 Rautaki
- 3.1.5 Concept Design
- 3.1.6 Project Plan

Template on next page
Templates on previous pages

concept design

Now that you have a clear vision and kaupapa for your development, understand the needs and aspirations you are trying to fulfil and have a strategy for how you wish to fulfil them - you need to use a design professional to facilitate the development and visualisation of a design concept.

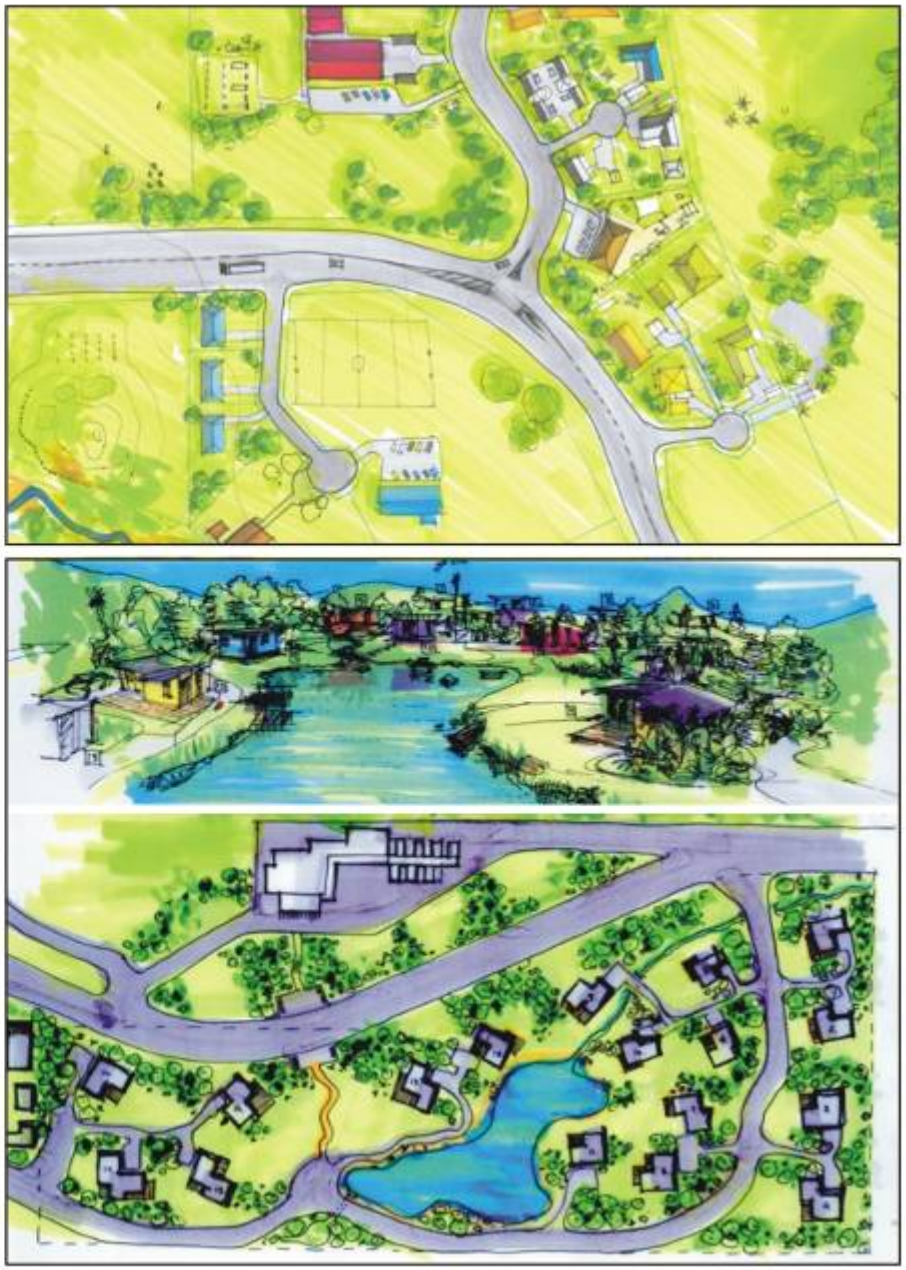
You need to formulate a design brief by collating the information you have completed thus far and making it available to the designer so they can work with your whanau to translate this into a concept design.

It is important you select a designer you are comfortable working with and who is able to work with your whanau. You will be best served by a designer who has a facilitative and collaborative, rather than directive and isolated approach.

This is an opportunity to think creatively about what 'could be' without getting too hung up on detail at this stage.

The design concept should not just address functional issues, it should also engage with spiritual, emotional, social, intellectual and ecological thinking and principles.

The quality of thinking and rigour of debate at this stage will determine the quality of the final outcome.



Concept Design Sketches © Karl Wixon. WIKI Design & Consultancy Ltd. www.wiki.maori.nz

3.2 title options

- 3.2.1 Title Options
- 3.2.2 Pros & Cons
- 3.2.3 Identify 'Best-Fit'

■ Outlined on following page

title options

Based on the outcomes of 3.1 you should know your vision for the development. You should now identify what form of title will provide the 'best-fit' to achieve that vision.

3.2.1 Title Options:

There are five main title options you should explore and consider:

Partition (Maoril Land)
Owners may partition their shares from a block to obtain a separate title. They leave the remaining land to the remaining owners.

Occupation Order (Maoril Land)
An occupation order grants a right to occupy a new or existing house site on Maori freehold land without changing title / ownership.

License to Occupy(Maoril Land)
A license is permission to enter upon land and use it for a stated purpose. It is personal to the licence holder.

Lease (Maoril Land)
A lease creates an 'estate' that can be rented, bought and sold by the lessee, without necessarily changing ownership in the block.

General Title (General Land)
This is a form of land title for land not under Te Ture Whenua Maori Act. It is based on individual title which can be advantageous for finance.

3.2.2 Pros & Cons

The next page sets out pros, cons and pitfalls for each option to inform your decision making.

3.2.3 Best - fit

Based on exploring step 3.2.1 & 3.2.2 above you should be able to identify the 'best-fit' option for you.

Current Maori Land Block

5 Owners: A,B,C,D & E

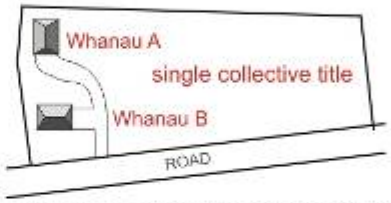
Partition Order

Owners A & B file for Partition

Three Separate Titles Created.
Owners A&B can use own land as security for mortgage more easily than shared land.

Occupation Order

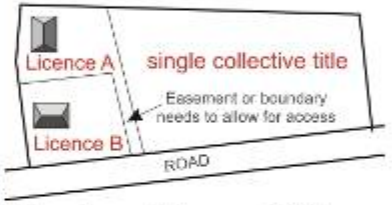
Owners A & B file an Occupation Order



Owners A & B can build on and occupy the land but no separate Title is created. They do not have any exclusive rights over the land.

License to Occupy

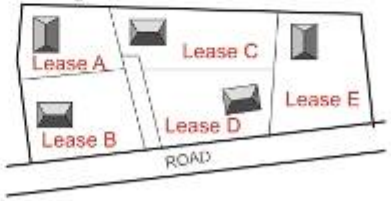
Owners A & B file for License to Occupy



Title unchanged but owners A & B have an exclusive right to occupy a defined part of the block for a defined period of time.

Lease

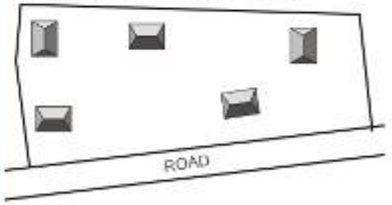
The Trust sub-divides the property for lease retaining the current collective Title.



Each Lease creates an 'estate' that can be bought and sold or rented by the leaseholder. The lease has a commercial value that can be used by the lessee to secure finance.

General Title

If the land is under General Title.



A Family Trust or Company is able to raise finance against the equity in the land more easily than Maori Land, however Resource Consent requirments will be more stringent.

kawenga *responsibilities*

Kairuruku / Coordinator:

Kaitautoko / Mentor or Advisor:

rauemi *useful resources*

The Maori Land Court website contains a number of useful guide booklets that you can download that may help. www.justice.govt.nz/maorilandcourt

3.4 preliminary budget

- 3.4.1 Cost Estimating
- 3.4.2 Finance
- 3.4.3 Budget

preliminary budget

It is important that you get a handle on how much your project is likely to cost as early as possible. At this stage you should have some idea about the number and size of houses you want to build so you should be able to work out an initial cost estimate as a basis for considering what funds you have available and how any balance will be financed.

3.4.1 Cost Estimating

At this stage you can only work out a 'best guess' cost based on looking at all areas of cost and in some cases applying applicable rates. Use the table on this page to develop an estimate.

3.4.2 Finance

At this stage you need to think about where funding or finance is going to come from to meet your cost estimate. Options may include own funds, mortgage finance, using equity in other properties etc. It is a good idea to start talking to your bank manager or a good mortgage broker at this stage - they can probably explore options with you.

3.4.3 Budget

Your project budget should make provision for cost variation and unexpected costs. At this stage you may want to allow 15 % contingency for cost variation on expected costs and a further 5% for unexpected costs. That means working out your best estimate and adding another 20%.

budget template

Legal costs - Maori Land Court / conveyancing	$
House costs (work on $1500 per square metre)	$
Design Costs (Architect about 10% of house costs above - Architectural Designer 5% or consult design & build contractor)	$
Structural Engineer (as required for house design $200-$1500)	$
Geotechnical Engineer (if site is steep, has fill or unstable)	$
Civil Engineer (if there are large site works or roads required)	$
Project Manager (if the project requires managing & you do not use an architect or someone from within the whanau or trust)	$
Valuer (You will need a valuation off plan & during build c$300ea)	$
Insurance (You may need builders works insurance during building)	$
Consents (You will need Building & may need Resource Consent)	$
Contributions (You will be required to pay min$4k per house for roading, reserves, infrastructure etc if you are in a rural area)	$
Site Services (You may need portaloo, container, skip bin etc)	$
Site prep (This may or may not be included in house building cost)	$
Services Connection (You will need temporary then permanent connections of power, water, phone to the site and then house/s)	$
Drainage (Depending on the site you may need drainage systems)	$
Sewage Systems (If you cannot connect to sewer mains you will probably need an effluent treatment & disposal system $10k+)	$
Water bore (If you can't connect to mains you may need a bore)	$
Landscaping (Topsoil after site finished, planting, mulching etc)	$
Roading (if required), driveways, fences, paving etc.	$
Fit-out (Drapes, floor coverings, furniture, appliances)	$
SUB-TOTAL	$
PLUS 20% CONTINGENCY	$
BUDGET	$

kawenga *responsibilities*

Kairuruku / Coordinator:

Kaitautoko / Mentor or Advisor:

rauemi *useful resources*

www.nailed.co.nz - a sponsored site by building industry companies
www.consumerbuild.org.nz - by Dept of Building & Housing & Consumers Institute
www.buildingguide.co.nz - a commissioned general building process guide
www.level.org.nz - authority on sustainable building
www.branz.co.nz - the Building Research Association of New Zealand

6.3 resource consent

- 6.3.1 Process
- 6.3.2 Site Plan
- 6.3.3 AEE
- 6.3.4 Application
- 6.3.5 Satisfy Conditions

Outlined on following page

kawenga *responsibilities*

Kairuruku / Coordinator:

Kaitautoko / Mentor or Advisor:

resource consent

By now you will have a sketch plan setting out any details you will have had to provide the Maori Land Court including demonstration that any consent requirements can be met. Now you are ready to prepare and submit your Resource Consent application.

6.3.1 Process
The chart here sets out the Resource Consent process that you need to understand.

6.3.2 Site Plan
You will need to develop a detailed site plan that satisfies the Council that the proposal is compliant with consent requirements.

6.3.3 AEE
You will need to submit an 'Assessment of Environmental Effects'. This is an important part of your application that you will need professional input into.

6.3.4 Application
You will need to prepare all of the information necessary for submission with the Resource Consent Application. A checklist is set out on the next page.

6.3.5 Satisfy Conditions
Once your Resource Consent Application has been reviewed by Council you may be advised of conditions or requirments that you need to address or redress in the plan. Such conditions will need to be satisfied to obtain consent or in some cases will be monitored after consent is issued.

resource consent process

Pre-application discussion.
Discuss your application with an Environmental Planner at the Council to ensure you understand what is required

Prepare your Resource Consent Application
ensuring it meets any consent requirements identified by Council.

Written approval from affected neighbour's / persons
You may need to discuss your proposal with them if it is outside the controlled activity. In any event it is useful to provide evidence of neighbour's support for the proposal.

Fees and charges
A **deposit fee** will need to be paid at time of submission. For a non-notified consent this may be $300-$600. For a limited notified or notified consent this will be $4000+. Further charges may be possible, particularly if an application goes to hearings.

Lodgement Check
Before your application can be formally received it will go through a lodgement check to ensure everything that needs to be provided is included.

Council reviews application
Your application will be reviewed by relevant council specialists and consultants to ensure it meets consent requirements - it will then be allocated to an Environmental Planner. If further info is required it will be requested within 10 days. The planner will then make a recommendation whether the Council should grant consent and any conditions that should be put on it. If it is not a controlled activity application they may seek to hear from affected parties through a hearing.

Council Hearing (if required)
If your consent needs to go to hearing a panel or commissioner will hear evidence for and against your application in order to decide whether to approve it.

Decision
You will receive a letter advising you whether your application is approved or declined. If approved it will include details of any conditions that need to be met and any expiry date on the consent. If declined you may appeal the decision if you think it is unfair.

rauemi *useful resources*

www.hastingsdc.govt.nz

huanga / outcomes

HDC, Te Kooti Whenua Maori & Te Puni Kokiri relationship collaboration and understanding.

Critical review of Papakainga provisions of the District Plan.

TPK funded pilot project to test the guide in practice and propose a facilitation service.

Whakaakoranga / training

HDC, Te Kooti Whenua Maori & Te Puni Kokiri guide induction & training:

Understanding the guide and respective processes.

Using 'mock scenarios' to trial collaboration, understand each others issues and develop empathy with whanau.

context

The Mahitahi Trust is an Ahuwhenua Trust under Te Ture Whenua Maori Act.

Unfortunately it is not presently functional because many of the whanau members have moved away to Australia.

There are 9 shareholders, 6 of whom are deceased and subsequently no succession orders have been filed.

Huia Whenua is one of the last living shareholders, the other two are her brothers who are living in Sydney. She lives just across the road from their 3.6ha block which is in a rural zone. She has been looking after it for the last ten years without any help from the wider whanau.

She is looking to retire and would like to build a house on the block so she can continue to look after it and provide a place for the whanau to stay when they come home for visits.

She is keen that her moko don't lose their connection with their whenua but is getting sick of her brothers who don't communicate with her except to ask if she has made any money from the block to give to them.

They don't think she should be allowed to build on the land, because it's not hers.

scenario 1

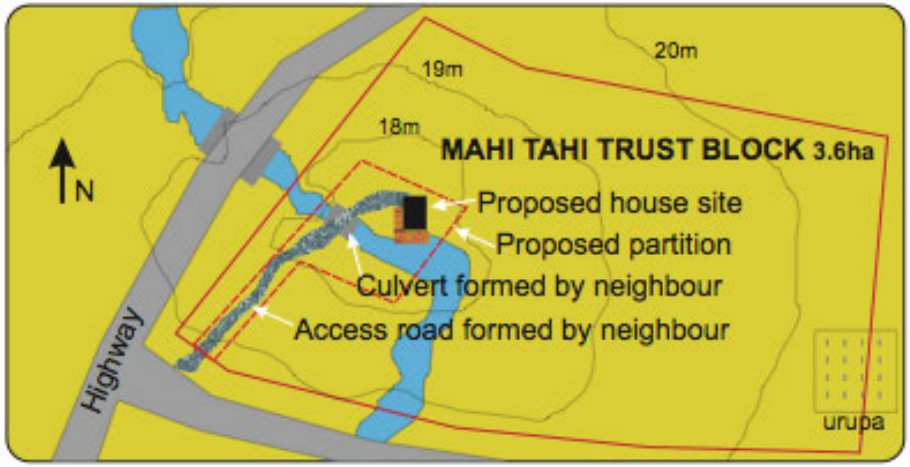
Huia Whenua wants a separate title for her share of the Mahitahi Trust block to build on.

She has already talked to a builder who reckons he can build a 2 bedroom 100sqm house for her for only $120k. She has picked a really nice location for it beside the stream that runsthrough the block, she wants to build a wee deck over the stream so she can catch tuna and waikoura right off her front porch.

She is thrilled about the house price because she has $80k to spend so reckons she will only need to borrow about $50k to cover all the costs.

She has been really lucky that the neighbouring farmer who has been grazing stock on the block for free offered to cut a track for her to the house site, so that has already been done and he even put a culvert over the stream for her to get across to the block from the road. He has put a gate in for her as well.

Huia says she doesn't need to talk to her brothers because they will just get in the way and anyway, she has been the one looking after everything - they've got nothing to do with it.



situation

Huia Whenua has approached the Maori Land Court to get help with filing for partition becuase the builder says he is able to start next week, while they wait for a Building Consent to come through.

Current DP provisions

Current provision based on Papakainga as a District Wide controlled activity.

Papakainga defined in accord with land defined under Te Ture Whenua Act.

Multiple residential dwellings can be built within capacity of site, irrespective of underlying zone.

Few Papakainga developed since introduced 1997

Project DP critique

District Wide approach sound.

Papakainga definition too narrow.

User-friendliness of policy – terms and jargon.

Mixed use development – associated activities.

Need for officer support.

DP review process

Being undertaken in partnership with TPK & Te Kooti Whenua Maori – objectives:

1. Providing greater opportunity for papakainga.

2. Encourage more comprehensively planned development.

Issues and options paper for consultation jointly developed with TPK & Council's Maori Committee.

DP review focus

Inclusion of land converted to general title under the 1967 Maori Affairs Amendment Act (repealed '74)

Encouraging coordinated, sustainable & self sufficient development.

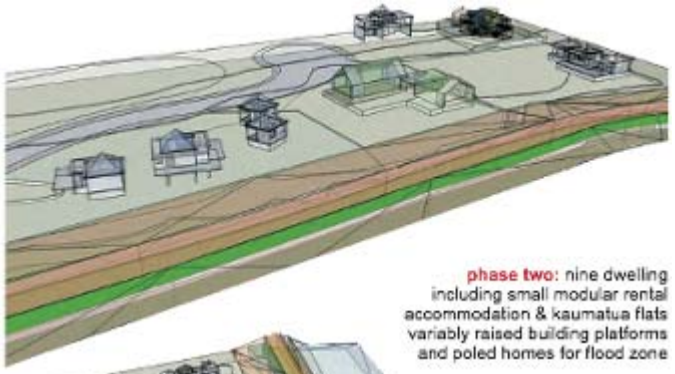
Incorporation of Low Impact Design principles and principles of tikanga & kaitiakitanga.

Scheduling General Land sites into DP for papakainga in accord with ancestral associations & culturally based aspirations.

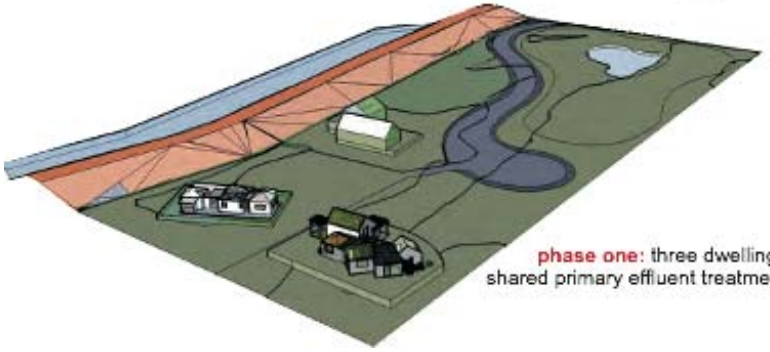
TPK Pilot Project

Trial use of the guide and facilitation service.

phased modular dwelling development

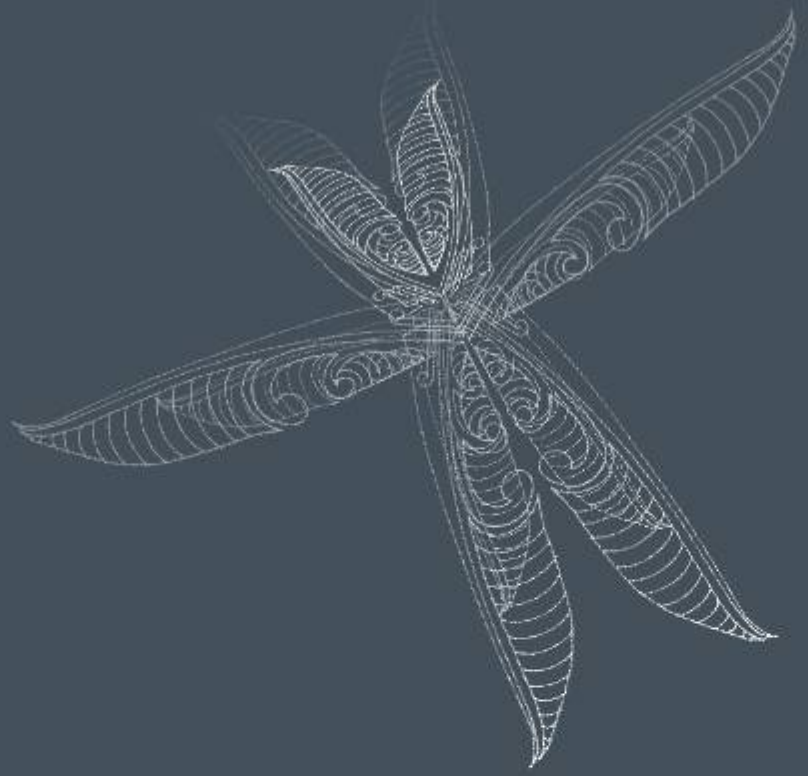


phase two: nine dwelling including small modular rental accommodation & kaumatua flats variably raised building platforms and poled homes for flood zone



phase one: three dwellings shared primary effluent treatment

Case Study including 'lessons learned' can be viewed on www.tearanga.maori.nz



wairua

papatuanuku

kaitiakitanga

mana whenua

whakapapa

turangawaewae

mana tupuna

pu taiao

ahi kaa roa

mauri

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

PAPAKĀINGA HOUSING DEVELOPMENT

86-102 MOOHAN STREET, WAINUIOMATA

Land at Wainuiomata is being considered for a papakāinga development. The Trust is wanting to hear from people who would be interested in receiving regular information on what is planned, how the proposal is progressing and when houses will be available.

In June this year the Trust obtained a grant to undertake a feasibility study for a housing and social services development on the land which is in the front of, and around the Kohanga Reo. A focus group has been formed to advise on how to integrate the development into this community. Trustee Te Rira (Teri) Puketapu is the convenor of the focus group which also has Kuini Puketapu, Anania Randall and Rawiri Evans, Tom Jamison and Hugh Simonsen.

Although still in the very early stages, the idea is that people who live on the site would build or buy their house and the land would continue to be owned by the Trust. This 'license to occupy' means that people would pay for the house only, without the additional cost of the land. It also means that the land will not be alienated as it is continued to be owned by the Trust

We have begun discussions with Kiwibank. Kiwibank offers a no-deposit Kainga Whenua loan package for borrowings up to $200,000; with a small deposit required for any amount above that.

- The property to be purchased must be for owner occupation by at least one borrower.
- Borrowers can own or have owned a property before.
- There are no income caps for Kainga Whenua Loans.
- You would need to provide satisfactory proof of income to Kiwibank. (e.g. 3x consecutive payslips)
- You will need a good credit history that is acceptable to Kiwibank with satisfactory Account Conduct/History on all accounts, store cards, credit cards for the previous 6 months

If you or a member of your whānau would like to be kept informed of the development please either telephone or email the Trust and we will register your interest in the papakāinga, and keep you informed of the development as it progresses.

Alternatively please complete and mail the attached Expression of Interest.

Concept Plan 1

Legend

- Retained Buildings
- Kaumatua Whare (Elders) **x 10 (20)**
- Whanau Whare 1 (Extended Family) **x 5**
- Whanau Whare 2 (Duplex) **X 3 (6)**
- Whanau Whare 3 (Single) **x 8**
- Mara Kai (Food Garden)
- Communal Gathering Space
- Carpark
- Speed Humps (gateway)
- Pedestrian Connections
- Buffer Landscaping
- Site Boundary (Phase 1)
- Site Boundary (Phase 2)
- Balance Land (Phase 3)

Buildings Amenities

1. Community Centre
2. Gymnasium
3. Commercial/Health
4. Commercial/Health
5. Workshop/Employment
6. Kohanga Reo (Language Nest)
7. Recreational Pitches
8. Mara Kai (Food Garden)

Total Yield - 'Intermediate Site' Only

Phase 1 - 39 Households

Boffa Miskell
www.boffamiskell.co.nz

N

Data Sources:

Project no:

WAINUIOMATA INTEGRATED HOUSING PROJECT

Concept Plan 1

| Date: 25 September 2014 | Revision: 0 |

Plan prepared for Port Nicholson Block Settlement Trust by Boffa Miskell Limited

Project Manager: Chris.duffy@boffamiskell.co.nz | Drawn: CD | Checked: -

Concept Plan 2

Legend

- Key Cultural Building
- Retained Buildings
- Apartments **[x 12]**
- Kaumatua Whare (Elders) **[x 7 (14)]**
- Whanau Whare 1 (Extended Family) **[x 5]**
- Whanau Whare 2 (Duplex) **[x 3 (6)]**
- Whanau Whare 3 (Single) **[x 8]**
- Mara Kai (Food Garden)
- Communal Gathering Space
- Carpark
- Speed Humps (gateway)
- Pedestrian Connections
- Buffer Landscaping
- Site Boundary (Phase 1)
- Site Boundary (Phase 2)
- Balance Land (Phase 3)

Buildings Key

1. Community Centre
2. Gymnasium
3. Commercial/Health
4. Commercial/Health
5. Workshop/Employment
6. Kohanga Reo (Language Nest)
7. Apartments (Rented)
8. Key Cultural Building
9. Recreational Pitches

Total Yield - 'Intermediate Site' Only

45 Households

Boffa Miskell
www.boffamiskell.co.nz

N

Data Sources

Projection

WAINUIOMATA INTEGRATED HOUSING PROJECT

Concept Plan 2

| Date: 25 September 2014 | Revision: 0 |

Plan prepared for Port Nicholson Block Settlement Trust by Boffa Miskell Limited

Project Manager: Chris.duffy@boffamiskell.co.nz | Drawn: CO | Checked: -

Concept Plan 3

Legend

- Key Cultural Building
- Retained Buildings
- Apartments
- Kaumatua Whare (Elders)
- Whanau Whare 1 (Extended Family)
- Whanau Whare 2 (Duplex)
- Whanau Whare 3 (Single)
- Mara Kai (Food Garden)
- Communal Gathering Space
- Carpark
- Speed Humps (gateway)
- Pedestrian Connections
- Buffer Landscaping
- Site Boundary (Phase 1) 'Intermediate Site'
- Site Boundary (Phase 2)
- Balance Land (Phase 3)

Buildings Key

1. Community Centre
2. Gymnasium
3. Commercial/Health
4. Commercial/Health
5. Workshop/Employment
6. Kohanga Reo (Language Nest)
7. Apartments (Rented)
8. Key Cultural Building
9. Recreational Pitches

Total Yield - 'Intermediate Site'

Phase 1 - 52 Households

Boffa Miskell
www.boffamiskell.co.nz

N

Data Sources:

Project no.:

WAINUIOMATA INTEGRATED HOUSING PROJECT

Concept Plan 3

| Date: 25 September 2014 | Revision: 0 |

Plan prepared for Port Nicholson Block Settlement Trust by Boffa Miskell Limited

Project Manager: Chris.duffy@boffamiskell.co.nz | Drawn: CD | Checked:

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

PAPAKĀINGA HOUSING SURVEY

PLEASE COMPLETE THIS SURVEY IF YOU WOULD LIKE TO BE KEPT INFORMED ABOUT THIS DEVELOPMENT

1. CONTACT DETAILS FOR THE TRUST TO KEEP IN TOUCH WITH YOU

Name:	
Address:	
Postal address:	
Phone:	**Cell Phone:**
Email address:	

2. WHEN WOULD YOU LOOK TO LIVE AT THE PROPOSED PAPAKĀINGA DEVELOPMENT?

(Please tick which option below best represents your situation)

Expected timeframe:	✓	**Reasons:** (employment, children at school, saving deposit).
Within the next 6 to 12 months		
1 to 2 years		
More than 2 years		

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

3. HOW MANY OF YOUR WHĀNAU WOULD NEED TO BE HOUSED?

Total number of people in your whanau: _____

(Please specify number of each)

Pakeke: ☐ Tāne: ☐ Wahine: ☐ Kuia: ☐ Koroua: ☐

Tamariki: ☐ Tama: ☐ Kōtiro: ☐

4. WHAT TYPE OF HOUSING WOULD YOU PREFER IF YOU COULD LIVE IN THE PROPOSED PAPAKĀINGA?

Housing Options:	House size (Number of bedrooms and housing type i.e. traditional house and section, town house and or apartments etc.)
Individual homeownership	
Whānau rental home	
Kaumātua rental unit	

What information do you required to assist you in making this decision?

5. DO YOU HAVE ANY SKILLS, QUALIFICATIONS, EXPERIENCE AND OR CONTACTS THE TRUST COULD UTILISE FOR OUR PAPAKĀINGA PROJECT?

_____

_____

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

6. PLEASE TELL US A LITTLE ABOUT YOUR CURRENT HOUSING

(Please circle one)

Current house	**Number Bedrooms**	**Other house amenities or features you and your whanau liked** i.e. garage, separate toilet, bathroom, laundry etc.
Rental property		
Own home		

7. IF YOU RENT, WHO DO YOU RENT FROM?

(Please tick one)

Housing New Zealand		City Council	
Private landlord		Board with whānau	
Other situation			

8. WHAT IS YOUR WEEKLY RENT?

(Please tick one)

$150-200		$250-300	
$200-250		$300-350	
Other			

9. THERE IS A KŌHANGA REO ON THIS LAND

What other services or amenities would you like to see included in the papakāinga?

_____

_____

PORT NICHOLSON BLOCK
SETTLEMENT TRUST

10. IS THERE ANY OTHER INFORMATION YOU WOULD LIKE OR WANT TO TELL US?

11. WOULD YOU BE INTERESTED IN ATTENDING A PAPAKĀINGA WORKSHOP TO DISCUSS THE PRINCIPLES AND VALUES THAT SHOULD BE INCLUDED IN THE PAPAKAINGA?

(Please tick one)

Yes, please let me know when these will be held	
No thanks	

Please post completed survey to Port Nicholson Block Settlement Trust, ATTN: Papakainga Housing, PO Box 12164, Wellington 6011, or alternatively email to reception@portnicholson.org.nz

Need help or have any questions? Please call us on 0800 767 8642 or 04 472 3872

PNSBT Wainuiomata Site

Planning Outline Notes

Introduction

Through the Treaty Settlement process the Port Nicholson Settlement Block Trust (PNSBT) has acquired a number of land parcels formerly owned by the Crown, including the former Wainuiomata Intermediate/High School site. The PNBST have been exploring development opportunities for the future use of the site (or a part thereof), and have identified papakainga housing as a major opportunity for further consideration as well as other potential land uses (refer below).

This set of notes identifies the current provisions for the Hutt City District Plan and then identifies potential future land uses sought by the PNSBT as a basis to discuss with Hutt City Council with regard to a potential Plan Change to provide enabling provisions within the District Plan.

Current Situation

Description

The site is located at 82 Moohan Street, Wainuiomata and comprises Lots 28-38 DP 21094. The overall area is approximately 11ha, of which 3.4ha is allied with the current Kohanga Reo and associated land located in the southern portion of the site.

Although the site was previously subject to a Ministry of Education designation, it is understood that this was subsequently uplifted when the former Wainuiomata Intermediate/High School was deemed surplus to requirements in the late 1990's/early 2000's.

Activity Area

Under the City of Lower Hutt District Plan the site is located in the General Residential Activity Area. The area provides for a range of residential (e.g. dwellings, kohanga reo, residential facilities) and non-residential (e.g. health care, marae, places of assembly, schools) activities, subject to compliance with specified conditions, standards and terms.

Provision is also made in this type of Activity Area for medium density residential development around some commercial centres, along major transport routes, in residential areas where existing dwelling densities are higher (e.g. the area between Jackson St and the Esplanade, Petone), where residential amenity values will not be compromised and where there is infrastructure service capacity. This provision does not extend to the subject site.

Although Chapter 2 – Resource Management and the Tangata Whenua of Lower Hutt identifies that in developing the plan proactive policies concerning papakainga/whanau housing were carefully examined in co-operation of tangata whenua,[1] this activity is not specifically identified in the General Residential Activity Area.

[1] Refer Section 2.2(ii), pg.2.2. The definitions chapter of the plan also includes a definition of papakainga housing, which is defined as 'residential accommodation on Maori owned land' (pg.3.9)

Development Requirements

The General Residential Activity Area provides for residential development of 3 or more residential dwellings as a restricted discretionary activity.[2] Given the likely communal, multi-unit nature of papakainga housing it anticipated that any future development of the subject site for this purpose would fall into this activity class, subject to complying with the following permitted activity conditions relating to the area and the parking and access controls in Chapter 14A – Transport.

General Residential Activity Area – Permitted Activity Conditions

- Net site area: 400m2 (versus 300m2 for sites identified as medium density residential);
- Minimum yard requirements: 3m front yard, 1m for all other yards;
- Recession planes: 2.5m + 45degrees from all site boundaries (excluding TV aerials, flagpoles and chimneys);
- Maximum height: 8m, with maximum overall height not exceeding 13m;[3]
- Maximum site coverage: 35% (versus 40% for sites identified as medium density residential);
- Maximum length: No part of any building exceeding 20m in length is to fall outside two arms meeting at a common point on the boundary and each making an angle of 20 degrees with that boundary;[4]
- Permeable surfaces: minimum 30% of net site area;
- Dust: outside areas are to be sealed, surfaced or managed to avoid dust nuisance;
- Light spill and glare: additional illumination from artificial light sources is to not exceed 8 lux measured at the window of any dwelling.

Transport – Permitted Activity Conditions[5]

- Vehicle access: access to new development from the public street network is to be located and designed to ensure convenient and safe movement to and from the site, with minimal interference to other traffic, to pedestrians and to on-street parked vehicles;
- Intersection separation distances: 15m for any driveway with 5-20 vehicle movements per/hour, 20m for any driveway with more than 20 vehicle movements per/hour;
- Footpath vehicle crossings: any vehicle crossings over footpaths need to comply with widths outlined in Table 5,[6] and are restricted to a maximum of 2 for any front site with a total frontage of 50m or less (and not exceed 50% of the frontage) or 3 on any site with a total frontage that exceeds 50m;
- Circulation and manoeuvring space: sufficient internal roading is to be provided to allow for all necessary movements to occur without the need to use public roads, including movement between the road and facilities within the site such as parking and ensuring that access/egress occurs in a forward direction;
- Vehicle parking: 1 park per dwelling;[7]
- Parking space location: parking spaces are to be provided on-site;
- Design standards: parking layout, design and detailing needs to facilitate the convenient, safe and efficient use of parking spaces, and all spaces need to be formed and maintained to

[2] Refer Rule 4A 2.3(a); pg.4A.19
[3] Refer Appendix General Residential 16, pg.4A.42
[4] Refer Appendix General Residential 18, pg.4A.48
[5] Refer Rule 14A(ii) 2.1, pgs.14A.10-14A.15, Rule 14A(iii) 2.1, pgs.14A.22-14A.24 and
[6] Refer Table 5 – Property Access Widths, pg.14A.13
[7] Refer Appendix Transport 3, pg.14A.37 (based on 3 or more dwellings on a single site)

accommodate all weather use, to be provided with access from a properly constructed crossing and have dimensions that comply with Australian Standard AS2890 Part 1;
- Loading and unloading: adequate on-site provision needs to be made for loading/unloading all goods and materials associated with the residential development.

In considering any proposal to develop the site for papakainga housing the Council will be guided by the following matters:[8]

- How the proposal addresses the Medium Density Housing Design Guide, including consideration of such factors as: [9]
    - Respecting the built character and pattern of the existing neighbourhood, including the distance between buildings, the height and width of buildings and existing building types;
    - Maintaining privacy and amenity on-site and at the boundaries;
    - Ensuring clear separation, variation in size and form and reduction in height of dwellings where medium density development occurs in an area comprised of single dwellings on individual sites;
    - Ensuring that buildings connect with useful outdoor space and enjoy reasonable privacy, good access to sunlight and a sense of open space and independence;
    - Orienting living areas in dwellings to realise optimal solar gain;
    - Providing individual dwellings with a usable private outdoor space comprising a minimum area of 35m2 and a minimum dimension of 3m;
    - Designing dwellings to reduce their load on infrastructure services (e.g. minimal use of impermeable surfaces, use of on-site stormwater conservation measures);
    - Designing accessways and vehicle manoeuvring spaces that are attractive and landscaped as an integral part of the development;
    - Ensuring that garages and open carparking are not located in a line on the street frontage or within the development;
    - Designing front fences and walls of materials compatible with the overall development and that enable visual connection with the street;
    - Locating rubbish and recycling storage in areas that are easily accessible and not visually obtrusive;
    - Orienting windows and doors to the street and shared spaces;
    - Incorporating existing plantings and trees into the development; and
    - Integrating high quality landscaping as an integral part of the site layout;
- Any adverse effects on amenity values within the site or on the surrounding residential area (e.g. building density, height, separation distances);
- Vehicle and pedestrian access and egress;
- Landscaping and retention of existing vegetation;
- Public transport and non-residential service (e.g. schools, medical facilities, shops) accessibility;
- Any recorded flood risk; and
- Infrastructure service capacity.

In the event that any development proposal for the subject site is unable to comply with any of the relevant permitted activity conditions it would be treated as a full discretionary activity.

[8] Refer Rule 4A 2.3.1, pgs.4A.19-4A.20
[9] Refer Appendix General Residential 19, pgs. 4A.49-4A.53

Subdivision Requirements

Subdivision in the General Residential Activity Area is a controlled activity subject to compliance with the following standards and the permitted activity conditions for the area:[10]

- Minimum lot size: 400m2 (versus 300m2 for sites identified as medium density residential);
- Minimum frontage: 3m;
- Shape factor: ability to accommodate a 10m x 15m rectangle which contains a suitable building platform (versus ability to accommodate a 9m x 14m rectangle which contains a suitable building platform for sites identified as medium density residential);
- Engineering design requirements:
    - Access: Chapter 14A – Transport and Part 3 NZS 4404:2004 – Land Development and Subdivision Engineering;
    - Service lanes, private ways, pedestrian accessways and walkways: Chapter 14A – Transport and Part 3 NZS 4404:2004 – Land Development and Subdivision Engineering (excluding formation requirements for privateways);
    - Street lighting: AS/NZS 1158:2005 Code of Practice for Road Lighting;
    - Stormwater: standard set out in table on pg.11.11 – Levels of stormwater protection to be provided by new drains in existing areas;
    - Wastewater: 270 l/h/d average dry weather flow, 540 l/h/d peak dry weather flow and 1080 l/h/d maximum wet weather flow;
    - Water supply: NZS PAS 4509:2008 NZ Fire Service Code of Practice for Fire Fighting Water Supplies, Hutt City Council Bylaw 1997 Part 17 Water Supply and;
    - Telecommunications and Electricity: relevant network utility operator requirements;
    - Earthworks: NZS 4431:1989 Code of Practice for Earth Fill for Residential Development, Part 2 NZS 4404:2004 – Land Development and Subdivision Engineering and GWRC Erosion and Sediment Control Guidelines for the Wellington Region and Small Earthworks Erosion and Sediment Control for small sites;
- Contamination: MfE Contaminated Land Management Guidelines 1-5;
- Earthworks: permitted activity conditions 14I 2.1.1 (ground level, quantity), NZS 4431:1989 Code of Practice for Earth Fill for Residential Development, Part 2 NZS 4404:2004 – Land Development and Subdivision Engineering and GWRC Erosion and Sediment Control Guidelines for the Wellington Region and Small Earthworks Erosion and Sediment Control for small sites.

In considering any subdivision proposal relevant matters over which Council has reserved control are as follows:[11]

- The design and layout of the subdivision, including the size, shape and position of any lot, any roads or the diversion or alteration to any existing roads, access, passing bays, parking and manoeuvring standard and any necessary easements;
- The provision of servicing, including water supply, wastewater systems, stormwater control and disposal, roads, access, street lighting, telephone and electricity;
- Management of construction effects, including traffic movements, hours of operation and sediment control; and

[10] Refer Rule 11.2.2.1, pgs.11.6-11.15

[11] Refer Rule 11.2.2.2 and associated assessment criteria in Rule 11.2.2.3, pgs.11.15-11.19

- Site contamination remediation measures and works.

In the event that subdivision of the subject site is proposed to create separate titles for papakainga housing or to dispose of any land identified as surplus to requirements the above standards will need to be satisfied. If this is unachievable the subdivision will be treated as either a restricted discretionary or full discretionary activity depending on the degree of non-compliance.

Additional Constraints

Aside from the development and subdivision requirements outlined above, no further identifiable constraints relating to the site are currently apparent (e.g. flood/landslide/seismic hazard, significant natural/cultural/archaeological resources).

Potential Future Activities and Provisions

As noted in the introduction PNSBT wishes to create a new 'precinct' for its constituents at the subject site.

Activities

The types of activities being considered include those which have a residential nature as well as activities which may be open for the use of others from outside the site (including but not limited to):

- Papakainga housing – 20 or more houses of various size including family and kaumatua housing
- Housing in a range of forms including low level apartments and 2 storey town houses which may or may not remain in PNSBT ownership
- Education (currently kohanga reo) as well as 'learning centre' facilities for training, promotion, potentially sale of traditional 'crafts', and other initiatives
- Information centre for genealogy/whakapapa – could include for example Maori land court data, facilitate whanau research on land/heritage etc
- Meeting facilities such as spaces that could be used by external groups and others
- Health care facilities (including possible residential care)
- Offices and small scale commercial activities (similar to home occupation scale) to support on site uses (such as education as noted above) or to supplement those in the area including small business incubator type initiatives
- Food and beverage facilities that can supplement those in the area and the use of the site such as for catering
- A cultural focal building/activities (wharenui/wharekai)
- Food growing and production/processing

Ownership

There are areas of the subject site that may be retained in PNSBT ownership and other areas that could be sold to others to invest in and develop. It is recognised that the area to the north (ex. School playing fields) are more likely to be considered for sale in the future. However, PNSBT recognises the strategic benefits in setting the parameters for the use of this land to ensure value is added if possible and that its interests in the remaining area are protected.

Timing/Staging

There will be need for a staged development approach to recognise the market conditions and capacity for investment in infrastructure. There is an interest however in determining a framework for the wholes site's development and the staging within this framework to ensure the quality of development is appropriate.

Precinct Approach

The current General Residential Area provisions do not provide for the diversity of activities sought to be undertaken and developed at the site.

It is considered a District Plan Change to establish a new set of provisions in the form of an 'overlay' would provide the best statutory basis for enabling the precinct approach to succeed. The nature of a precinct recognises the spatial definition of a discrete area for a specific purpose and of the interrelationship of the elements within that precinct to each other.

Such a precinct would:

- Provide a spatial framework to ensure some certainty of outcomes such as for activities to be located where they do not generate adverse effects between themselves or to areas outside of the site.
- Recognise that 'sites' subdivided across the whole area in a normal suburban subdivision sense may not be the best way to provide for development where there are opportunities for shared and common areas to be used by residents and others in the precinct and retain a more open 'campus like' environment.
- Establish development parameters using the spatial framework and guidelines or the like that enabled buildings (providing they fit that framework) to a certain size and dimensions to occur without resource consents being required.
- Address the needs for car parking on a whole of site basis to prevent unnecessary parking provision for multiple land uses.
- Provide for staging of development and the management of services provision and any financial contributions.
- Provide specific objectives and policies that pertain to the site and the outcomes desired
- Address issues of precedents being set regarding the proposed activities in other areas.
- Enable the community to engage with PNSBT around its specific objectives.

Process

The PNSBT wishes to engage with Hutt City Council to agree a process for a Plan Change to be formulated that has Council support and sponsorship to the formulation of that Plan Change.

The Trust wishes to engage early with the Wainuiomata community regarding its proposals and with an outline of its precinct concepts prior to any Plan Change being notified.

The Trust would like to progress with planning to establish a precinct at the earliest opportunity to enable the process to be progressed and development to proceed as expediently as possible.

PNSBT has undertaken preliminary work to scope concepts for the precinct and understands the need for expert inputs to the further design and development of District Plan provisions to ensure a robust and appropriate process and outcomes result.

Te Kāwanatanga o Aotearoa

Te Puni Kōkiri
REALISING MĀORI POTENTIAL

A Guide to Papakāinga Housing

Summary

This booklet is a guide to whānau papakāinga housing available to you, your whānau and community.

The Māori Housing Network supports whānau, hapū and iwi with information, advice, and practical support to improve and develop whānau housing.

Whakataukī

Ko te whare e hanga te tangata, ko te tangata e hangaia e te whare.

The whare (whare tangata) builds the people and the people build the whare.

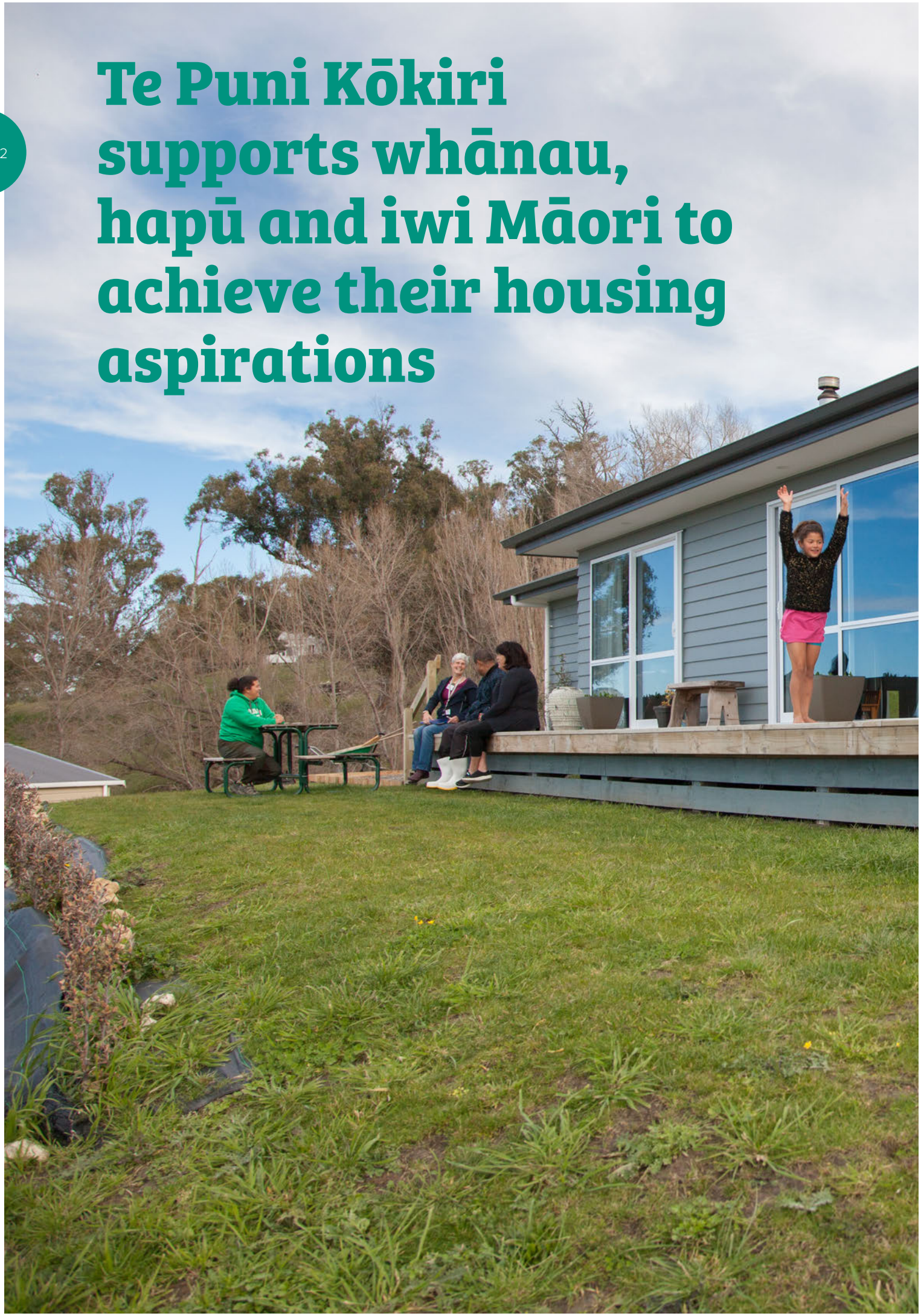
Cover Image

The cover image is from the Aorangi Māori Trust Board papakāinga at Waipatu, 2016. Photo by Josie McClutchie.

Nau mai haere mai ki tēnei pukapuka tātaki mahi mō ngā papakāinga

This booklet is a guide to whānau papakāinga housing support available to you, your whānau and community.

Te Puni Kōkiri supports whānau, hapū and iwi Māori to achieve their housing aspirations

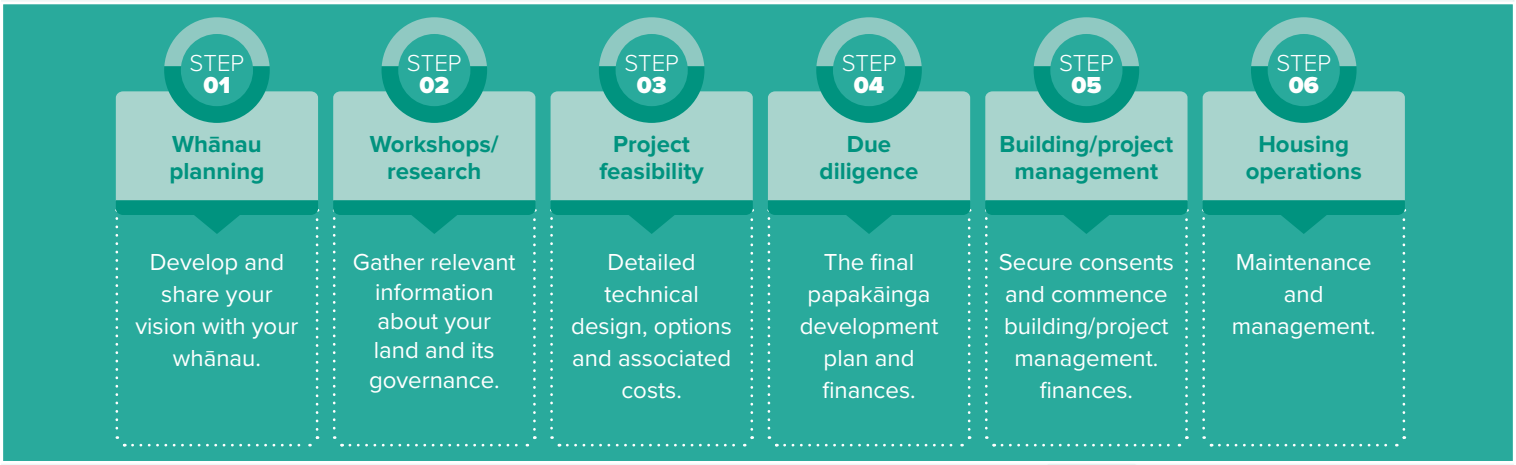


This guide provides a step-by-step process to assist whānau to plan for and complete papakāinga housing on Māori Freehold and in some cases General Land.

The process

This guide sets out the process for developing papakāinga housing in three stages with self-assessment, tips and advice to progress your papakāinga housing development as a six step approach.

The three stages of papakāinga housing development



The Māori Housing Network

The Māori Housing Network can provide you with information, advice and identify potential sources of funding to help develop housing on your papakāinga.

A **papakāinga**, for the purpose of this guide, refers to a group of houses, of three or more, on whenua Māori as a 'community' which may include broader support and occupant involvement.

The term **papakāinga** can different meanings depending on the context.

Whenua Māori in the context of papakāinga can refer to:

- Māori Freehold Land registered in the Māori Land Court as a Māori title, OR
- Land in General Title where it once was Māori title (pre the compulsory conversion to General Title from 1967 for example), OR
- Land in the process or intention of being converted back into Māori title OR
- Land that is considered to be Māori 'customary' land with clear and demonstrated tikanga, history or other matters of significance (for example adjacent to a Marae) meaning it is 'attached' to the ownership and kaitiaki of the whānau/hapū.

Left: Waimarama 3A1C2 papakāinga residents at Waimarama, 2017. Photo by Josie McClutchie.

Whānau papakāinga housing development takes place in three stages

Stage 1

STEP 1

Step 1. Whānau planning

He ora te whakapiri, he mate te whakatākiri.

"Survival in sticking together, disaster in separation."

Identify, engage and involve your whānau – you will be far more likely to succeed if you do.

Up to 12 months mahi

The first step is 'whānau planning'. This step requires you to reach consensus across your whānau, hapū, other owners and trustees about a common idea, vision and principles for developing your papakāinga. This step will involve a lot of kōrero, hui and preliminary research and is the most time consuming step in the papakāinga housing development process.

Checklist

Before progressing to the next step in your papakāinga housing development, you should check:

- Why do we want housing, and for who? – this could include a Whānau Ora plan
- If you want rental housing, or housing for whānau to buy.
- Where the housing would be located - this could involve tikanga issues, history, settlement of past disputes.
- If a trust is required – this could include Māori Land Court matters to resolve.
- If you have identified a whānau Project Manager to drive the papakāinga development.

Tips and advice

- Allow extra time for resolving Māori land issues. For instance, one rōpū spent many months considering options for consolidating in neighbouring Māori land, requiring engagement with other whānau and the Māori Land Court to approve the transaction. The outcome was a better site for the papakāinga.
- Consider getting some external support – talk to other rōpū who have completed their own papakāinga housing development or seek advice from the nearest Te Puni Kōkiri regional office.

Case Study

Hone & Miriama Turner Whānau Trust

An innovative papakāinga collectively-owned housing model. The whānau began with their Whānau Ora plans prior to identifying papakāinga housing.

Project Name	Turner whānau papakāinga
Year completed	Construction completed in 2017
Rohe/Location	Ngāruawāhia, Waikato
Ownership structure	The house is owned by the Hone & Miriama Turner Whānau Trust and rented to specific beneficiaries of the Trust
Scope	To develop a whānau plan and set the framework for the whānau's future housing aspirations
Lead Architect/ Designer	Brymer Group Ltd

Under the umbrella of Te Rūnanga o Kirikiriroa the Turner whānau developed their own Whānau Ora plan with Te Puni Kōkiri support.

Their Whānau Ora plan identified three priorities, to:

- Establish a whānau Trust.
- Build a papakāinga.
- Create a business to build financial capacity for the whānau.

As individuals, the Turner whānau did not qualify for lending to assist them to build their own homes – the only way they could see their way towards achieving home ownership was to live together under one roof.

The whānau organised numerous wānanga and hui to discuss their Whānau Ora priorities from which many decisions were made for the papakāinga.

Whānau interactions were guided by the philosophy of having kaitiakitanga at the forefront of relationships, āhurutanga was mandated by the creation of safe quality spaces to engage with each other, koha was required when sharing and receiving contributions in hui, and finally, mauri ora as whānau were always in pursuit of whānau wellbeing.

Trustees attended the Te Pūaha o Waikato papakāinga workshops. Te Puni Kōkiri provided a grant to complete the project feasibility.

The Trust engaged Brymer Group Ltd to develop technical plans for the home and obtained the necessary local authority building consents.

The Trust secured a home loan to build the papakāinga with some funding support through the Māori Housing Network.

The Trust is responsible for the loan and five whānau members who are living in the house will pay a weekly rental to the Trust to assist with the loan repayments. After paying the loan, will continue to sustain the home and the Trust.

Rangitāmoana Wilson, Hone and Miriama Turner Whānau Trust

It started with a whānau plan

Trustee and spokesperson, Rangitāmoana Wilson (Waikato), shares the dream to build their papakāinga started after going through Whānau Ora.

"My parents had eight children and out of us eight children only two own their own homes. We just couldn't get that deposit to purchase, and so, we decided to create something that we can all use to springboard to home ownership."

"We decided as a whānau to create our own answers to our problems, having our own papakāinga is testament to that fact. We as a whānau have come together to find a solution, to find a way to build our papakāinga."

"The first priority after creating our whānau plan was establishing our whānau Trust. The second was our papakāinga. The third was whanaketanga - business."

Rangitāmoana acknowledged the assistance the whānau had received from Te Puni Kōkiri and the Māori Housing Network.

"We are stronger as a whānau and contribute to the whare. This will always be our tūrangawaewae."

Above: The Turner whānau have made their papakāinga housing aspirations a reality with the completion of an eight bedroom home. Photo by Wiremu Grace.

Step 2. Workshops/research

Hokia ki ō maunga kia purea e koe i ngā hau ā Tāwhirimātea.

“Return to your ancestral mountains to be cleansed by the winds of Tāwhirimātea”.

It is important that you walk your whenua to clarify your thinking before committing to any final plan.

Up to 6 months mahi

The second step is ‘workshops and/or research’. This step requires you to undertake research, learning and gathering of information. Your detailed research and investigation will give you reasonable confidence that your papakāinga housing development is viable and will identify any likely barriers.

Checklist

Before progressing to the next step in the papakāinga housing development, you should check:

- If you have consensus to proceed.
- What activities have occurred and what activities are currently occurring on the property.
- If you are ready to be a landlord or a housing manager.
- How real the demand is for housing.
- How you will decide who gets to live in the houses.
- What sort of houses you will need.
- What resource and building consents will you need to secure – this will require researching the District Schemes, consulting with Councils and understanding the physical, historical or planning restrictions of the whenua.
- If there are any legal issues that you need to resolve first.
- If you would like to visit a completed papakāinga and talk to a rōpū that have completed their homes.
- If you have the ability to access finance and budgets.
- If you will be willing to support whānau who may consider a Kāinga Whenua loan.
- If you researched the history of the whenua to understand the governance structure – this will require liaising with the Māori Land Court, obtaining titles and any succession orders or occupancy rights that may still be in place etc.

Tips and advice

- For some rōpū you may like to consider attending papakāinga workshops in your region. Refer to the Te Puni Kōkiri website for information about available workshops.
- Research funding and other resources that may be available to support the ‘visioning’ stage of your papakāinga housing development.
- Validate the need for papakāinga housing. You may want to workshop this or survey whānau.
- Hīkoi/walk over the whenua site for the papakāinga housing to inform viability - sometimes it helps to physically see the site.
- Begin thinking through land tenure, housing tenure, tenancy mixing and selection.
- Get an idea of the skills that you have already and where there maybe gaps.

Case Study

Asset Pro papakāinga planning workshops

Effective workshop series for whānau and rōpū contemplating papakāinga housing. The research and workshop phase is critical before progressing through to the next steps in the papakāinga process.

Project Name	Maniapoto and Hauraki papakāinga workshops
Year completed	Completed in 2016
Rohe/Location	Waikato and Hauraki
Scope	To deliver papakāinga workshops to a minimum of 20 Māori Land Trusts to develop their papakāinga aspirations

Asset Pro delivered three workshops in the Hauraki and Maniapoto regions.

The workshops were a joint initiative co-funded between Te Puni Kōkiri, Waikato District and Waipā District Councils. Participants were able to work through the motivational, legal, financial, governance and operational requirements needed for papakāinga development on their land.

The workshops were aimed at trustees of Māori land, Ahu Whenua, whānau and marae trusts. A minimum of 60 participants attended each workshop.

The workshop participants were able to complete their own research for their respective papakāinga developments. Key areas they researched included: capacity; demand validation; technical planning; and finance.

Here is an example of a whānau who attended the workshops. They completed their own research before progressing to the next stage of the papakāinga development process.

AREA	DESCRIPTION
Capacity	In master planning phase and quote acquisition to do their feasibility work. This project is being driven by a couple wanting to go into their first home on the land next to the marae. They have a fully formed Trust and have sufficient drive to get across the line within the next few months.
Demand Validation	In the process of establishing a house on the site, they will be paving the way for others to follow. There are other whānau interested, however they are not as well informed and are waiting for the couple to go first. The papakāinga will have the capacity to cater for 8 new buildings and 40 people once completed.
Technical Planning	The project will require a scheme plan identifying lots on the land as well as wastewater connection to the main town reticulation that is available through the marae's wastewater network. All other services are within reach of the property. The major hurdle is wastewater access, which requires negotiation with the marae. Without that connection, the project will increase in cost and the number of houses possible will reduce.
Finance	Initial calculations show no issue servicing a Kāinga Whenua loan. The only inequity will be to put in all required infrastructure would be an unfair burden for the couple being the first on the papakāinga; therefore, an infrastructure grant to reduce the infrastructure costs on the couple would be necessary.

> “To be honest I found the wānanga great, they were so helpful. It’s been a good learning opportunity.”

Sally Henry, Asset Pro papakāinga workshops attendee

Research is the key

Sally Henry a member of the Waikai whānau who had attended all three wānanga said that these workshops provided them with the extra ‘oomph’ they needed.

“Had we tried to do this ourselves, we would have just thrown our hands up in the air,” Sally said. “We were about to give up because we just had so many roadblocks but attending these wānanga and receiving the toolkit at the end was just awesome.”

Sally and her partner work in the facilities maintenance industry and had a basic understanding of what it would require to build a papakāinga but not to the detail that the wānanga went into.

“To be honest I found the wānanga great, they were so helpful. It’s been a good learning opportunity. As I was going to the different wānanga I could understand what we had to do, it made it clearer that we had people and whānau sharing their experiences,” she said.

In addition to the wealth of expertise the follow up support was doubly ‘awesome’.

“My partner and I have been heavily involved in re-building his whānau trust, working with the Māori Land Court, through succession processes just last Monday we had our hearing and the judge was very happy with our mahi – and we’ve since received our license to occupy,” Sally explains.

“Now we’re in the process of putting a papakāinga proposal together because of the tautoko we’ve received.”

Step 3. Project feasibility

E kore koe e tata mai i ngā tairo a tū-te-koropanga.

"You cannot penetrate the brambles of Tū-te-koropanga".

Impenetrable obstacles can make your proposal impossible.

Up to 6 months mahi

The third step is 'project feasibility'. With the information you have gathered from Step 1. and Step 2. you, the other owners and trustees are in a better position to engage professional services and technical advice. One of the key things that the Māori Housing Network will consider at this stage is whether your project will likely get to the point of being 'shovel ready' (able to start building).

Checklist

Before progressing to the next step in the papakāinga housing development, you should check:

- If you have obtained the necessary geotechnical reports.
- If there any fault lines or known geotechnical constraints.
- The suitability of the site for the proposed building as well as capacity for management of effluent disposal, waste and storm water.
- If you advanced the planning and resource consents – this will require a masterplan and concept design, Engineer's reports, preliminary financial model, pre-consent meetings, lodging a papakāinga development plan or resource consent application with Council, tenant/occupant selection and policies to support the ongoing management of the papakāinga once built.
- The design and build options for all services - this will include options for roads, waste water, water supply, storm water, power supply and telephone connection etc.
- If you have copies of all of the technical reports for your proposal.
- If you have confirmed the location for the housing sites.
- What whānau facilities are provided for papakāinga residents e.g. park or play ground, whānau whare etc.
- If the Trust identified or set aside any wāhi tapu or significant sites or areas as a reserve.
- If you have completed the Project Viability and Assessment Tool (cost modelling plus long term operational modelling).
- If you have assembled a Project Team and obtained quotes – this will require an Engineer, Architect, Planner, Financial Advisor, Landscape Architect and/or Permaculture Specialist.
- If you need to commence the process for applying for a Kāinga Whenua loan.

Tips and advice

- Consider seeking external support to complete the project feasibility. This will free your time up to concentrate on internal governance and decision-making.
- To make it easier to complete your financial modelling consider using the appropriate Project Viability and Assessment Tool (PVAT). For access to the PVAT contact your Te Puni Kōkiri regional office.
- You may wish to seek advice from your Accountant or Financial Advisor about GST and tax implications. GST can be complicated for housing developments.
- Allow time to organise any Kāinga Whenua loans for whānau and understand all of the requirements. You can seek advice from Housing Zealand Corporation. As a rōpū, this starts with a 'registration of interest' with Housing New Zealand. For individual whānau, you may approach Kiwibank to start the process.

Contact

Housing New Zealand Corporation
0508 935266 (8am-5pm Monday to Friday)
enquiries1@hnzc.co.nz
hnzc.co.nz

Case Study

Waimarāma 3A1C2 Incorporation papakāinga

A successfully completed papakāinga. The project feasibility led to the business case and securing funding support.

Project Name	Waimarāma 3A1C2 Incorporation papakāinga
Year completed	The first stage completed in 2017
Rohe/Location	Waimarāma, Hawke's Bay
Ownership structure	A mixed tenure development of three new affordable rental homes and two home-ownership properties (Licence to Occupy)
Scope	To establish, with infrastructure and as a first stage, a five unit papakāinga. This includes three 3-bedroom affordable rental homes for the Incorporation's ownership and operation, and, two homes built by families with a Licence to Occupy and Kāinga Whenua loans
Lead Architect/ Designer	A1 Homes
Construction Project Manager	Sheeran Associates

Waimarāma 3A1C2 Incorporation is a Māori land organisation that administers a number of Māori land blocks in Waimarāma on behalf of 41 shareholders. In addition to its farming and land management role, the Incorporation worked for nine years towards developing its papakāinga on an ideal site for housing.

The Incorporation had undertaken a significant project feasibility and needs analysis for its proposed papakāinga and secured shareholder support and approval for the development. The Incorporation received resource consent from the Hastings District Council to build a 20 home papakāinga on the Waimarāma 3A1C2 block.

In addition, the Incorporation deliberately withheld dividends to the shareholders so that it would be in a position to contribute towards the project in cash (supplemented with loan finance). Cautiously, the Incorporation staged the papakāinga development as part of a longer-term plan to build the 20 home papakāinga.

The first stage of the papakāinga involved a mixed tenure development of three new affordable rental homes and two home-ownership properties (Licence to Occupy) with the whānau obtaining Kāinga Whenua loans.

As part of its project feasibility the Incorporation determined the whānau of greatest need for whom the rental housing will be supplied, and the two whānau for the two owner-occupied homes (with licence to occupy) – with capacity to borrow. The Incorporation had been through a thorough process of selecting the building firm and selected A1 Homes for the vertical build. This achieved an economy of scale because A1 Homes had completed the eight home build for the Aorangi Māori Trust Board papakāinga.

Case Study continued...

A1 Homes submitted a competitive fixed price per 3-bedroom home fully specified. Full costings were included for the house-related infrastructure, connection and incidental costs (including driveway, electricity/ telecommunication, solar electricity and external plumbing, project management, valuation/Māori Land Court, consents and reasonable contingency).

Having gone through the Project Viability Assessment Tool (PVAT) in some detail, the total construction costs for the three rental homes were reasonable and represented good value for money. A small but sufficient contingency sum was included.

The Incorporation's contribution was through a loan finance. The Incorporation made a cash contribution towards the infrastructure and sought further financial assistance through the Māori Housing Network.

The Incorporation fully scoped and priced the necessary and complementary infrastructure works (with confirmed prices on file). This included general and preliminary costs (such as insurances, permits, and traffic management), bespoke wastewater, water and stormwater systems, electricity and telecommunication connections from the mains to the building site boundary and earthworks/roading.

Above: A view of the Waimarāma 3A1C2 papakāinga and Motu-ā-Kura in the background, Waimarāma 2017. Photo by Josie McClutchie.

Step 4. Due diligence

Haere ki ō-te-rangi-pā-karu ki te kai pua mānuka.
"Go to ō-te-rangi-pā-karu (your ears that don't hear) and eat manuka seeds (seeds of trouble)".

If you don't listen to good advice you will have troubles.

Up to 2 – 3 months mahi

The fourth step is 'due diligence'. This step will require an iterative process and will involve a number of hui and perhaps workshops with the Māori Housing Network. As you are likely to be seeking financial support for building and/or related infrastructure costs, expect the assessment process to be thorough and include an element of negotiation. Note different papakāinga housing developments require different levels of funding assistance. For example, a papakāinga that involves whānau building their own homes (under a Licence to Occupy) may only require some infrastructure support, or for a papakāinga that involves rental homes, may require a capital grant. For all proposals, the Māori Housing Network expects an element of co-contribution to progress to the next step in the process. The basis for financial assistance focuses on what is needed to make the project viable, not a set percentage or amount.

Checklist

Before progressing to the next step in the papakāinga housing development, you should check:

- If you have prepared a comprehensive business case and project plan.
- If you have completed the appropriate Project Viability and Assessment Tool[1] (cost modelling plus long term operational modelling).
- You have compiled all of the supporting documentation including Kāinga Whenua loan pre-approval, resource and building consents (or ready to lodge), detailed cost estimates and quotes,procurement plans (what builders, what suppliers), and project management details.
- You have acquired the necessary consents.
- You have finalised your proposal for funding assistance.

Tips and advice

- The detailed discussion with the Māori Housing Network will be 'line by line' in the Project Viability Assessment Tool (PVAT). To help get the most out of these discussions please have as much detail on hand as possible - costings, assumptions, bank approvals, council consents etc.
- It can be helpful to have the building contractor, project management and possibly your accountant available for these discussions.
- Be prepared for constructive discussion and the possible need to compromise.

Case Study

Ngā Hau e Whā National Marae papakāinga

(Rata Foundation) made assessment of finances and project viability complex.

Project Name	Ngā Hau e Whā National Marae papakāinga
Year completed	Under construction as at July 2017
Rohe/Location	Christchurch, Te Waipounamu
Ownership structure	Affordable social housing, homes
Scope	Six home papakāinga build as part of a 17 home papakāinga
Lead Architect/ Designer	Right Hire Construction (Principal Contractor)
Construction Project Manager	Arana Talbot (Marae) and Craig Hemopo (Right Hire Construction)

This case study highlights the importance of the Project Viability Assessment Tool (PVAT) as the basis for 'due diligence' of the papakāinga project viability. Given the timeframe and complex funding arrangements it was necessary to reassess long term cash flows and the financial sustainability of the housing.

It was proposed to the Ngā Hau e Whā National Marae Trustees that funding be sought to provide papakāinga housing on the Marae reservation at a planning meeting held in 2009. Funding was secured through the Canterbury Community Trust and Housing New Zealand but then there were difficulties obtaining permission to construct housing on the land. For example, it took four years to obtain consent from the Māori Land Court to allow housing to be built on the site. Issues with the Marae Trust Deed and the original gazetted notice meant that a number of special and public meetings were required to change these documents to satisfy the Māori Land Court. The Canterbury Earthquakes also caused further delays to the housing development.

In 2015, the Māori Land Court approval was given and the Trustees and rōpū commenced developing plans and gaining consents. A total of six 3-bedroom homes as part of a 17 home papakāinga are to be built on the marae reservation. Provision was made in the Funding Agreement with Te Puni Kōkiri for the rōpū to apply expected future cash surpluses towards additional future housing.

The whānau and individuals who will live in these homes will be given the wrap around support and help they need to empower themselves to move in a more positive direction. The housing will not only complement the existing services being delivered by the marae, but will also benefit the wider community by providing much needed housing relief.

Top right: A view of Ngā Maata Waka o Ngā Hau e Whā National Marae, Christchurch, 2017. Photo by Sampson Karst.

Bottom right: Looking over plans for the community housing at Ngā Hau e Whā National Marae, Christchurch. 2017. Photo by Sampson Karst.


AORUKI

Whānau papakāinga housing development takes place in three stages

Stage 2

STEP 5

Step 5. Building/project management

Kaua e rangiruatia te hāpai o te hoe, e kore tō tātou waka e ū ki uta.

"Do not lift your paddle out of unison or our canoe will never reach the shore".

The contracting and building process requires a high level of coordination across multiple disciplines and sectors.

Up to 12 – 18 months mahi

The fifth step is 'building/project management'. With Step 3. and Step 4. now complete you would have secured funding through loan finance and/or the Māori Housing Network and any required loan finance. You would also have resource and building consent approval. You will now be ready to enter into build contracts.

This step requires that we have agreed milestone dates and drawdown schedules with you – and we usually include some advance for working capital, with a final drawdown after the houses have council Code of Compliance signoff.

Checklist

Before progressing to the next step in your papakāinga housing development, you should check:

- If you have considered engaging an external Project Manager to oversee the project.
- You have compiled the necessary construction documentation and have building contracts been checked by your legal advisor.
- You have completed a tender process or selected the Builder and Civil Contractors.
- If a Code of Compliance certificate has been issued by Council.

Tips and advice

- Be prepared for unexpected delays – you should have in place both dollar and time contingencies as even the most planned project can come across unexpected issues.
- Most rōpū settle for fixed price contracts to minimise uncertainties.
- Usually, and sometimes the Māori Housing Network may require, an external (of the rōpū) Project Manager to oversee this step of the project.

Case Study

Hurunui-o-Rangi Māori Reservation Trust papakāinga

Marae-led papakāinga development to provide affordable social housing.

Project Name	Hurunui-o-Rangi Māori Reservation Trust papakāinga
Year completed	Under construction as at July 2017 and due to be completed in April 2018
Rohe/Location	Carterton, Wairarapa
Ownership structure	Affordable social housing
Scope	Six home papakāinga build
Lead Architect/ Designer	A1 Homes
Construction Project Manager	Sheeran Associates

To support the (Hurunui-o-Rangi) Māori Reservation Trust to develop 6 social housing rentals for beneficiaries of the Hurunui-o-Rangi Marae, located 10km east of Carterton in the Wairarapa. The Trust is also in the process of rebuilding its marae.

It is the aspiration of the Trustees to create an intentional community hub whereby whānau will live on their ancestral land in affordable healthy homes and support their marae e.g. Kaikōrero, Kaikaranga, Ringawera, Kaitiaki etc.

The Trust successfully completed the feasibility stage of their project with the support of Māori Housing Network funding and is now embarking the construction stage. The construction stage will be completed over 2 financial years.

A whānau coordinator was involved in the project to ensure knowledge of the process and the overall papakāinga remains within the Trust and whānau.

The concept design provides for a safe secure environment enabling whānau to live together while maintaining the option for individual privacy. The homes are standard A1 Homes plans consisting of two 2 bedroom (104m2) home and four 3 bedroom (approx. 141-148m2) homes. All houses are one-bathroom houses with internal garages.

As the co-contribution is a Kāinga Whenua Loan the houses must be removable, but in this case the Trust obtained Housing New Zealand consent to only have one or two houses removable given the minimal nature of the loan.

The assessment of this proposal using the Project Viability Assessment Tool (PVAT) forecasted 25 years and demonstrated the ongoing viability of social and affordable housing within the project.

The Trustees have engaged Sheeran Associates Ltd to manage the project development stage with support from the different suppliers. The project was expected to be completed within a 40-week period from funding approval but due to weather has been delayed (this is not an unusual situation which is why we encourage cost and timeframe contingencies).

Whānau papakāinga housing development takes place in three stages

Stage 3 | STEP 6

Step 6. Housing operations

He kura kāinga e hokia, he kura tangata e kore e hokia.
"A treasured home will endure, not so a treasured person".

If you look after your new home it will endure for the benefit of future generations.

Congratulations! Your homes will be a base for future generations to come.

This is the sixth and final step 'housing operations'. This is the culmination of 2-3 years of careful planning and consultation to set you up for the next 25 years of housing management.

With Step 1. to Step 4. you will have selected and prepared the papakāinga residents, resolved your tenancy management and body corporate policies, have maintenance plans and processes in place for your papakāinga and you may even have achieved registration as a Community Housing Provider. Many rōpū underestimate the complexities of managing a papakāinga. We want to make sure that you have the capability and financial resources to maintain the houses, repay any loans, plan for future structural repairs and collect sufficient revenue which is why we spend a lot of time analysing your PVAT financial projections. But housing whānau is the most satisfying part of completing the steps of the papakāinga housing development process.

Top left: Waimārama 3A1C2 papakāinga residents, Waimārama, 2017. Photo by Josie McClutchie.

Bottom left and right: Construction at the Waimārama 3A1C2 papakāinga development.

Tips and advice

- Consider registering as a Community Housing Provider and possible access to Income Related Rent Subsidies, or possible partnerships for tenancy management.
- Be really clear about your role as a landlord – sometimes it is hard to be a landlord to your whānau but your papakāinga requires rent to be paid and houses to be looked after.
- See the papakāinga as more than just whare – it's a supportive community and links to whānau support and Whānau Ora could be part of your tikanga.
- Put in place Tenancy agreements between the Trust and Occupant(s).
- Put in place License to Occupy agreements between Trust and Occupant (for owned houses).

Case Study

Ngāti Hinewera Ahu Whenua Trust papakāinga

Management and maintenance of a papakāinga development to provide affordable social housing. The papakāinga has been occupied for almost two years.

Project Name	Ngāti Hinewera Ahu Whenua Trust papakāinga
Year completed	Construction started in December 2014 and was completed in June 2015
Rohe/Location	Waiohiki, Hawkes Bay
Ownership structure	Affordable social housing
Scope	The building of an eight home papakāinga as a part of stage one, and an additional two homes to the papakāinga as a part of stage two
Lead Architect/ Designer	Stonewood Homes
Construction Project Manager	Stimpson & Co

Ngāti Hinewera opened its first papakāinga in Waiohiki in 2015. Eight homes, with a variety of two, three and four bedroom homes were built on the 1.45 hectare site. Two further homes are currently near completion.

The Waiohiki Charitable Trust, a registered Community Housing Provider, operates as a Property Manager for the papakāinga and provides timely and appropriate interventions to ensure whānau are well supported in their tenancies. For some tenants, the Trust receives an Income Related Rent Subsidy from the Ministry for Social Development.

The papakāinga site is in General Title but owned by the Trust. It has been a longstanding objective to convert the site, adjacent to the Marae, into a sustainable papakāinga for the whānau. Being General Title (although Māori customary land being adjacent to the Marae) has aided access to financing the papakāinga.

The Trust secured funding assistance for the papakāinga by a 50 percent Putea Māori capital grant (from the previous Social Housing Unit) and a small Kāinga Whenua Infrastructure Grant with the Trust contributing cash and borrowings towards the costs of the papakāinga.

Important to the assessment of the finances was the capacity of the Trust to meet all future costs (maintenance, insurance, provision for structural repairs, tenancy management and operating costs, debt servicing) from the rental (and in the case of the two owner-occupied houses, body corporate fees).

The Māori Housing Network assumed responsibility for funding the completion of the project for the additional two houses as a part of stage two. The PVAT noted that with conservative assumptions the completed papakāinga would be cash-flow positive. Rent charged will be affordable to the tenants – as a registered Community Housing Provider Waiohiki Charitable Trust has access to Income Related Rent Subsidies for some tenants – for other tenants the policies ensure an affordable social rent. With its annual cash surpluses, the Trust is repaying its bank loans more quickly and will then be in a strong position to contemplate building more homes for whānau in need.

Top right: Drone view of the Waiohiki papakāinga, 2015. Photo credit: Te Matapihi He Tirohanga mō te Iwi Trust.

Bottom right: An aerial view of the completed Ngāti Hinewera Ahu Whenua Trust papakāinga, Waiohiki, 2015. Photo credit: Te Matapihi He Tirohanga mō te Iwi Trust.

“The Trust wanted to ensure that Māori principles such as whanaungatanga, manaakitanga and arohatanga were strong ingredients in the papakāinga when it came time to look at design concepts.”

Steven Heperi (Ngāti Kahungunu)
Chairman, Aorangi Māori Trust Board

Right: Carved pou stands stall at the Aorangi Māori Trust Board completed papakāinga, Waipatu, 2016. Photo by Josie McClutchie.

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December/Hakihea 2017

Te Puni Kōkiri
ISBN: 0-478-26097-0
December/Hakihea 2017

Whakataukī Source

Source for Whakataukī, Grove, N. & H. M. Mead, Ngā Pēpeha a ngā Tīpuna. Reprint 2013.

Te Puni Kōkiri supports whānau, hapū and iwi Māori to achieve their housing aspirations.

For papakāinga housing ideas, the first step is to contact your Te Puni Kōkiri regional office and talk to one of our advisors.

Te Puni Kōkiri

REALISING MĀORI POTENTIAL

Te Puni Kōkiri, Te Puni Kōkiri House, 143 Lambton Quay, PO Box 3943, Wellington, New Zealand

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THE HUTT

TE PAPAKĀINGA O TARANAKI WHĀNUI

MATAI

MAKORO

WELLINGTON
the Capital

TE WHANGANUI A TARA

LOADS OF
GREAT WAO
WITH BIG RIMU
RATA MIRO ETC

ARA TO THE TAHUROA
a traditional pathway
TE ATIAWA

WAINUIOMATA BEACH
(KAIMOANA HQ)

OUR PLACE

UPOKO-O-TE IKA-A
MAUI, TE

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui						PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust				DATE Novembe 2016		DWG #
					SCALE @ A3		
DWG	Concept Drawings				DRAWN JAM		
					CHKD		REVISION

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PO Box 9933, Wellington 6011, NZ W www.facebook.com/johnmillsarchitects W www.johnmillsarchitects.co.nz

HEY TANE! TARI TARI

KEEP UP PĀPĀ ONLY 2 HOURS TO GO!

BIKE PARK - A GREAT RESOURCE FOR TAMARIKI (& THEIR WHĀNAU)

SOME SEPARATION FROM EXISTING PUBLIC TRANSPORT & SHOPPING/COMMUNITY

THE ROAD OUT! (WE KNOW IT WELL)

BLACK STREAM

TE PAPAKĀINGA O TARANAKI WHĀNUI

HIGH SCHOOL

WAINUIOMATA

MAJOR - ROADS & CONTEXT

EXCELLENT SPORTS CLUBS & GROUNDS

A GREAT POOL HERE

OH OH

OLD & NEW GROWTH FOREST; FRAMES THE VALLEY = MORE BIRDLIFE & LOVELY VIEWS

KAIMOANA THIS WAY

WALKS IN THE BUSH ALL OVER THE SHOW

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016	DWG #	
					SCALE @ A3		
DWG	Concept Drawings				DRAWN: JAM		
					CHKD:	REVISION	

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THINGS TO KEEP IN MIND...

ENSURE MAXIMUM SUN + VIEWS for ALL

- HOW TO DEAL WITH WATER / DRAINAGE
- WEAVE TARANAKI TANGA INTO LANDSCAPE, WENUA + WHARE.
- CARS / PEOPLE / SAFETY WITHIN THE SITE
- PLANTING THAT PROVIDES SHELTER - FOOD - SUPPORTS NATIVE BIRDS ETC
- WAYFINDING - SIGNAGE - RULES!
- PLANNING GROWTH ORGANICALLY
- TRANSPORT - CONNECTION TO WAINUIOMATA - HUTT VALLEY & WELLINGTON

COMMUNITY GARDEN?

COMMUNITY VS "PRIVATE" LAND & MAINTENANCE OF BOTH.

SECURITY... PASSIVE.

RUBBISH / RECYCLING / COMPOSTING?

COMMUNICATION WITH THE "NEIGHBOURS" sharing our dreams together

CAN WE LEARN FROM OTHER PAPAKĀINGA?

WAIRUATANGA spirituality.

EVOKE THE MEMORY OF PREVIOUS ARA USED SEASONALLY.

- ENHANCING COMMON AIMS & EXISTING & FUTURE OCCUPANTS OF TE PAPAKĀINGA O TARANAKI WHĀNUI

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui						PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust					DATE: November 2015	DWG #
DWG	Concept Drawings *challenges!*					SCALE @ A2	
						DRAWN JAM	
						CHKD	REVISION

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STAGE III & BEYOND

SEPARATE ROAD FOR KŌHANGA REO & OTHER "HUB" USERS

"GATEWAY" TO ENTRIES TO FROMES 'TE PAPAKĀINGA O TARANAKI WHĀNUI"

CURVED ARA WHERE POSSIBLE

GOOD EXISTING TREES, WILL BE DEVELOPED...

ROOM FOR KŌHANGA-REO TO DEVELOP

QUALITY PARKING PLENTY OF ROOM

PREDOMINANT WIND.

THIS AREA: VERY NICE SPOT FOR COURTYARD/ MEDIUM DENSITY COMMUNITY/HOUSING. FUTURE COMBINATION

SEPARATE ENTRANCE for HOMES.

SLOW ZONE for CARS. PEDESTRIAN PRIORITY

SLOPING BANKS: TO GIVE A VARIETY OF FLOOR LEVELS for HOMES - & SOME VIEWS.

FUTURE "GARDENS" WET AREA for HUAKEKE

POTENTIAL DEVELOPMENT Great views from here

LATE MORNING SUN - SHADE FROM HILLS

OPTIONS for SHORT/LONG TERM IN EXISTING BUILDINGS?

EXCELLENT, PRIVATE SHELTERED LOCALE FOR HOMES (later)

DEVELOP PARKING + PATHS

BROAD CONCEPTS...

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust					DATE	November 2012
DWG	Concept Drawings - CONTEXT.					DRAWN	AM

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No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016	DWG #	
					SCALE @ A3		
DWG	Concept Drawings				DRAWN JAM		
					CHKD	REVISION	

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SCULPTURAL MARKER

PEDESTRIAN ORIENTED

SOFT CURVES TO LANES, A MORE NATURAL ARA

I HOPE THERE IS KINA!

KOWHAI LANE

NAME TO EACH

ONE WAY - 10 K please.

EXISTING ROAD TO SOUTH OF SITE

CAN YOU GO TO AUNTIES' AND HELP WITH THE BIRTHDAY TONIGHT, IT'S IN THE HALL

LANEWAY ENTRANCE

No	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui				PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust			DATE November 2016	
				SCALE @ A3	
DWG	Concept Drawings			DRAWN JAM	
				CHKD	REVISION

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CLUSTERS OF ENDEMIC NATIVES
- KAKAKA - TOITOI - TAUPATA...

SOME SEATING.
AND SCREENINGS

POCKET PARKS (EACH ONE - UNIQUE)
@ INTERSECTIONS FOR WHANAU TO
CATCH UP, SIT IN THE SUN
WATCH THE BIRDS, OR HAVE A GOSSIP.

EACH WHARE HAS A
UNIQUE HIKUAUA.

LANEWAYS = 10 K/HR
PEDESTRIAN FOCUSED
(ONE WAY)

SWALES &
STORMWATER

EAST-WEST LINK WAY
FOR BIKING,
WALKING

CARS MUST
SLOW FOR
BERM

HOMES LOOK OUT OVER
COMMON SPACES.

SOME BAYS FOR
VISITOR PARKING

ARA JUNCTION

pathways meet = a place to linger.

No	DATE	ISSUE	REV	DATE	ISSUE	BY
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust			DATE: November 2016		DWG #
				SCALE @ A3		
DWG	Concept Drawings ARA			DRAWN: JAM		
				CHKD:		REVISION

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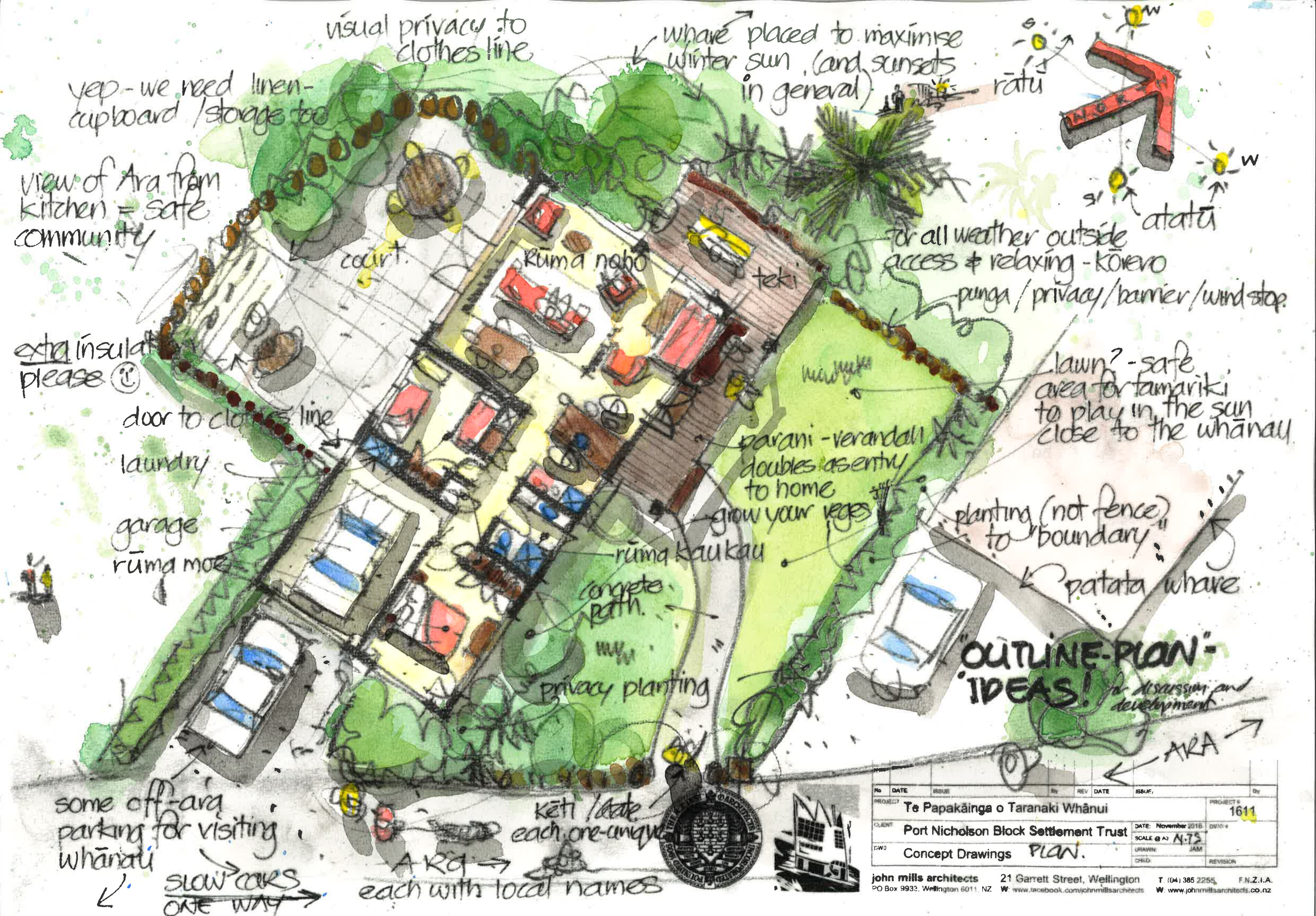
visual privacy to clothes line
whare placed to maximise winter sun (and sunsets in general)
rātū
yep - we need linen-cupboard / storage too
view of Ara from kitchen = safe community
atatū
court
Ruma noho
teki
for all weather outside access & relaxing - kōrero
punga / privacy / barrier / wind stop
extra insulation please ☺
lawn? - safe area for tamariki to play in the sun close to the whānau
door to clothes line
laundry
parani - verandah doubles as entry to home
garage
grow your veges
planting (not fence) to "boundary"
rūma moe
rūma kaukau
patata whare
concrete path.
privacy planting
"OUTLINE-PLAN" IDEAS! for discussion and development
ARA
some off-ara parking for visiting whānau
kēti / gate each one-unique
ARA
SLOW CARS ONE WAY
each with local names
N.T.S
PLAN.

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT: Te Papakāinga o Taranaki Whānui — PROJECT # 1611

CLIENT: Port Nicholson Block Settlement Trust — DATE: November 2016 — DWG #

DWG: Concept Drawings PLAN. — SCALE @ A3: N.T.S — DRAWN: JAM — CHK'D — REVISION

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A GOOD VIEW FROM the KITCHEN OF "LAWN". - ENTRY & PATHWAY BEYOND = CONNECTIONS

WHARE ORIENTED TO SUN

EACH HOME HAS SOME UNIQUE PATTERNS / COLOURS

LOW MAINTENANCE ROOF / CLADDING

PARANI - VERANDAH - ENTRANCE

SOME DECKING; BARE FOOT ENJOYING THE AFTERNOON SUN

VEGE PLANTERS

FAMILY LAWN

PLENTY OF PLACES FOR BUMP INTO YOU TIME

SWALES & NOT DRAINS

GARAGE

KETI / GATE - TE REO NAMES, NUMBERS.

TORU

ACTIVE PLANTS.

SOFT NATURAL "BORDER" BETWEEN HOMES / SECTIONS

"OK STEVEN ADAMS TIME FOR KAI"

SHARED PATH W/ PEDESTRIAN PRIORITY - 10 - 15 km/h. ONE WAY

GUEST PARKING ?

A TYPICAL WHARE.
concept perspective.

NO.	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui						PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust					DATE: November 2016 SCALE @ A3	DWG #
DWG	Concept Drawings					DRAWN: JAM CHKD:	REVISION

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ALL WHERE ORIENTED to max WINTER SUN. TO WARM AND LIGHT THE HOME.

LED LOW ENERGY LIGHTING

2700 STUD IDEALLY

ROBUST LINING TO WALLS (13mm!) AND OVER-SPEC' INSULATION

CATCH THIS

still used as a seat?

OUT TO COURT & PRIVATE ZONE & SUNSET SPACE

PARANI - VERANDAH = ENTRY + CONNECTION TO LAWN / GARDEN / STREET

RŪMA NOHO
family living room

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT # 1611	
CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016	DWG #	
					SCALE @ A3		
DWG	Concept Drawings				DRAWN JAM		
					CHKD	REVISION:	

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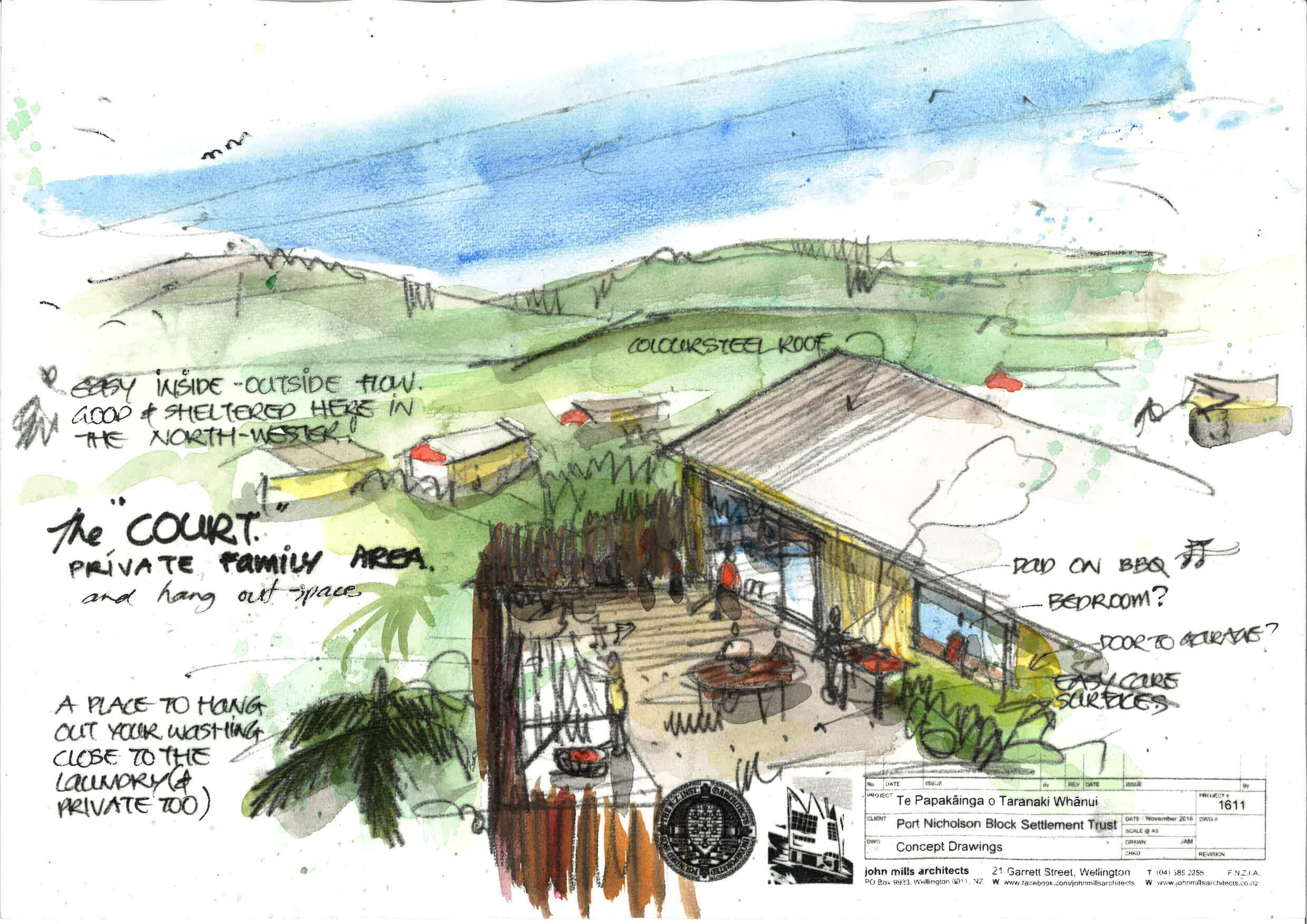

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PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust				DATE November 2016	DWG #	
					SCALE @ A3		
DWG	Concept Drawings				DRAWN JAM		
					CHKD	REVISION	

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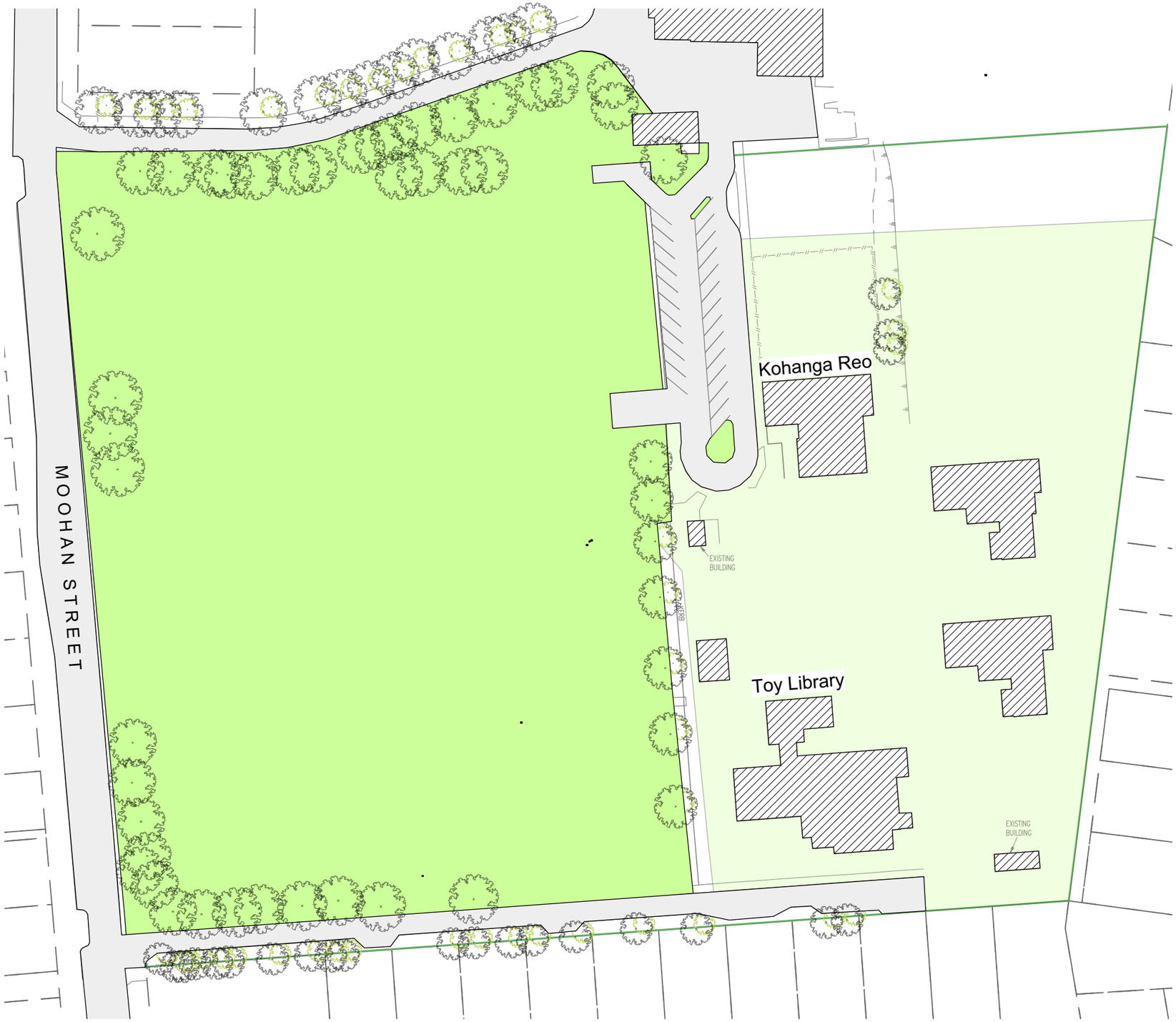

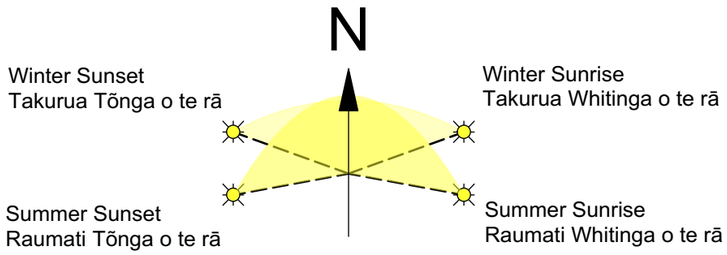

Existing Plan

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakāinga o Taranaki Whānui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-12
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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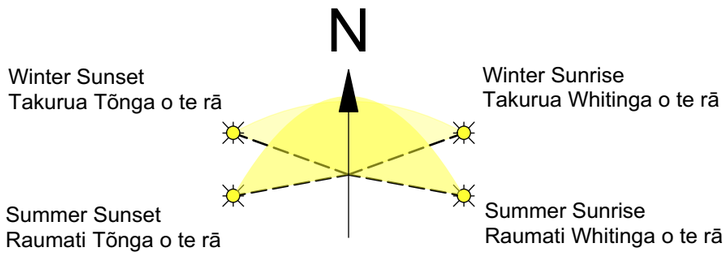

Overall Masterplan

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-13
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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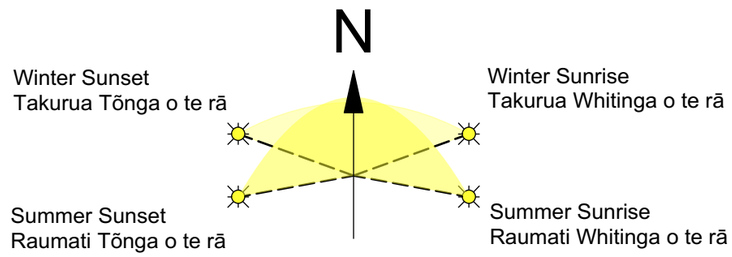

Waharoa

3 lanes each named after their own rakau / kaitiaki. Rakau that tell a story, are significant to Taranaki Whanui or are perhaps locally threatened / rare. Stand out while not growing too big.

Plant list: (Maori, common, *botanical*)

Kowhai, *Sophora sp.*
Manuka, *Leptospermum scoparium*
Horoeka, Lancewood, *Pseudopanax crassifolius*
Nikau, *Rhopalostylis sapida*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-14
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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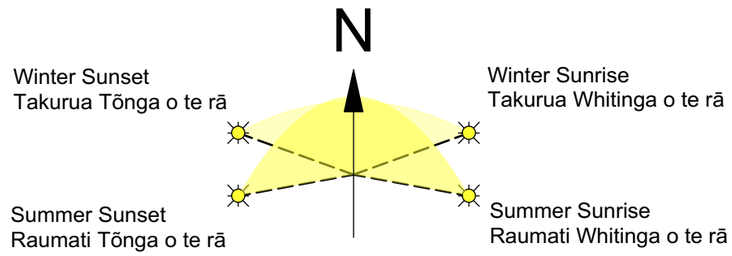

Kaumātua Housing

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-15
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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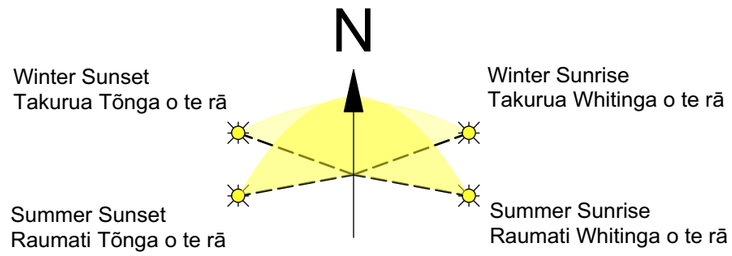

Kaumātua Housing
Decking

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-16
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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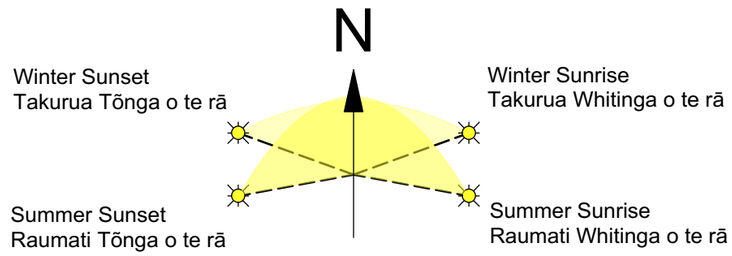

Kaumātua Housing
Communal Area

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-17
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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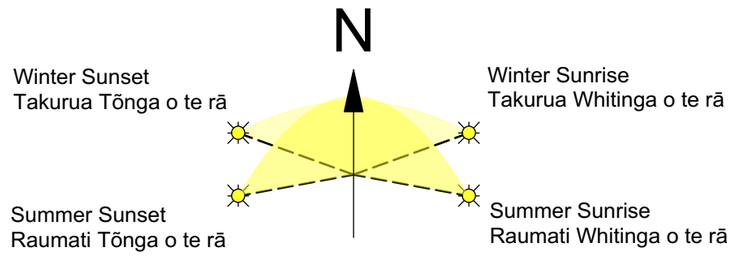

Kaumātua Housing
Parking

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG #
		SCALE @ A3 1000	20-18
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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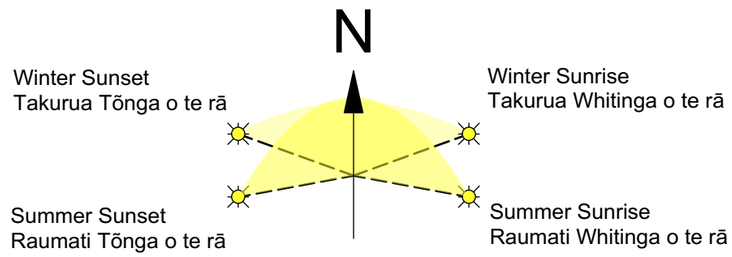

Family Housing

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-19
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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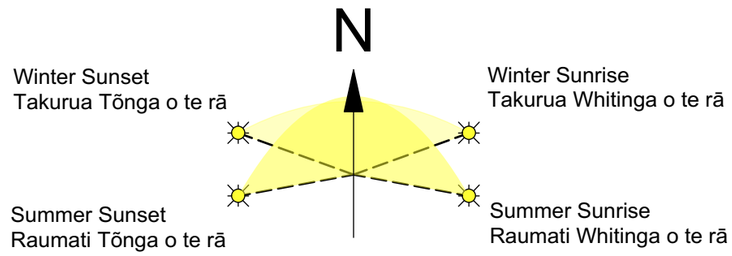

Family Housing

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG #
		SCALE @ A3 1000	20-20
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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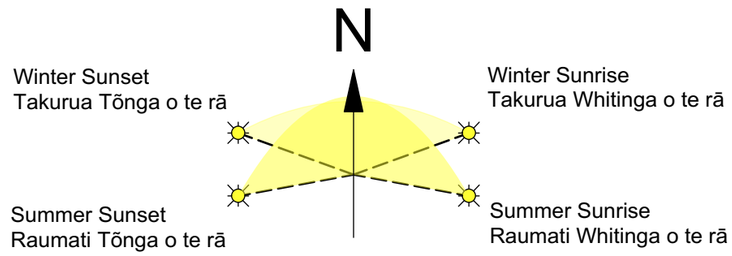

Family Housing
Decking

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-21
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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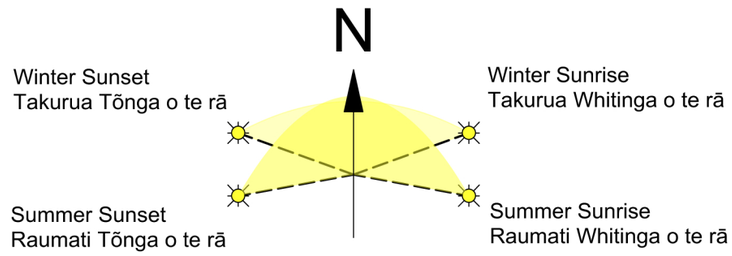

Family Housing Courtyards

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-22
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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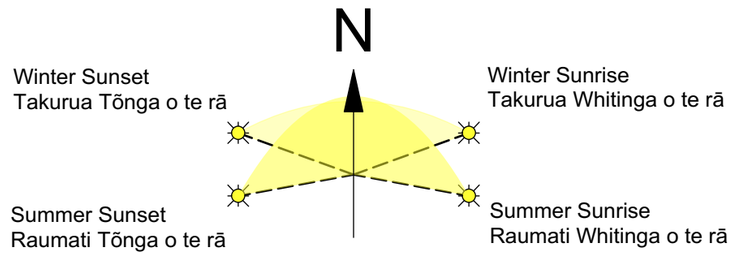

Family Housing Parking

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG #
		SCALE @ A3 1000	20-23
DWG	Master Planning Drawings	DRAWN: JAM	
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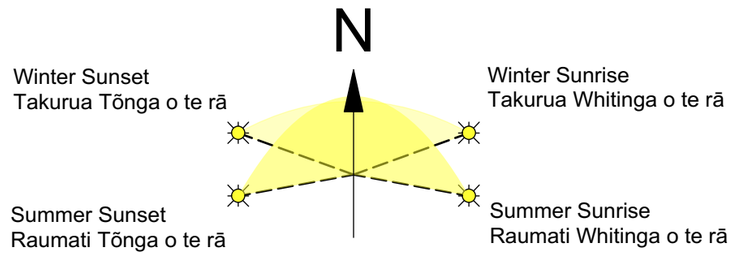

Entrances
Waharoa Pou

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-24
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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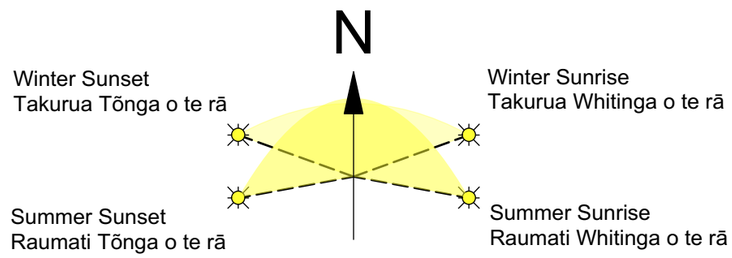

Future Family Housing

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-25
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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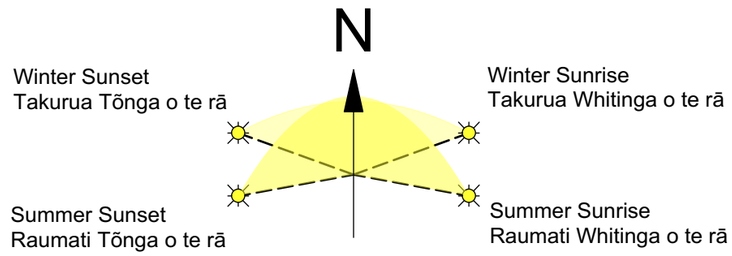

Pathways
Ara

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-26
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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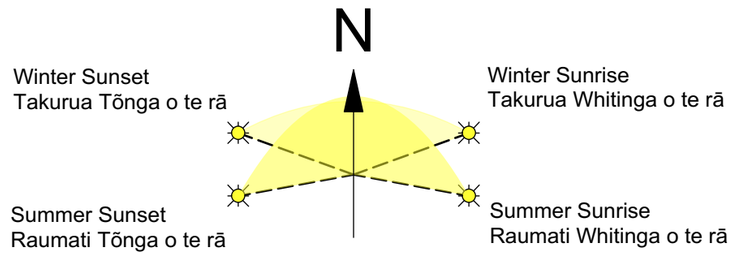

Central Space and Pocket Parks

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-27
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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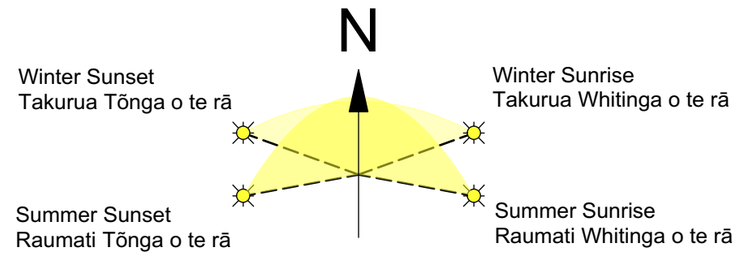

Community Areas

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-28
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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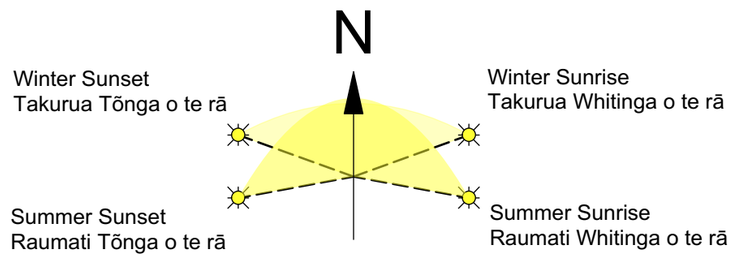

Planting Layer

Taupā

Rakau that form hedges for privacy and form a clear distinction of papakainga boundaries.

Plant list: (Maori, common, *botanical*)

Puka/nui, *Merta sinclarii*
Purple Akeake, *Dodonaea viscosa*
Broadleaf, *Grisilenia littoralis*
Mingimingi, *Cyathodes sp.*
Rangiora, Bushmans Toilet Paper, *Brachyglottis repanda*
Makomako, Wineberry, *Aristotelia serrata*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-29
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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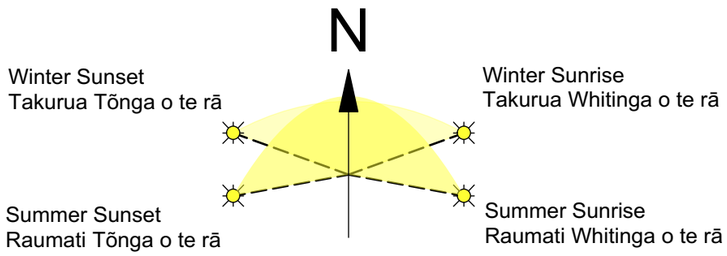

Planting Layer
Ārai

Rakau that provide visual and noise protection, visually appealing ie. flowering plants.

Plant list: (Maori, common, *botanical*)

Pukanui, *Merta sinclarii*
Koromiko, *Hebe sp.*
Puawhananga, *Clematis paniculata*
Kaihua, NZ Jasmine, *Parsonia heterophylla*
Kohia, NZ Passion Flower, *Passiflora tetrandra*
Ngutu Kaka, *Clianthus maximus*
Creeping Pohuehue, *Muehlenbeckia axillaris*
Mikoikoi, *libertia ixioides*
Turutu, Inkberry, *Diadelia nigra*
Korokio, *Corokia cotoneaster*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG #
		SCALE @ A3 1000	20-30
DWG	Master Planning Drawings	DRAWN: JAM	
		CHKD:	REVISION

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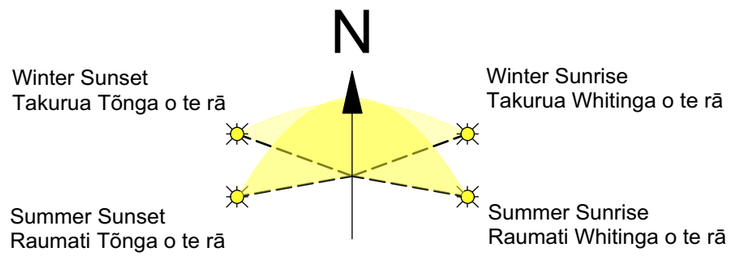

Planting Layer
Ara

Hardy, low, grasses

Rengarenga, NZ rock lily, *Arthopodium cirratum*
Piripiri, Bidibid, *Acaena sp.*
Purei, Niggerhead, *Carex tenuiculmis*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016	DWG # 20-31
		SCALE @ A3 1000	
DWG	Master Planning Drawings	DRAWN: JAM	
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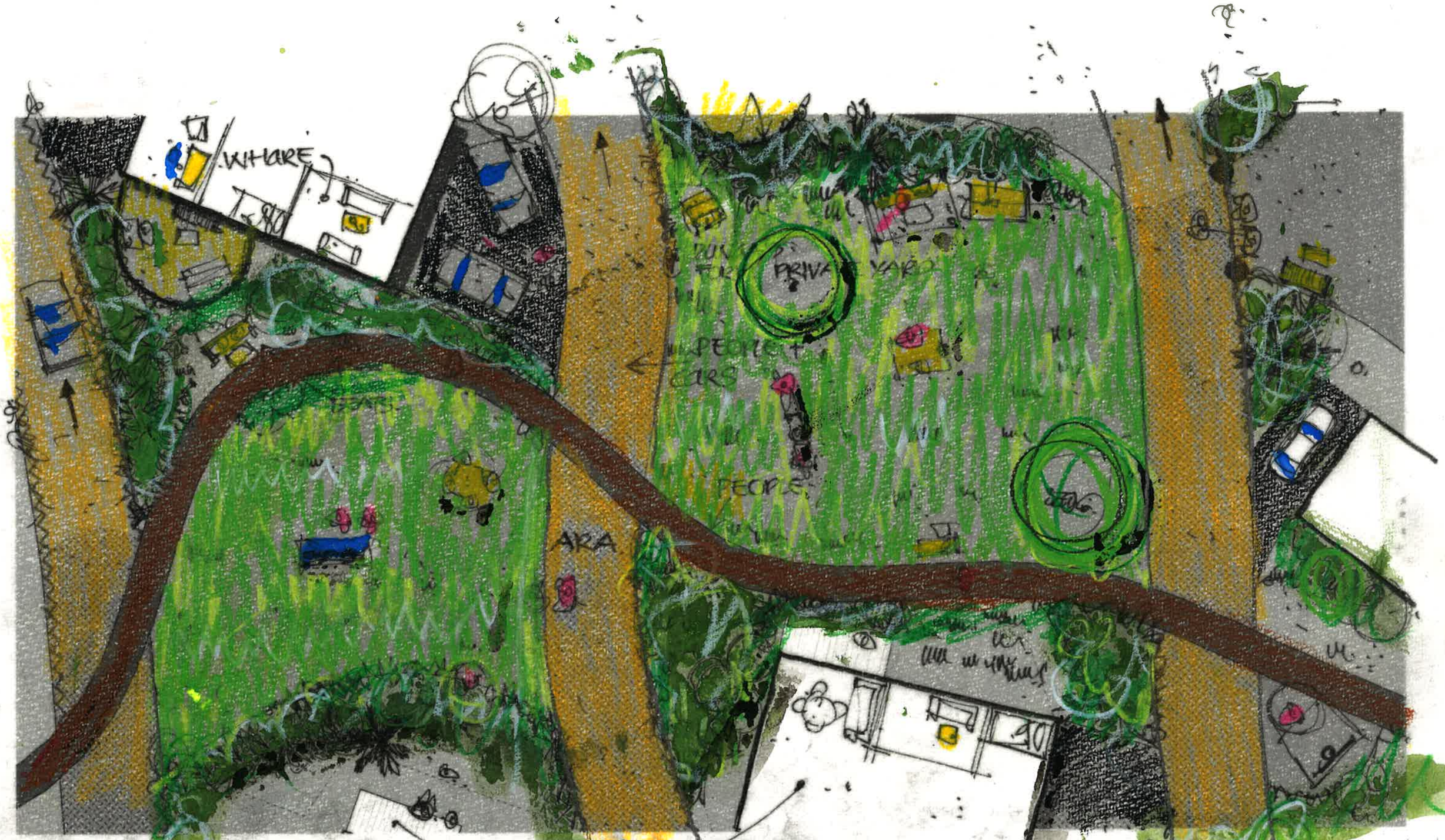

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PROJECT	Te Papakāinga o Taranaki Whānui			PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust		DATE: November 2016	DWG #	
			SCALE @ A2		
DWG	Master Planning Drawings		DRAWN: JAM		
			CHKD:	REVISION	

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PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1611
CLIENT	Port Nicholson Block Settlement Trust				DATE November 2016	DWG #	
DWG	Master Planning Drawings				SCALE @ A3		
					DRAWN JAM		
					CHKD	REVISION	

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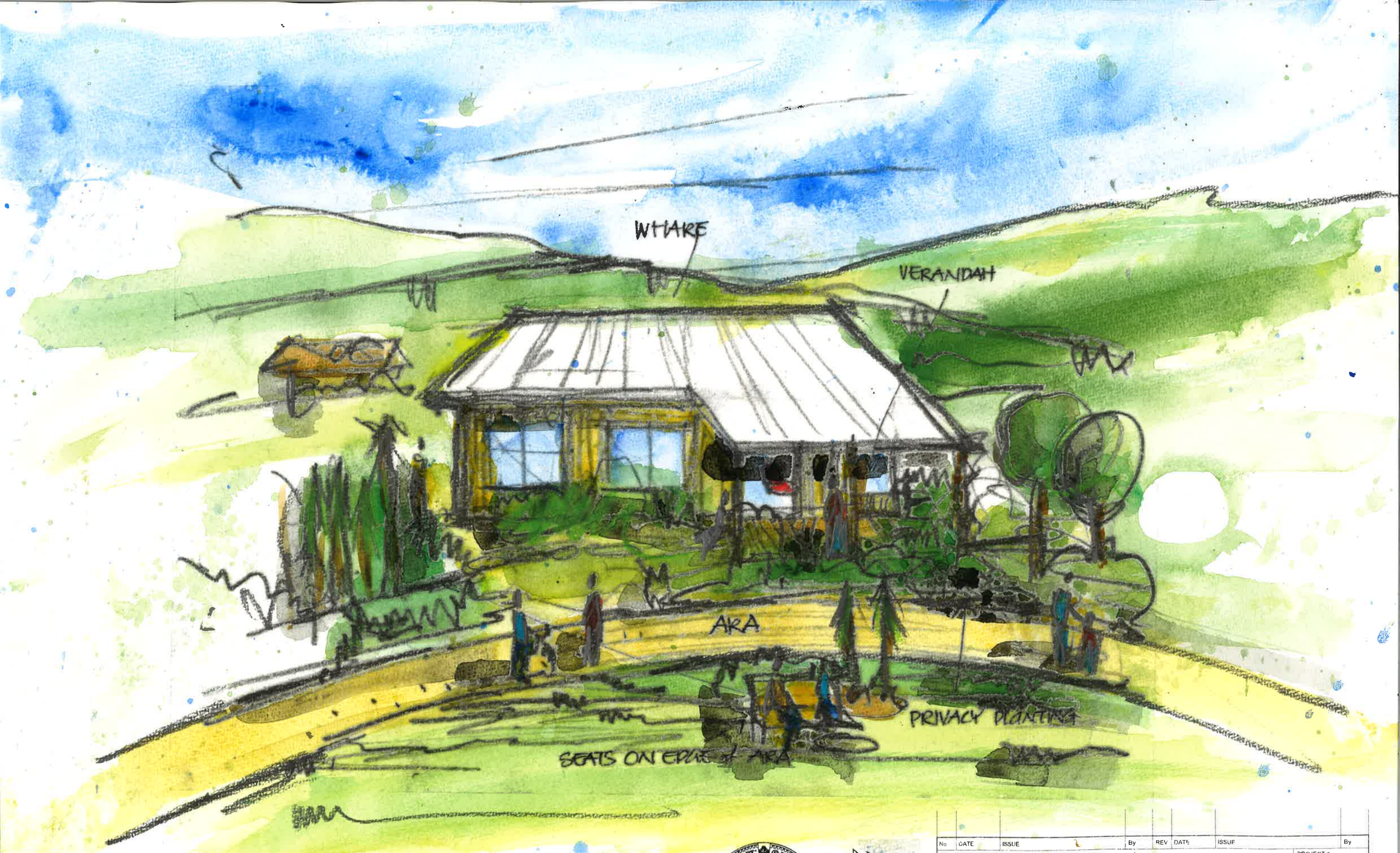

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CLIENT	Port Nicholson Block Settlement Trust				DATE November 2016	DWG #	
					SCALE @ A3		
DWG	Master Planning Drawings				DRAWN JAM		
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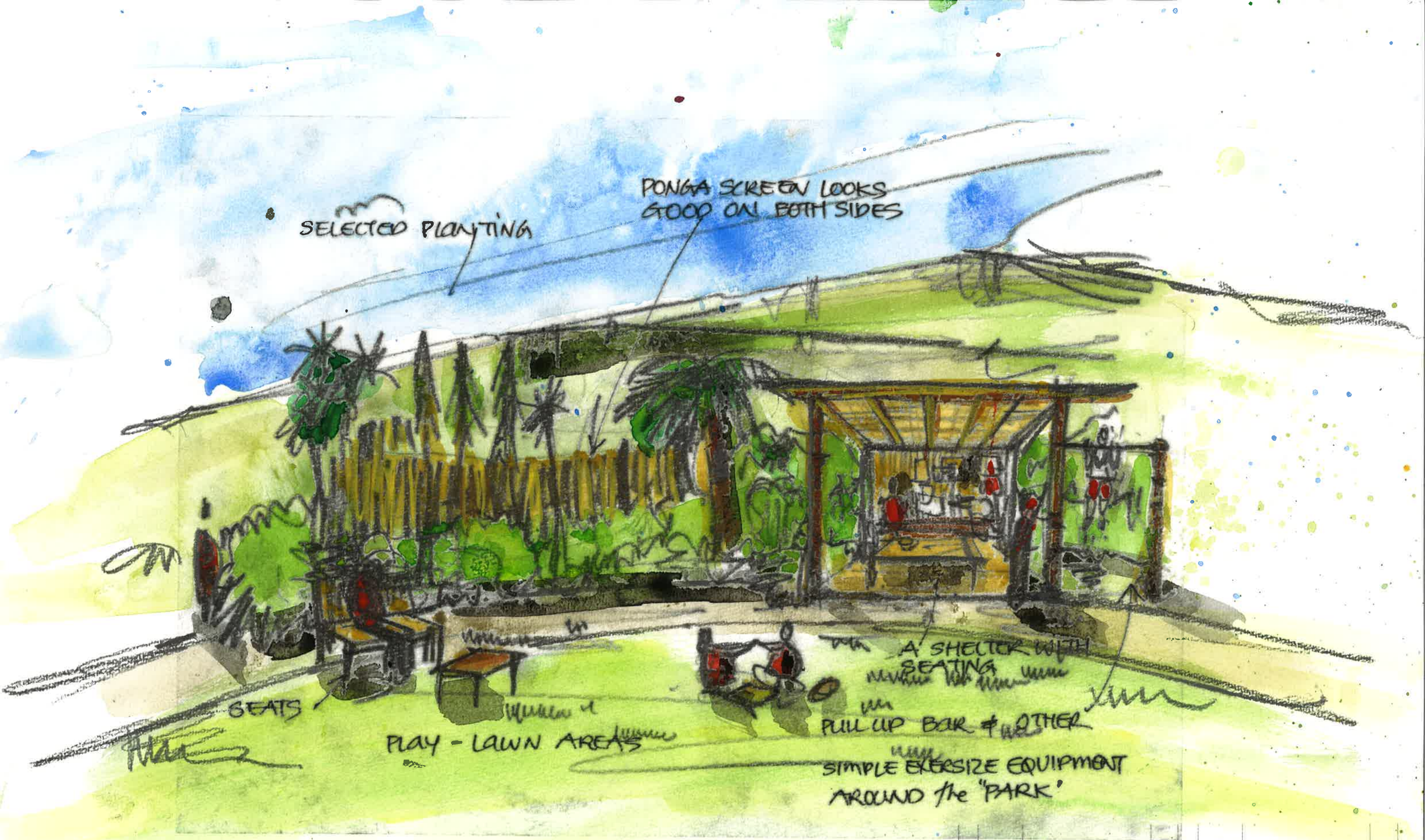

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CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016		DWG #
					SCALE @ A3		
DWG	Master Planning Drawings				DRAWN JAM		
					CHKD		REVISION

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WAHAROA

SLIDE HOUSE

GUEST PARKING

WAHAROA

ARA

LAWN

GUEST PARKS

SPEED BUMP

8

5

4

1

LANDSCAPING

VERANDAH

SHED

2

7

6

3

GARAGE/CARPORT

EXISTING BUILDING

RAISED VEGE GARDENS

PARKING

KAUMĀTUA WHARE

FNZIA

REV	DATE	ISSUE	BY
Te Kaeakāinga o Taranaki Whānui			PROJECT # 1611
Port Nicholson Block Settlement Trust		DATE: November 2016 SCALE @ A1	DWG #
DWG: Master Planning Drawings		DRAWN: JAM CHKD:	REVISION

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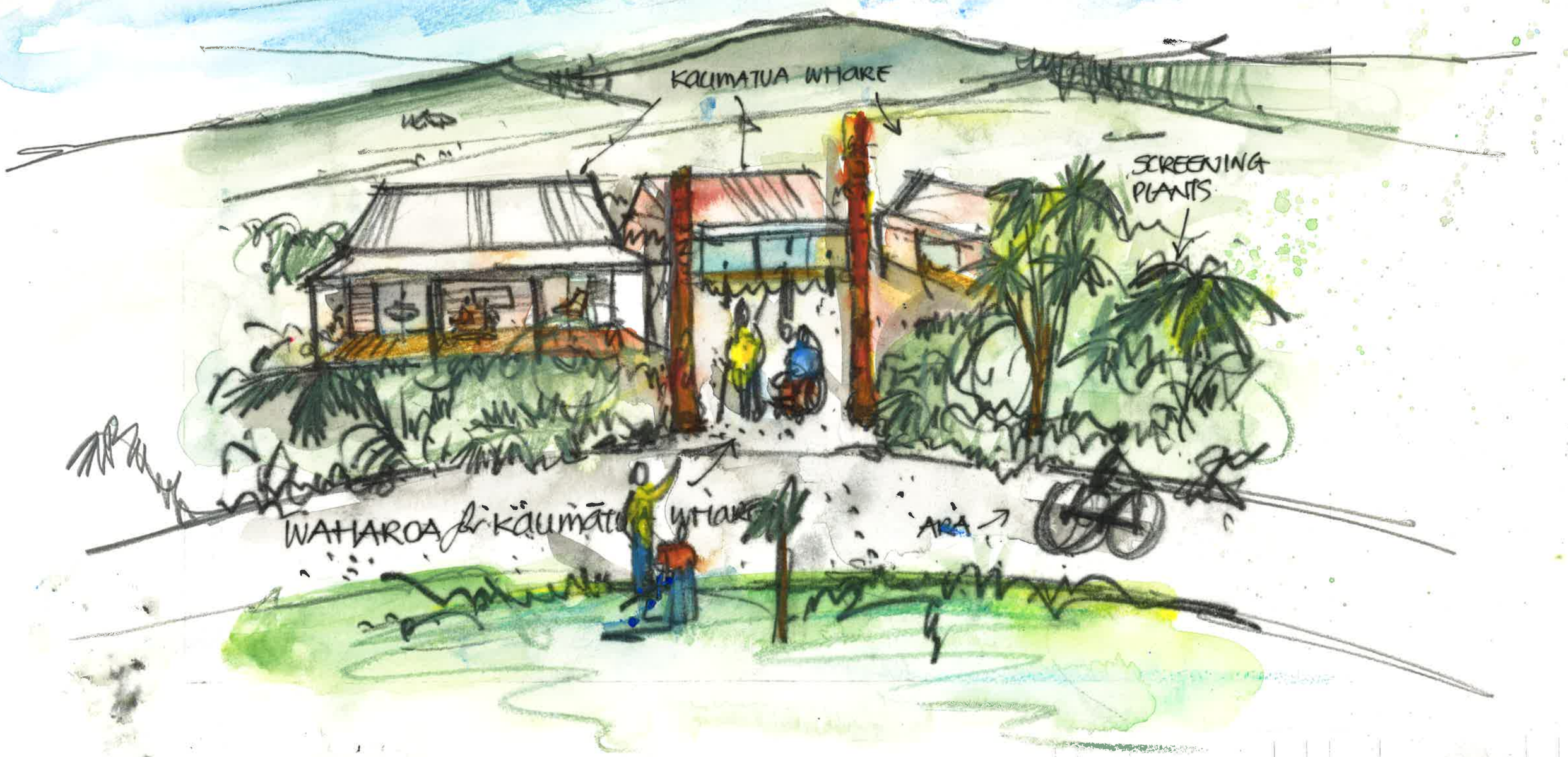

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PROJECT	Te Papakāinga o Taranaki Whānui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE November 2016	DWG #
		SCALE @ A3	
DWG	Master Planning Drawings	DRAWN AM	
		CHKD	REVISION

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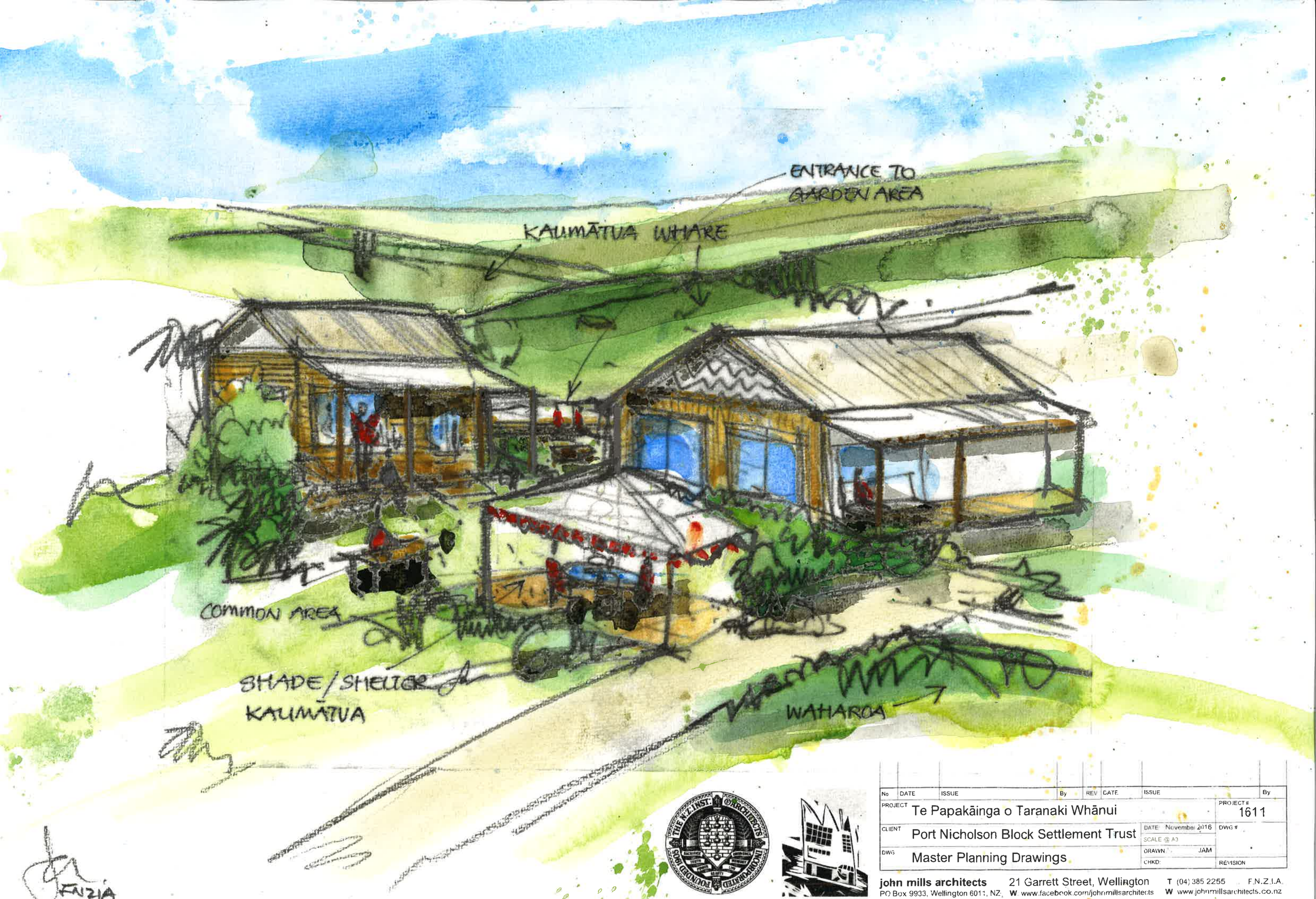

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CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016	DWG #	
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DWG	Master Planning Drawings				DRAWN: JAM		
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CLIENT	Port Nicholson Block Settlement Trust				DATE: November 2016	DWG #	
					SCALE @ A3		
DWG	Master Planning Drawings				DRAWN JAM		
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PA-HARAKEKE

KOHANGA - REO

HARD COURT.

steps/gate

PLAY - AREA

REPAIR FENCES

GATE

TE KUA

PARKING.

NGAHERE

PUKA WAIRO

WHARE-NUI

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT: Te Papakāinga o Taranaki Whānui — PROJECT #: 1611

CLIENT: Port Nicholson Block Settlement Trust — DATE: November 2016 — DWG #

SCALE @ A2

DWG: Master Planning Drawings — DRAWN: — CHKD: — REVISION

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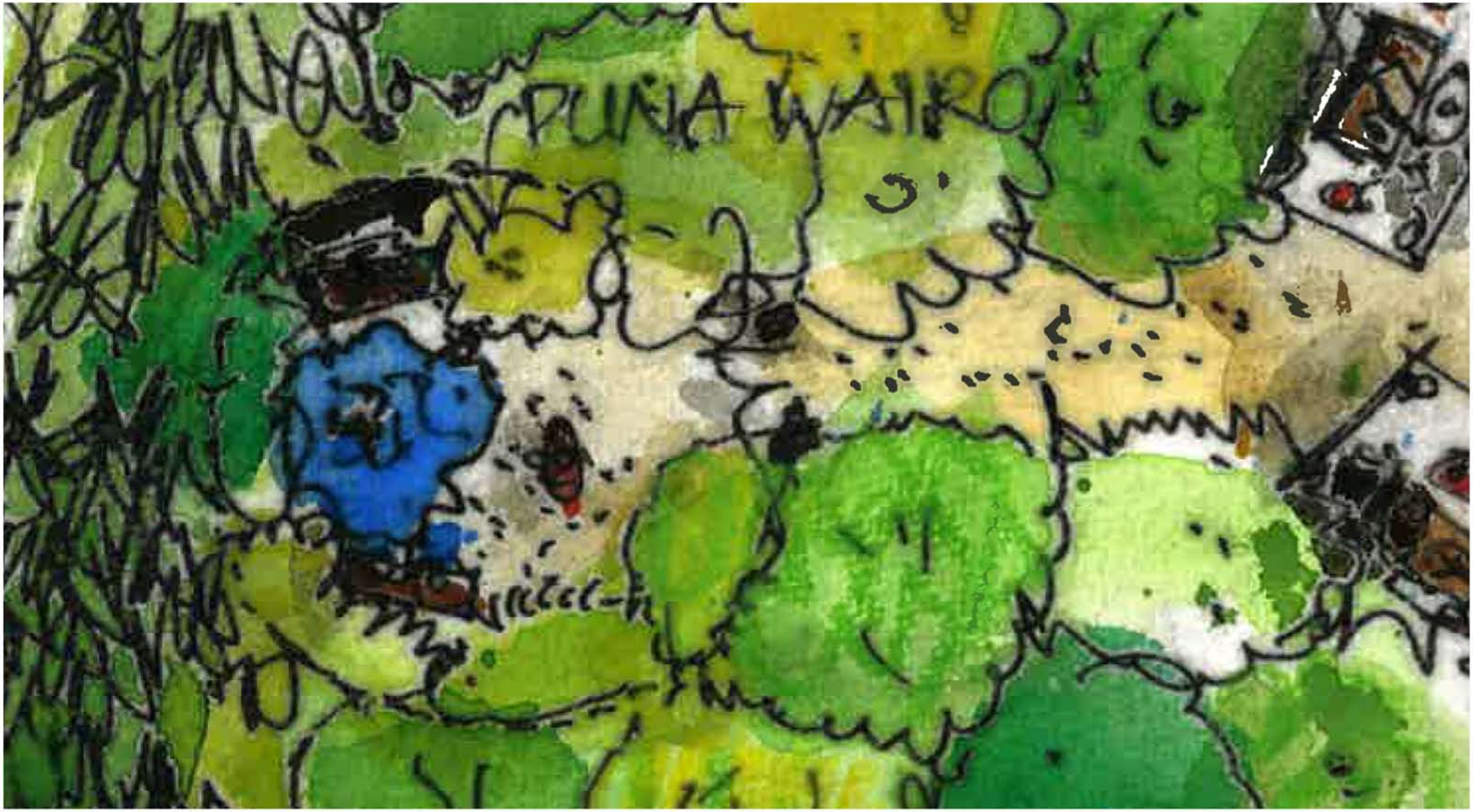

Puna Waiora

Rakau that like wet feet

Raupo, Bulrush, *Typha orientalis*
Purei, Niggerhead, *Carex tenuiculmis*
Harakeke, Flax, *Phormium tenax*
Toetoe, *Cortaderia sp.*
Kowhai, *Sophora sp.*

Kahikatea, White Pine, *Dacrycarpus dacrydiodes*
Kotukutuku, *Fuchsia excorticata*
Ti kouka, Cabbage Tree, *Cordyline australis*
Kowhitiwhiti, Watercress, *Nasturtium officinale*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakainga o Taranaki Whanui						PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust					DATE: December 2016 SCALE @ A3 1000	DWG # 20-41
DWG	Master Planning Drawings					DRAWN: JAM CHKD:	REVISION

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DWG	Master Planning Drawings					DRAWN JAM CHKD	REVISION

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Te Rua

Kai species

Manuka, *Leptospermum scoparium*
Tarata, Lemonwood, *Pittosporum euginoides*
Horopito, NZ pepper tree, *Pseudowintera colorata*
Mouku, Hen and Chicken fern, *Asplenium bulbiferum*

Kawakawa, *Piper excelsum*
Hangehange, *Geniostoma rupestre*
Poroporo, *Solanum aviculare*
Karamu, *Coprosma robusta*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By

PROJECT	Te Papakainga o Taranaki Whanui		PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust	DATE: December 2016 SCALE @ A3 1000	DWG # 20-43
DWG	Master Planning Drawings	DRAWN: JAM CHKD:	REVISION

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No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakāinga o Taranaki Whānui					PROJECT #	1811
CLIENT	Port Nicholson Block Settlement Trust					DATE: November 2018	DWG #
DWG	Master Planning Drawings					SCALE @ A3	
						DRAWN: JAM	
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Ngāhere

Learning opportunity for our tamariki

Manuka, *Leptospermum scoparium*
Mahoe, Whiteywood, *Melicitus ramiflorus*
Rimu, Red Pine, *Dacrydium cupressinum*
Makomako, Wineberry, *Aristotelia serrata*
Totara, *Podocarpus totara*

Kotukutuku, *Fuchsia excorticata*
Pate, *Schefflera digitata*
Kawakawa, *Piper excelsum*
Karamu, *Coprosma robusta*
Piupiu, Gully fern, *Pneumatopteris pennigera*

No	DATE	ISSUE	By	REV	DATE	ISSUE	By
PROJECT	Te Papakainga o Taranaki Whanui						PROJECT # 1611
CLIENT	Port Nicholson Block Settlement Trust					DATE: December 2016 SCALE @ A3 1000	DWG # 20-45
DWG	Master Planning Drawings					DRAWN: JAM CHKD:	REVISION

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						DRAWN JAM	
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RM180500

RMA FORM 9

APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

HUTT CITY TE AWA KAIRANGI

Basic instructions on how to apply are at the end of this form.
For additional help go to: huttcity.govt.nz/apply-online

An up-to-date version of Adobe Reader is required to fill this form out online.
Download for free get.adobe.com/reader/

To: Chief Executive, Hutt City Council

1. This is an application from:

Full name	*Last*	*First*
Company/organisation	THE WELLINGTON COMPANY	
Contact *if different*	ATTENTION: EARL HOPE-PEARSON	
Address	*Street number & name* LEVEL 12, 50 MANNERS STREET	
	Suburb TE ARO	
	City WELLINGTON	*Postcode* 6011
Address for Service *If different*	*Postal address* ATTENTION: STEPHANIE BLICK EGMONT DIXON LIMITED LEVEL 12, 50 MANNERS STREET	*Courier address*
Phone	*Day* 021 623 753	*Evening*
Fax		*Mobile*
Email	sblick@egmontdixon.com	

2. *Name of applicant* THE WELLINGTON COMPANY

apply for a
- [X] Land use resource consent
- [X] Subdivision resource consent
- [ ] Change or cancellation of a condition of a resource consent

3. The proposed activity of the application is:

RESOURCE CONSENT TO UNDERTAKE A 139 ALLOTMENT SUBDIVISION, CONSTRUCT 97 DWELLINGS AND UNDERTAKE ASSOCIATED EARTHWORKS + SERVICING

4. The location of the proposed activity is:

86-106 MOOHAN STREET, WAINUIOMATA

5. The names and addresses of the owners and occupiers (other than the applicant) of the proposed activity are:

N/A

6. [X] No additional resource consents are needed for this proposed activity *(e.g. from Greater Wellington)* OR

[ ] The following resource consents are needed for the proposed activity and

[ ] have been applied for:

[ ] have not been applied for:

List consents

7. [X] I attach, in accordance with the fourth schedule of the Resource Management Act 1991, an assessment of environmental effects in such detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.

8. [X] I attach any information required to be included in this application by the district plan, regional plan, the Resource Management Act 1991, or any regulations made under that Act. *(List all documents that you are attaching)*

Signature of applicant: *(or person authorised to sign on behalf of the applicant)*	18 DECEMBER 2018 *Date*

The following information MUST be included with your application for Resource Consent:

- The name and address of applicant and owner/occupier of land to which the application relates.
- Type of consent sought and other resource consents required.
- A description of the activity and its location.
- An assessment of effects (See Infosheet: Preparing and Assessment of Environmental Effects, for further guidance)
- Signature of applicant or person authorised to sign on behalf of the applicant and date.
- Certificate of Title (pictorial and written pages) and a copy of any encumbrances listed on it.
- All other information required by the District Plan (see attached copy of Section 17 of the District Plan including two copies of the Site Plan and Elevations to scale.)
- Signed plans and 'Approval of Person Affected by an Application for Resource Consent' forms, where written approval from affected persons has been obtained.
- Application Fee: The application fees payable are set out in Council's Resource Consent and Subdivision fees list.

Application fees cover the cost of processing your application only. Additional charges may apply. Consultants' fees and costs of disbursements will also be additionally charged and invoiced when consent is completed.

You must pay the charge, payable to Hutt City Council, for the resource consent application under Section 36 of the Resource Management Act 1991.

To avoid unnecessary delays in the processing of your resource consent your application WILL NOT be accepted by Hutt City Council unless ALL of the information requested above has been provided. If you have any questions about how to fill in this form or the processing of your application, please contact Hutt City Council on 570 6666.

TE MATEHOU, 82 & 106 MOOHAN STREET, WAINUIOMATA

THE WELLINGTON COMPANY LIMITED

STAGE 2 RESOURCE CONSENT APPLICATION AND ASSESSMENT OF ENVIRONMENTAL EFFECTS

DECEMBER 2018

DOCUMENT CONTROL

AUTHOR	 STEPHANIE BLICK – Planning Manager
REVIEWED	WILL DORSET – Senior Planner
APPROVED	EARL HOPE-PEARSON – Development Director
DOCUMENT REVISION	Final
DOCUMENT ISSUE DATE	December 2018
DOCUMENT REFERENCE	20181218-R001V1-0054-RCA-SLB
ED REFERENCE	0054

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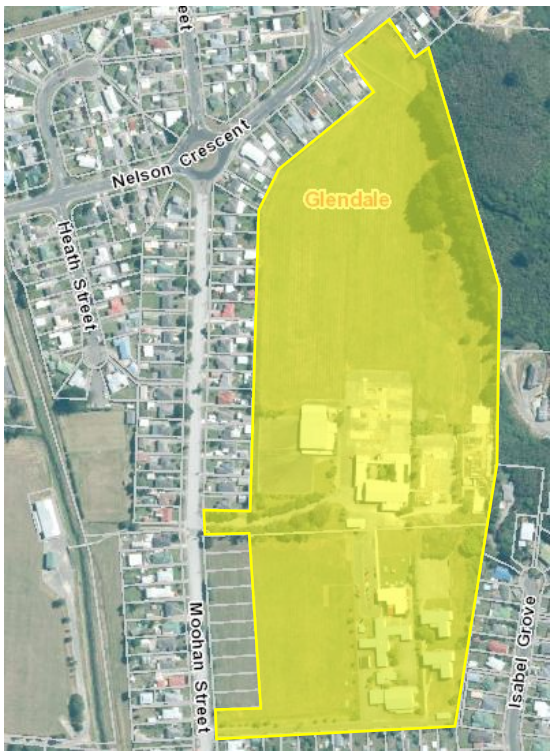
CONTENTS

APPENDICES

1. GENERAL PROPOSAL AND PROPERTY INFORMATION

TABLE ONE: GENERAL PROPOSAL AND PROPERTY INFORMATION

LOCALITY DIAGRAM *Source: GWRC Online Maps*	
SITE ADDRESS	86 – 106 Moohan Street, Wainuiomata, Lower Hutt
LEGAL DESCRIPTION	Lots 29 – 38 DP21094, Lot 28 DP 21094 and Pt Lot 1 DP 20910.
SITE OWNER/S	Lowry Bay Section One Limited
APPLICANT	The Wellington Company Limited
ADDRESS FOR SERVICE	The Wellington Company C/- Egmont Dixon Limited Level 12, 50 Manners Mall WELLINGTON 6011 **Attention: Stephanie Blick**
ADDRESS FOR INVOICE	As above
DESCRIPTION OF THE PROPOSAL	Resource consent application and assessment of environmental effects.
STATUS OF THE APPLICATION	Discretionary
DISTRICT PLAN	City of Lower Hutt District Plan
DISTRICT PLAN ZONE	Residential
NATIONAL ENVIRONMENTAL STANDARDS	Not applicable

2. EXECUTIVE SUMMARY

The Applicant, The Wellington Company Limited, in partnership with the Port Nicholson Block Settlement Trust ('the Trust'), and on behalf of the land-owning entity Lowry Bay Section One Limited seeks resource consent to undertake a staged subdivision to create xxx residential allotments, two allotments to vest as road, four jointly owned access lots, two allotments that will contain existing activities, two stormwater detention allotments and one balance allotment within stages 2 and 3 of the development of the Wainuiomata College site. Resource consent is also sought to undertake associated earthworks and servicing.

On the 1st of November 2018 subdivision and land use resource consents were obtained for Stages 1A, 1B1 and 1B2 of the development. Stage 1A involves a boundary adjustment of the nine existing allotments that adjoin Moohan Street. This was considered a minor boundary adjustment and was therefore assessed as a Permitted Activity pursuant to Rule 11.2.1(a). Stage 1B1 involves the creation of 11 fee simple allotments to accommodate Kaumatua units, a road allotment to vest, road for pedestrian access, one jointly owned access lot and two balance allotments. Stage 1B2 involves the creation of 28 fee simple residential allotments, a road allotment to vest, stormwater reserve, a road for pedestrian access, on jointly owned access allotment and two balance allotments. The Stage 1A boundary adjustment works have commenced and engineering approval drawings for stages 1B1 and 1B2 are currently being prepared. Enabling works are likely to commence in late January 2019.

On the 2nd of October resource consent was lodged with Hutt City Council to undertake a Comprehensive Residential Development being 'Stage 1C' of the development. This stage comprises the construction of 34 dwellings on lots; of which 33 will be less than 400m^2, subdivision consent to create 34 fee-simple residential allotments, one road to vest, one allotment to contain the existing Kohunga Reo facility and two balance lots, land use consent for site coverage and building length infringements and land use consent for earthworks. This application is yet to be granted.

The Applicant is now seeking resource consent to undertake a subdivision of the balance of the development site. The development proposed in this application represents the final stages of the Wainuiomata College Development masterplan. In particular, this application recognises a changing market with respect to allotment and house size. The 'smaller lot, smaller house' product introduced in this application provides a new offering to the Wainuiomata housing market, that, overwhelmingly consists of standard to large 3 to 4 bedroom houses on 500m^2 – 600m^2 allotments.

The proposal, that follows a master planning process that has been undertaken for the wider former Wainuiomata College site, presents a commitment to integrated and comprehensive design in order to deliver high-quality urban outcomes that are consistent with the Hutt City Medium Density Design Guide. Interfaces with adjacent existing development and development within the site that will remain have been sensitively considered.

The information within this application is considered to meet the requirements of Section 88 and the Fourth Schedule of the Resource Management Act ('The Act') and Section 1.8 of the District Plan. Accompanying this application is the following supporting information:

- Certificate of title (**Appendix One**);
- Application drawings including dwelling typologies and example on-lot landscaping plans (**Appendix Two**);
- Design statement and landscape strategy (**Appendix Three**);
- A Stormwater Strategy (**Appendix Four**);
- Draft Design Guidelines (**Appendix Five**);
- The Wainuiomata College Redevelopment Masterplan and cultural overlay plan (**Appendix Six**); and
- A Geotechnical Report (**Appendix Seven**).

Information provided in this application demonstrates that the potential adverse effects of the proposal on the environment will be less than minor. It is also concluded that the application need not be notified. In terms of Section 104(1)(a), the adverse effects of the proposal will be acceptable. The proposal is also not contrary to the relevant

objectives, policies and assessment criteria of the District Plan in terms of Section 104(1)(b). Hence in accordance with Section 104B of the Act, it is appropriate for consent to be granted.

3. BACKGROUND

The application site formally accommodated Wainuiomata Intermediate School and Wainuiomata College until these facilities were closed in 1999. The education designation on the site was subsequently removed. In January 2008 resource consent was obtained to operate a Kohunga Reo facility within an existing building on the site.

The property was identified as a Cultural Redress Property in the Port Nicholson Block (Taranaki Whanui ki Te Upoko o Te Ika) Claims Settlement Bill 2008. The bill gives effect to the Deed of Settlement in which the Crown and Taranaki Whanui ki Te Upoko o Te Ika agreed to a final settlement of the Taranaki Whanui ki Te Upoko o Te Ika historical claims.

Taranaki Whānui ki Te Upoko o Te Ika defines its rohe as conforming to the boundaries of the Port Nicholson Block and has 17,183 registered members.

In June 2015, the Trust obtained a grant to undertake a feasibility study for a housing and social services development on the former college site. A focus group was formed to advise on how to integrate the development into this community. In late 2016 government funding was secured to progress a papakainga housing development on the site.

On the 1st of May 2017 subdivision and land use consents were granted for papakainga development comprising 20-lot subdivision, the construction of 23 new dwellings and associated earthworks, engineering works and building bulk and location non-compliances. It was proposed that the development be undertaken in two stages.

Following a review of the proposal The Trust elected to engage a development specialist being The Wellington Company to undertake a review of the proposed papakainga and the proposed model for delivery.

In late 2017 a Wainuiomata College Masterplan was prepared to inform further development and staging of development of the site. The Masterplan is an evolving document that has recently been updated to reflect outcomes of stakeholder engagement.

The most up to date version of the masterplan has been included in this application for information purposes and does not form part of the application drawings.

For a number of reasons, the granted consent has not been implemented. In late 2017 the Trust agreed to revise the consented design to, amongst other things:

- Increase yield within the Stage 1 area;
- Establish a kaumatua precinct for occupation by Iwi elders;
- Establish a carparking area to ensure the consented number of car-parks for the existing Kohunga Reo will be retained on the site; and,
- Through a masterplanning process, ensure the redesign (including servicing) is integrated with future development of the site and with the buildings and activities to be retained on the site.

The allotments along the Moohan Street frontage of the site have already obtained titles via a s226 application process undertaken in late 2017. The s226 certificate was approved by Hutt City Council ('Council') on the 21st of February 2018. Services connections to these allotments have been approved by Council and Wellington Water and services installation works have been completed. As illustrated on the scheme plan a minor boundary adjustment is proposed to reduce the depth of these allotments. Council have confirmed that this can be undertaken as a permitted activity. It is anticipated that building consent applications for dwellings on these allotments will be lodged with Council prior to the completion of the titling works.

As identified above, resource consent has been obtained for stages 1A and 1B1 and 1B2 and Council are currently processing the subdivision and land use consent application for Stage 1C.

4. THE SITE AND SURROUNDING ENVIROMENT

4.1 GENERAL SITE DETAILS

The subdivision proposed in this application is intended on being a subdivision of the balance allotments proposed to be created via the Stage 1C subdivision. Refer application drawing 29560SCH2 Sheet 5 of 21 for the full application site area.

The underlying allotments, with a total combined area of 11 hectares, are legally described as Lot 28 DP 21094 and Part Lot 1 DP 20910.

The site is located in the General Residential Area of the City of Lower Hutt District Plan ('the District Plan'). The site is not located in the nine targeted medium density areas introduced in Plan Change 43: Residential and Suburban Mixed Use.

4.2 ACCESS

Access to the site is via an existing private drive that extends into the site between 108 and 112 Moohan Street. The lane extends around the former playing fields and runs along the western boundary of the site. Pedestrian crossings are located in the vicinity of both site existing entry and exit points.

While no formed crossing place currently exists, the site has a 47m frontage to Nelson Crescent. Informal pedestrian access to the site is provides via a pedestrian entry/exit gate along this frontage.

4.3 BUILDINGS AND INFRASTRUCTURE

The application site currently comprises grassed playing fields, an existing private lane, carparks for the Kohunga Reo facility and basketball courts and other ex-college buildings that are currently variously utilised by community clubs, community groups and schools.

A number of buildings and curtilage have been removed from the site with some hardstand building platform and retaining areas remaining on site in a state of disrepair.

4.4 SERVICING

4.4.1 WATER SUPPLY

There is an existing Council 150mm water main is located within the Moohan Street road reserve.

4.4.2 SEWAGE DISPOSAL

Wellington Water has advised that there is insufficient capacity in the downstream reticulation in this area to cater for this development. As further detailed in Section 5 below, after discussions with Wellington Water and Hutt City Council engineers, it has been agreed that on site waste water storage is to be provided so that as near as practically possible post development flows from the site do not exceed predevelopment flows.

4.4.3 STORMWATER

The site is served by three public stormwater mains, being:

- A DN600 reinforced concrete main which enters the eastern site boundary (near #9 Isabel Grove) before heading south and along the southern boundary, exiting the south western corner of the site.

  Two DN225 pipes discharge stormwater from the development site to the DN600 main.

- A DN750 reinforced concrete main collects stormwater, including a spring source, from the central site area. The DN750 main exits the site near the northern Moohan Street entrance (immediately south of number 108 Moohan Street).

- A DN525 reinforced concrete main also collects stormwater from the central site area and exits the site through number 120 Moohan Street.

There is an existing drainage ditch located along the western site boundary (to the rear of 19 – 36 Moohan Street and 18 – 27 Nelson Crescent). The drainage ditch collects stormwater runoff from the uphill bush catchment and playing fields directing this towards the DN525 stormwater main.

The capacity of the existing stormwater pipes has been assessed in the stormwater strategy attached in **Appendix Four.**

4.4.4 POWER AND TELECOMMUNICATIONS

There are existing power and telecommunication services located within the Moohan Street road reserve. A power transformer is located along the sites Nelson Street frontage.

4.5 TOPOGRAPHY

In general, the site slopes from east to west across three distinct terraces. A site topographic survey is included in **Appendix Two**. A relatively steep batter slope extends along the eastern boundary of the application site bound but a steep bush / forest catchment and an elevated residential area served by Wright Street and Isabel Grove.

4.6 ECOLOGY AND HYDROLOGY

Medium to large exotic and native trees and scrubs are scattered throughout the site with large exotic trees lining the existing entranceway to the site. Large mature trees extend into the site along the sites eastern boundary.

There are no watercourses or identified overland flowpaths located on the site. As further outlined in the Section 4.2 of the Stormwater Strategy flood modelling undertaken by Wellington Water indicates flooding adjacent to the southern access road as a result of surcharge from the stormwater network. Subsequent correspondence with Wellington Water has confirmed the rate of flood flow is 2.5m^3/s.

A natural spring of cultural value to the iwi has been identified in the south eastern portion of the site adjacent to 23 Isabel Grove.

4.7 CONTAMINATION

The site is not identified on Greater Wellington Regional Council's Selected Land Use Register ('SLUR') as being contaminated or potentially contaminated. The Applicant has confirmed that, to the best of their knowledge, no previous uses of the site were HAIL activities. Additionally, there is no recorded evidence on GWRC or Council files that the site is contaminated or potentially contaminated.

4.8 SURROUNDING ENVIRONMENT

Residential properties adjoin the southern and western boundaries of the application site and ex-Wainuiomata college buildings and fields adjoin the northern and eastern boundaries of the site

The wider residential area is generally characterised by residential development comprising predominately single storey dwellings. While most sites retain large lots of approximately 600m^2 – 800m^2, it is noted that not all residential sites within the surrounding environment maintain a 400m^2 net site area as anticipated in the District Plan, with examples of undersized sites (between 240m^2 and 330m^2) within the wider locality.

The site and surrounding environment is described in further detail in the Urban Design Statement attached in **Appendix Three** of this application.

5. CONSULTATION WITH COUNCIL

On Thursday the 7th of September, Earl Hope-Pearson, Stephanie Blick and Lauren White (via telephone) met with Kerry Wynne, Steve Mann and Parvati Rotherham regarding the development of the former college site. Draft concept plans of the Stage 1 development along with the draft masterplan were sent to Council officers ahead of the meeting. At the meeting, Lauren White (Project Urban Designer) talked through site constraints and opportunities and discussed the various elements of the masterplan.

The Council response to the draft masterplan was positive with no major issues noted. The masterplan was forwarded to Council's Consultant Urban Designer, Morten Gjerde who made the following comments:

> *"I have to say that the layout is one that I feel I could support. It is great to see opportunities for pedestrian permeability throughout the site, if not vehicular permeability. I think the solution there is great and will look forward to seeing how it works. the vegetation, the quality of the buildings and finishes in the common areas follow a pretty high standard. At their stage, where the structure and intentions for filling in the details around the edges of the structure, i think the feedback from me can only be positive."*

Some minor design refinements and suggestions were recommended by Council officers and consultants. These suggestions have been incorporated into the evolving masterplan and have been further refined in the Stage 1 application drawings. Further topographical survey and engineering design has refined the stage 2 and 3 design.

6. THE PROPOSAL

The Applicant seeks resource consent for the following:

- Subdivision consent to create, 127 fee-simple residential allotments, two roads to vest, three privately owned joint access lots, two stormwater detention allotments, two recreation reserves (i.e. pocket parks) to vest, one waahi tapu allotment (yet to be confirmed whether vested), one allotment to contain the existing community hall, and one balance allotment.
- Land use consent to construct 97 dwellings on allotments less than 400m^2;
- Land use consent for site coverage and access infringements; and,
- Land use consent for earthworks.

With respect to point two above, this application recognises a changing market with respect to allotment and house size. The 'smaller lot, smaller house' product introduced in this application provides a new offering to the Wainuiomata housing market that overwhelmingly consists of standard to large 3 to 4 bedroom houses on 500m^2 – 600m^2 lots.

Each aspect of the proposal is outlined in detail in the following sections and shall be read in conjunction with the application drawings and the Urban Design Statement provided as appendices to this application.

6.1 SUBDIVISION

In summary, the proposed subdivision will consist of:

- 127 fee-simple residential allotments ranging in size from 156m^2 – 1,124m^2. Of these allotments, 97 are less than 400m^2;
- One 11,283m^2 allotment (proposed Lot 301) to vest with Council as Road;
- One 824m^2 allotment (proposed Lot 302) to vest with Council as Road;
- Three jointly owned access allotments (lots 502, 503 and 504);
- Two recreation reserves (lots 401 and 408) to vest with Council as recreation reserve;

- One waahi tapu allotment (proposed lot 407) that comprises a waahi tapu site being the natural spring;
- Two stormwater detention allotments of 1,339m2 and 2,210m2 to vest as local purpose reserve (stormwater);
- One 2,715m^2 allotment (proposed Lot 404)to contain the existing community hall; and
- One 11,484m^2 balance allotment.

SUBDIVISION LAYOUT

The layout pattern is a simple grid, with new local roads providing frontage to residential sections. Newly created lots for the standard residential development are generally 21 to 31m deep and vary in width from 10m to 18.6m. All allotments will have a minimum width of 7m.

Lots generally have an east-west orientation which provides for good solar access to both internal and external spaces along their long sides. Lots 109 – 11 and 146 – 148 and 187 - 189 have a north-south orientation in order to address the public road or private land. Lots on corners are generally bigger to provide opportunity for private rear garden space away from boundaries.

Consistent with stage 1 of the development, the layout stages 2 and 3 of the subdivision has been influenced largely by typography and the following design drivers:

- Promoting a diverse community.
- Connectivity to the wider community and services.
- Responding to topography and environmental site specific requirements.
- Maintaining residential character and amenity of the existing established residential environment.
- Enhancing ecological and production values in a residential setting through designed landscapes

EASEMENTS

An easement schedule of the proposed easements is provided on application drawing 29560SCH sheets 7 and 8. Easements include:

- An easement over proposed lots 210, 211 and 212 to protect an existing sewer line. The lots have been designed to ensure, houses building on these allotments can be constructed clear of the proposed easements.
- An easement in gross to drain water within proposed allotment 85 to protect an existing sewer line. This lot has been designed to ensure a house can be built on this allotment clear of the proposed easement. Refer application drawing 29560SCH2 Sheet 14 of 21 for details of the existing line.
- An easement in gross to drain water within jointly owned access lots 501 and 504. Refer application drawing 29560SCH2 Sheet 13 of 21 for details of proposed sewer line.
- An easement in gross drain sewage and convey water within jointly owned access lot 502. Refer application drawing 29560SCH2 Sheet 13 of 21 for details of proposed sewer and water lines.

6.1.1 SERVICING

Each allotment will be provided with separate water, wastewater, power and telecommunications connections as illustrated on the services plans attached in **Appendix Two,** and as detailed in the following sections.

WATER SUPPLY

There is an existing Council 150mm water main in Moohan Street which will be extended into the site in Stage 1 of this development. It is proposed to further extend this main to service Stage 2 and to provide a loop through to another connection off the existing Council main in Nelson Crescent. Additional rider mains will be installed as required to

provide a service to each lot which will have a 20mm manifold connection. Water pressure and flow testing has been undertaken by AD Riley as part of Stage 1 works. The results indicated available pressure of 85m, and flow rates in excess of 40 litres/sec. Water supply will be provided to meet the requirements of the Regional Standard for Water Services.

SEWAGE DISPOSAL

Wellington Water has advised that there is insufficient capacity in the downstream reticulation in this area to cater for this development. After discussions with Wellington Water and Hutt City Council engineers, it was agreed that on site waste water storage is to be provided so that as near as practically possible post development flows from the site do not exceed pre-development flows. This storage allows for the development of the whole site and will be constructed as part of Stage 1 works. No additional storage is to be provided as part of Stage 2.

New sewer mains laid in Stage 1 will be extended into the site to service Stage 2. Each lot will have a 100mm lateral connection. Wastewater reticulation will be provided to meet the requirements of the Regional Standard for Water Services.

STORMWATER RETICULATION AND FLOWPATHS

Wellington Water have confirmed that the proposed development must be hydraulically neutral for all events up to the 1% AEP event.

A site wide stormwater strategy was prepared in April 2018 to support the resource consent approvals for Stage One of the development of the site. An addendum memo has been prepared to update the stormwater strategy to reflect the development now proposed across the balance of the site. The addendum identifies flood extents, anticipated stormwater detention volumes, secondary flow paths and infrastructure requirements, providing sufficient detail to demonstrate that stormwater can be effectively managed so that the impact on the receiving catchment is negligible. The strategy is subject to detailed design and engineering approval which will follow once resource consent has been obtained.

Stormwater Strategy

For the purposes of the stormwater strategy the site has been split into eight sub-catchments (refer 18005 – SK001 attached to the Stormwater Strategy). Stage One has been modelled separately (as discussed above) and is included on the strategy sketches for completeness.

Stormwater from subcatchments (2A, 2C, 3A and B) will be collected by conventional gravity drainage and transferred to two attenuation areas. Stormwater detention will be achieved via detention basins. Stormwater discharge from the attenuation areas will be controlled to ensure that the post development discharge does not exceed the predevelopment discharge. Overland flows from the wider catchment will be collected and transferred through the site via specially designed overland flow paths.

The existing DN750 and DN525 mains will be retained and utilised to discharge stormwater from Stages Two and Three. The DN750 main may need to be relocated into the road reserve and will need to continue to collect spring flows as existing.

To achieve hydraulic neutrality the total off-site peak stormwater discharge needs to be limited to the pre-development peak flows (Table 3.1 of the Stormwater Strategy) but also cannot exceed the offsite pipe capacities as indicated in Table 7.2 of the Stormwater Strategy.

The post development stormwater discharge and detention volumes have been assessed by routing the pre and post development stormwater hydrographs for the 1% and 10% critical events using a modified tank routing spreadsheet. Calculations are provided in *Attachment C* and are summarised in Table 7.3 of the Stormwater Strategy.

The assessments provided in the Stormwater Strategy confirm that the proposed strategy will offer a betterment over the existing situation i.e. achieve hydraulic neutrality.

The following additional details are noted:

- Wellington Water modelling indicates flooding along the southern site boundary. This flooding is managed within Stage One and does not impact on Stages Two and Three.

- Wellington Water confirm a flood level within Moohan Street near the southern site boundary (Refer Figure 2.1 of the strategy) as being 86.6 m aMSL (1% AEP event with Climate Change).

Overland Flow Paths

Wellington Water have confirmed that their current model does not consider the local catchment and has not therefore mapped any secondary overland flow paths. The approximate extent of the wider catchment is identified on Figure 5.1 of the Stormwater Strategy.

Indicative secondary overland flow paths are identified within the stormwater strategy presented in Attachment B of the Stormwater Strategy. As the overland flows from the uphill catchment do not need attenuating they have not been included within the hydraulic assessment undertaken to confirm stormwater detention volumes. The location and size of the secondary overland flow paths (within Stages Two and Three) and their impact on the detailed stormwater design will be confirmed as part of the detailed design.

The secondary overland flows from Stages Two and Three will be directed off-site:

- to Nelson Crescent via a secondary overland flow path constructed along the base of the uphill catchment subject to confirmation of final levels.

- to Moohan Street via an overland flow path along the northern Stage One access road.

The anticipated peak discharge from the uphill catchment has been determined using a nested hydrograph as being 1.43 m3/s. Calculations are provided in Attachment C of the Stormwater Strategy to show that the anticipated catchment flows can be contained within the 7.2 m road carriage with minor (10mm) spill onto the verge (anticipated water level depth 0.135m).

The secondary overland flows will not therefore impact on the site road network.

POWER AND TELECOMMUNICATIONS

Power and telecom services will be supplied off the reticulation laid in from Moohan Street in Stage 1 and also off new connections in Nelson Crescent. New services will be laid in the road berms and right of ways to provide individual connections to each lot.

6.1.2 ROADING AND VEHICLE ACCESS

Existing roads constructed in Stage 1 will be extended and a new road connections will be made onto Nelson Crescent. The new intersection on Nelson Crescent has been sited to be as far away as possible from the Nelson Crescent/Wise Street intersection.

Within the development, the road layout proposed in this stage provides legal access and legal frontage to all proposed allotments.

The internal configuration of the proposed new road varies depending on location and topography and to respond to likely pedestrian movement, existing landscaping and envisaged connections through to the wider development site.

For the proposed loop road (proposed Lot 301) the 15m wide carriageway enables footpaths to be built on both sides of the road. The 2.25m berm width of both sides of the road provides opportunities for street tree planting.

Another road is proposed to extend from the road included in the Stage 1C comprehensive residential development consent. The formed road will have a width of 5m.

Given challenges in existing topography Councils standard road widths could not be achieved across the site and therefore jointly owned access allotments are proposed. Jointly owned access lot 502 has a total width of 13m and provides access to proposed lots 167 – 178. Extending from access lot 502, jointly owned access lot provided access to proposed lots 187 – 189 and 179 – 186. Both lots 502 and 503 extend to jointly owned access lot 501 that provides access to Road 101 that formed part of the Stage 1C consent application.

Jointly owned access lot 504 provides a connection from proposed road 302 to jointly owned access lot 501.

A Residents Association will be set up across the whole development to manage the ongoing maintenance of communal assets including the jointly owned access lots.

An overall road layout plan and roading cross sections for each of the proposed roads are provided with the application drawings (refer Appendix Two). An indicative raised crossing is illustrated on drawing 29560SCH sheet 19 of 21.

PEDESTRIAN ACCESS

Pedestrian footpaths are proposed on both sides of the main loop road and a footpath is proposed on the northern side of the proposed extension to Road 01 (proposed Lot 302).

Pedestrian access through to the first stage of the development will be provided within the local purpose reserve to vest (proposed lot 405). The location and extent of the walkway within this allotment will be confirmed at detailed design.

The kaumatua village area consented in the Stage 1A and 1B consent will connect, via a pedestrian walkway, through the stormwater reserve allotment (proposed Lot 402) to the proposed road to vest.

6.1.3 PARKING

The road cross sections provided in this application illustrate that on-street parking will be provided. In addition, all of the allotments are considered to be of a sufficient size to accommodate one vehicle parking space.

6.1.4 LANDSCAPING

Landscaping is considered to be an important aspect of the development and necessary to add amenity and create a sense of place and distinction. It is seen as an important tool in creating the following outcomes in the development:

- *Variety across the site and reinforcement of masterplan features*
- *Retention of existing trees where appropriate and practical, thereby assisting with an established landscape character.*
- *Creating entry features*
- *Creating visual amenity in shared spaces.*
- *Identifying different use areas (e.g. pedestrian routes)*
- *Providing fauna habitat through use of native species*
- *Providing visual interest through colour (e.g. fruit trees and deciduous trees)*
- *Providing opportunities for community gardens to foster social interaction, community health and education and affordability.*

Draft landscape specifications and a draft cultural overlay strategy has been developed for the entire development (refer **Appendix Three)**. It is proposed that final landscaping details be provided to Council for approval as a condition of consent. This is because further stakeholder engagement is to be undertaken to confirm the final landscaping strategy and the final cultural overlay strategy.

ENTRY LANDSCAPING

As indicated on the cultural overlay plan, proposed allotment 401 has been designed to accommodate a gateway feature. It is likely that this site will accommodate a large artwork.

The design of the hard and soft landscaping will be undertaken after engagement with iwi members and other key stakeholders to ensure appropriate social and cultural outcomes are met.

ON-LOT LANDSCAPING

All landscaping on the proposed allotments will also be subject to adherence to design guidelines that have been specifically designed to control future development on the site. Consistent with the Stage 1 consent, it is anticipated that the final design guidelines will be subject to Council approval.

These guidelines include a requirement for future residential allotment owners to submit a landscape plan that includes details of:

- All fences, paths, driveways and their construction materials;
- The location of clotheslines and sheds;
- Areas of grass and gardens and specifications for planting height.

The guidelines also include the following guidelines for fencing and retaining:

- Front yard fencing materials should complement/be consistent with the materials of the dwellings
- Fences cannot exceed 1.2 metres in height in front of the residential dwelling which has its front boundary adjoining a street; and
- Fences cannot exceed 1.8 metres in height along the side boundary of a Lot,
- All fencing running parallel to any lot boundary that is adjacent to the western boundary shall be the black swimming pool fencing of the permitted fencing options on page x of this guide.
- If the Lot is accessed by an Access Way, then a fence not exceeding 1.8 metres in height on all boundaries of the Lot is permitted.

Consent condition 74 of the Stage 1 resource consent requires that tailored landscaping plans shall be submitted to Council for approval:

> *74. That, in accordance with section 221 of the Resource Management Act 1991, Council registers a consent notice on the certificate of title on Lots 1-28 that requires all development on these sites to be undertaken in accordance with the approved development design guidelines. Tailored landscaping plans shall be submitted to Team Leader Resource Consents prior to granting of any building consent which details hard and soft landscaping treatments across the lot including details of fencing and private outdoor areas. Future development across these sites will continue to be restricted by District Plan requirements.*

An example of the level of detail that will be provided with these plans is included in the application drawings. Refer Friday Homes Plans in **Appendix Three.**

6.1.5 STREET LIGHTING

The lighting will be designed to comply with AS/NZS 1158:2005. It is requested that final lighting specifications be provided to Council for certification as a condition of consent.

6.1.6 SUBDIVISION STAGING

The Applicant requests that sufficient flexibility be afforded to enable titles for the allotments to be obtained in stages. To this end, the following consent condition is proposed:

Individual certifications pursuant to sections 223 and 224(c) of the Resource Management Act 1991 can be issued for this subdivision in a series of stages, provided that the following criteria are met for each subdivision stage:

- *Each individual allotment must be consistent with the proposal as approved and must have frontage, or legal access, to a legal road;*
- *For the purposes of s224(c) approval, each allotment shown on any survey plan, must be adequately serviced as required by, and in terms of, the relevant conditions set out in this notice of decision, and it must be demonstrated that adequate provision has been made to enable the servicing of the balance allotments;*
- *All conditions pertaining to the specific allotments shown in the particular stage on the survey plan must be satisfied prior to the execution of a certificate pursuant to section 224(c) of the RMA in respect of that stage.*

6.2 LAND USE - RESIDENTIAL DEVELOPMENT

6.2.1 DWELLINGS

Of the fee-simple allotments proposed in this application, 97 allotments are less than 400m^2. Therefore, resource consent is required for residential development of the site and accordingly, land use consent is sought to construct 100 dwellings on these allotments.

To provide Council with enough certainty that the whole development has been cohesively considered, and in order to achieve the desired urban design outcomes with respect to surveillance, variety and internal amenity, typologies have been recommended for each site. However, the Applicant seeks sufficient flexibility to not expressly determine all housing typologies at this stage. In addition, retaining some flexibility with respect to lot owners' preference for typology and orientation is considered beneficial. Accordingly, it is proposed that final site plans confirming the final typologies for each allotment be provided to Council as a condition of consent.

To ensure a mix of housing typologies is developed across the site and that an adequate level of quality, variety and individuality is provided, ten housing typologies for the development will be used in this development.

The house typologies are all single storey and have two or three bedrooms. The architecture is simple and contemporary, references the forms of the 1950's and 60's houses in the local area and employs a range of roof forms and features to create visually interesting streetscapes. The houses vary in width and depth in response to location and allotment orientation and layout. Their floor plans prioritise living space, efficiency and indoor-outdoor flow and activation of courtyards and spaces.

The house typologies vary in size from a GFA of 80m^2 to 160m^2 and vary in width and depth in response to the dimensions of the proposed allotments.

SITING OF TYPOLOGIES

Typologies are to be suited to their site proportionally, be orientated for optimal solar gain, have variety in appearance between adjacent lots, be placed in a manner that assists in achieving the best landscape and urban design outcomes. The public/private interface between the houses and the street or public space allows passive surveillance to increase safety.

The recommended house typologies for each lot are indicated on the typology map and assocaited typology table on pages 6 and 7 of the Landscape and Urban Design Statement (refer **Appendix Three**). The table also includes other alternatives considered appropriate by the project urban designer. As outlined in the statement, the rationale underpinning the choice of the typologies includes:

- *the width and depth of the houses are appropriate for the width, depth and size of the site;*
- *the internal living spaces of the house have good solar orientation;*
- *the house next is not the same design style as those on the adjacent sites, including building form and material and colour selection;*
- *the housing typology choice(s) accommodates and reinforces the landscape design concept;*

- *the location and number of living rooms on the front of the house that provide surveillance of the street space to insure real and perceived public safety;*

- *houses on corners have good elevations to both streets.*

The specific rationale for the placement of typologies throughout the development is also included on the siting typology table on Page 7 of the Landscape and Urban Design Statement (refer **Appendix Three**).

Land use consent is also sought in this application for site coverage and front yard infringements of the housing typologies on some allotments.

DRAFT DESIGN GUIDELINES

As outlined above, in order to ensure the preferred typologies developed are constructed on the relevant allotments and to ensure high-quality landscaped areas and materials are utilised, it is proposed that future development of the allotments is controlled via the imposition of design guidelines that will be required to be adhered to via a consent notice. Attached to these guidelines will be the typology site plans and accompanying table.

Draft guidelines are attached in **Appendix Five.** It is requested that final guidelines are provided to Council for approval as a condition of consent, prior to the construction of dwellings, to enable refinement of the guidelines based on further engagement with stakeholders, joint venture partners and Councils urban design consultant.

6.3 EARTHWORKS AND CONSTRUCTION

Site enabling works, including bulk cut and fill works to create level building platforms, are proposed as further described below.

6.3.1 EARTHWORKS AREA AND VOLUME

As illustrated on application drawing 29560SCH Sheet 6, details of the proposed earthworks are as follows:

- Total earthworks area: 5.32ha
- Cut volume: 9,880m^3
- Fill volume: 6,720m^3
- Balance volume: 3,160m^3
- Maximum cut height: 1.6m
- Maximum fill height: 1.4m

In order to create level building platforms battered slopes are proposed as illustrated on application drawings 29560SCH sheets 9 - 12.

6.3.2 EROSION AND SEDIMENT CONTROL MEASURES

In order to minimise or ultimately avoid erosion and sediment-laden stormwater generation the following erosion and sediment control ('ESC') measures are proposed:

- A stabilised construction entrance that will limit the transfer of sediments from the site onto the local road environment;
- Silt fences to intercept sediment laden runoff and reduce and divert the extent of sediment leaving the site; and,
- Stormwater inlet protection that will provide a barrier and filter sediment laden runoff before it enters the stormwater system thereby preventing sediment laden flows entering receiving environments.

No erosion and sediment control measures will be installed on adjoining residential properties.

All of the proposed erosion and sediment control measures will comply with the Erosion and Sediment Control Guidelines for the Wellington Region.

Indicative erosion and sediment control plan measures are provided on the application drawings and the Applicant proffers a consent condition requiring that an Earthworks and Construction Management Plan ("ECMP"), that includes finalised erosion and sediment control measures, be prepared and provided to Council for approval prior to the commencement of site works.

EROSION AND SEDIMENT CONTROL MONITORING

Regular monitoring will be undertaken by the Contractor and a suitably qualified Engineer for the duration of the works. It is intended that the ESC measures will be modified as the works progress. The monitoring, maintenance and reporting of the ESC are an essential part of the construction phase in order to minimise any adverse environmental impact.

Monitoring will generally consist of the following:

- Daily inspections by the Contractor;
- Weekly inspections by the Engineer;
- Monthly audits by the Engineer; and,
- Inspections at times of heavy rainfall by the Contractor and the Engineer.

6.3.3 EARTHWORKS METHODOLOGY

A preliminary earthworks methodology is outlined below. The methodology will be confirmed and finalised with the Contractor upon awarding of the construction contract and a final methodology will be provided in the ECMP.

1. Topsoil will be stripped and stockpiled on site away from site boundaries.
2. All erosion and sediment control devices will be installed and certified by a suitably qualified person. All measures will be installed and maintained in accordance with the Erosion and Sediment Control Guidelines for the Wellington Region. The locations of the devices are illustrated on application drawing 230.
3. In order to prevent the site access point from becoming a sediment source and to assist in minimising dust generation, a stabilised construction entrance will be constructed in accordance with the detail in Section 4.8 of the *Erosion and Sediment Control Guidelines for the Wellington Region.*
4. Machinery will be moved onto the site. Once the machinery has been delivered there will be no other heavy machinery required to access the site through the earthworks period.
5. Bulk earthworks will be undertaken. No earthworks will occur during times of heavy rainfall.
6. Interim site stabilisation of exposed surfaces will be applied. The build platforms and new roads will be stabilised with basecourse as soon as the subgrade is at the correct level and is adequately compacted.
7. Existing buildings to be removed will be demolished. If asbestos removal is encountered appropriate procedures will be undertaken.
8. Constructions works will commence.
9. All landscaping works will take place and there will be no remaining exposed surfaces.

6.3.4 CONSTRUCTION WORKS

The Applicant confirms acceptance with the imposition of standard Council consent conditions relating to construction noise, construction hours and dust and sediment control. Further, as noted, it is envisaged that the site be managed in accordance with an approved ECMP. This plan will be drafted and submitted to Council for certification prior to the commencement of works. The ECMP will address the following:

- Construction hours;
- Construction noise;
- Construction traffic management;
- Building demolition works;
- Erosion and sediment control;
- Dust control; and,
- Complaint management.

6.3.5 GEOTECHNICAL INVESTIGATIONS

A geotechnical report provided in **Appendix Seven** of this application acknowledges that the site is suitable for residential development providing that certain recommendations (such as engineer designed foundations) are adhered to. The Applicant confirms acceptance with imposing these recommendations via the imposition of the same consent condition that was imposed on the Stage 1 consent:

> *That the consent holder takes into account the report prepared by Coffey Geotechnics (NZ) Ltd (now known as Coffey Services(NZ) Ltd) dated 10 October 2013 and engages a qualified geotechnical engineer to undertake detailed site investigations, design work and prepare a report to provide specific recommendations for the design of the retaining walls, building foundations, service foundations, earthworks and any other geotechnical considerations related to the proposed development. This shall include, but is not limited to; undertaking shallow and deep soil investigations and an assessment of liquefaction as recommended in this report (refer to Clause 6). This report shall be submitted with, or prior to the engineering plans, for approval. If appropriate, Council will register a consent notice on certificates of title, as allowed for under section 221 of the Resource Management Act 1991, to ensure any future earthworks satisfy this condition.*

6.4 MARKETING SIGNAGE

A two metre high banner will display the name of the development and development partner logos along the length of the site's Nelson Crescent frontage. The banner is partially transparent and will also act as a dust barrier.

It is expected that the signage be displayed for a maximum period of 18 months.

7. REASONS FOR CONSENT

7.1 CITY OF LOWER HUTT DISTRICT PLAN

The site is located in the General Residential Area of the District Plan. An assessment of the proposed development against the relevant rules, standards and conditions of the District Plan is provided in the following sections.

7.1.1 CHAPTER 11 SUBDIVISION

Rule 11.2.2(a) of the District Plan allows for subdivisions in the General Residential activity area as a Controlled Activity where standards are met. These standards relate to allotment design, engineering design, contamination, esplanade reserves, strips and access, earthworks and other provisions. An assessment of the proposed subdivision against the relevant standards is provided in **Table Two** below.

TABLE TWO: CONTROLLED ACTIVITY SUBDIVISION STANDARDS AND TERMS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
11.2.2.1	(a) Allotment design: Minimum size of allotment: 400m^2	**Does not comply**	As noted above, 100 allotments do not comply with the

TABLE TWO: CONTROLLED ACTIVITY SUBDIVISION STANDARDS AND TERMS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
	Minimum frontage: 3m, to ensure that there is drive-on access to the allotment. For rear allotments the 3m frontage may be satisfied through a registered Right of Way outside the title (outside legal boundaries of the allotment). Shape factor: All allotments must be able to contain a rectangle measuring 9m by 14m. Such rectangle must be clear of any yard or right of way and have a suitable building platform. Other: Compliance with the permitted activity conditions of the activity area.		minimum allotment size of 400m$^{2.}$
	(a) Engineering Design (i) Access – compliance with Chapter 14A	**Complies**	Refer **Table Three** below.
	(ii) Service lanes, private ways, pedestrian accessways and walkways – compliance with Chapter 14A Private way standard – 7-10 dwellings: 7m legal width with 5m carriageway and 1m footpath.	**Complies**	The proposed private ways / access lots have been designed to comply with this standard.
	(iii) Street lighting: Compliance with AS/NZS 1158:2005 Code of Practice for Road Lighting	**Complies**	Conditions of consent requested by the Applicant will seek to ensure that lighting will meet the necessary standards.
	(iv) Stormwater: Compliance with the standards in stormwater protection table	**Complies**	Stormwater provision has been designed to comply with this standard.
	(v) Wastewater: Compliance with the following standards: (refer table)	**Complies**	Wastewater provision has been designed to comply with this standard.
	(vi) Water Supply: Compliance with the following standards: (refer list) subject to the following criteria and guideline values: (refer table)	**Complies**	Water supply provision has been designed to comply with this standard.
	(vii) Telecommunications and Electricity – Compliance with the requirements of the relevant network utility operator.	**Complies**	Telecommunication and electricity provision have been designed to comply with this standard.
	(viii) Earthworks – compliance with the following: • NZS 4431 1989 (Code of Practice for Earth Fill for Residential Development) and Part 2 NZS 4404:2004 (Land Development and Subdivision Engineering) • Erosion and Sediment Control Guidelines for the Wellington Region and Small Earthworks Erosion and Sediment	**Complies**	Earthworks have been designed to comply with these standards. Conditions imposed by Council with respect to earthworks will ensure this.

TABLE TWO: CONTROLLED ACTIVITY SUBDIVISION STANDARDS AND TERMS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
	Control for small sites, 2003, Greater Wellington Regional Council		
	(a) Contamination – compliance with the following: • Ministry for the Environment, Contaminated Land Management Guidelines 1 – 5	**Not applicable**	The site is not contaminated or potentially contaminated and therefore this standard is not applicable.
	(b) Esplanade Reserves, Strips and Access Strips	**Not applicable**	The application site is not an allotment that directly adjoins a river or stream corridor and therefore this standard is not applicable.
	(c) Earthworks Compliance with permitted activity conditions 14I2.1.1. Compliance with NZS 4431 1989 (Control of Practice for Earth Fill for Residential Development) and Part 2 NZS 4404:2004 (Land Development and Subdivision Engineering), Erosion and Sediment Control Guidelines for the Wellington Region 2003 and Small Earthworks Erosion and Sediment Control for Small Sites, Greater Wellington Regional Council. Exception: The standards in Rules 14I2.1.1(a) and (b) shall not apply to trenching carried out as part of the subdivision.	**Does not comply**	Refer Table Three below.
	(d) Other Provisions Compliance with the following: i) Financial contributions in Chapter 12 of this Plan ii) General Rules in Chapter 14 of this Plan.	**Does not comply**	Refer Table 3 above that sets out the non-compliances with general rules included in Chapter 14.

Rule 11.2.4(i) states that any subdivision not identified as a Permitted, Controlled or Restricted Discretionary Activity is a Discretionary Activity. As the proposal does not comply with the minimum allotment design and permitted activity conditions in relation to earthworks, **Discretionary Activity** subdivision consent is sought.

7.1.2 CHAPTER 4A GENERAL RESIDENTIAL ACTIVITY AREA

DWELLINGS

Rule 4A.2.1(a) of the District Plan provides for dwelling houses as permitted activities subject to compliance with the relevant permitted activity conditions. An assessment of the proposal against the relevant permitted activity conditions is provided in **Table Three** below.

TABLE THREE: PERMITTED ACTIVITY RULES AND STANDARDS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
4A.2.1.1	(a) Net Site area: 400m^2	**Does not comply**	Of the proposed allotments, 100 do not comply with this standard.
	(b) Minimum Yard requirements – front – 3m, all other yards – 1m	**Does not comply**	Proposed Villa B are detached units that will be separated via

TABLE THREE: PERMITTED ACTIVITY RULES AND STANDARDS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
			a party wall – therefore the side yard requirement will not be complied with. This relates to lots 174-175, 145-146, 185-186, 195 – 196. Further, the typologies on the following allotments infringe the 1m yard setback by 0.2 – 0.3m: 116- 125, 109-111, 166-172 and 179-181
	(c) Recession planes = 2.5m x 45 degrees Where the net site area boundary is immediately adjacent to an access leg to a rear net site area then the recession plan shall be calculated from the furthermost or outside boundary of the access leg	**Complies**	All indicative typologies will comply with this standard. Should any future dwelling not comply with this standard then a separate land use consent will be sought.
	(d) Maximum height of buildings and structures: 8m Maximum overall height may not exceed 13m	**Complies**	All indicative typologies comply with this standard. Should any future dwelling not comply with this standard then a separate land use consent will be sought.
	(e) Maximum site coverage: 35% (eaves up to a maximum depth of 0.6m shall be excluded from this measurement).	**Does not comply**	The indicative typologies on proposed lots 108 – 111, 145 – 147, 185 – 186, 197 - 204 do not comply with this standard. Refer **Table Four** below.
	(f) Maximum length for all buildings and structures: No part of any building exceeding 20m in length may fall outside two arms meeting at a common point on the boundary and each making an angle of 20 degrees with that boundary.	**Designed to comply**	All proposed typologies comply with this standard.
	(g) Permeable surface: 30% of the net site area. This includes desks provided the surface material of the deck allows water to drain through to a permeable surface.	**Designed to comply**	The total permeable surface coverage of the site will comply with this standard. Should any future dwelling not comply with this standard then a separate land use consent will be sought.
CHAPTER 14A TRANSPORT			
14A(ii) Property Access and Manoeuvring Space			
14A(ii)2.1	(a) Vehicular access: In all activity areas, vehicular access to new developments from the public street network shall be located and designed in such a way as to ensure convenient and safe movement to and from the site with minimal interference to other	**Complies**	The proposed access arrangements comply with this standard.

TABLE THREE: PERMITTED ACTIVITY RULES AND STANDARDS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
	traffic, to pedestrians and to on street parked vehicles.		
	(b) Separation distance from intersections: No driveway shall be closer to the intersection of any road, than 20m (more than 20 vehicle movements per hour)	**Complies**	All vehicle crossings will be designed to comply with this standard. The vehicle crossing for proposed Lot 84 will be located to the rear of the allotment to ensure direct vehicle access is not provided from Nelson Street.
	c) Vehicle crossings over footpaths. Vehicle crossings over footpaths to provide access to any parking or loading space shall comply with the following: The width of any vehicle crossing of the street frontage shall be in accordance with Table 5. The trip generation rates contained in Table 4 shall be used to determine the maximum rate. For 30 – 100 movements per hour – combined width: 5.5m	**Complies**	The width of the proposed vehicle crossings will be designed to comply with this standard.
	d) Circulation and manoeuvring space. Each site shall have sufficient internal roading to allow for all necessary movement within the site without the need to use public roads and facilities within the site such as parking. Sufficient space shall be provided for vehicles to stand, queue and make all necessary manoeuvres without using the space provided for parking, servicing, loading or storage purposes. All sites shall have sufficient manoeuvring space on site to allow vehicles using the site to both enter and leave the site in a forward direction.	**Does not comply**	Not all of the typologies / allotments will enable sufficient on-site manoeuvring to ensure all vehicles can enter and exit the site in a forward direction.
14A(iii) Car and Cycle Parking			
14A(iii)2.1	(e) Car parking requirements: (Appendix Transport 3) New single unit – 2 spaces Three or more dwellings on any single site – 1 space Residential facility for 8 – 10 persons – 3 spaces if contained in an existing building, 4 if contained in a new building.	**Technically does not comply**	The proposed allotments are of a sufficient size to accommodate one parking spaces. The larger vacant allotments will be able to easily accommodate two vehicle parking spaces. In addition, on-street parking has been provided within the proposed road reserves.
	(f) Location of parking spaces: Parking spaces must be provided on site (i.e. allotment).	**Technically does not comply**	As above.
CHAPTER 14I EARTHWORKS			

TABLE THREE: PERMITTED ACTIVITY RULES AND STANDARDS ASSESSMENT

REF	STANDARD	COMPLIES	COMMENT
14I.2.1.1	(b) Ground level: The natural ground level may not be altered by more than 1.2m measured vertically.	**Complies**	The ground level will be altered by more than 1m measured vertically.
	(c) Quantity: Maximum volume of 50m^3 (solid measure) per site	**Does not comply**	The total volume of earthworks proposed does not comply with this standard.

Rule 4A 2.4(a) of the District Plan states that any land use proposal that is not a Permitted, Controlled or Restricted Discretionary activity is a Discretionary Activity. As the proposal does not comply with the standards identified above, **Discretionary Activity** land use consent is sought.

7.1.3 CHAPTER 14B SIGNS

Temporary marketing signage will be located on the construction fencing along the sites street frontage. It is expected that the signage be displayed for a maximum period of 18 months.

The proposed signage fails to comply with the permitted activity standards of 14B 2.1.1 and as such **Discretionary** activity resource consent is required pursuant to Rule 14B 2.4.

7.1.4 OPERATIVE DISTRICT PLAN CONSENT REQUIREMENT SUMMARY

On the basis of the assessment provided in the tables above, reasons for consent are as follows:

SUBDIVISION

- ***Rule 11.2.4 Discretionary Activities***

  h) Any subdivision which is not a permitted, controlled or restricted discretionary activity.

DWELLINGS

- ***Rule 4A 2.4 – Discretionary activities***

  a) Except where stated in the General Rules, any Permitted, Controlled or Restricted Discretionary Activity which fails to comply with any of the relevant Permitted Activity Conditions, or relevant requirements of Chapter 14 – General Rules.

EARTHWORKS

- ***Rule 4A 2.4 – Discretionary activities***

  b) Except where stated in the General Rules, any Permitted, Controlled or Restricted Discretionary Activity which fails to comply with any of the relevant Permitted Activity Conditions, or relevant requirements of Chapter 14 – General Rules.

TRANSPORT

- ***Rule 14A(ii)2.3. Discretionary Activities***

  c) Any Permitted, Controlled or Restricted Discretionary Activity which fails to comply with any of the relevant Permitted Activity Conditions.

SIGNAGE

- ***Rule 14B 2.4 Discretionary Activities***

  (a) In all activity areas, excluding the Petone Commercial Activity Area 1:

(i) Any Permitted, Controlled or Restricted Discretionary Activity which does not comply with any of the Permitted Activity Conditions.

7.2 PROPOSED DISTRICT PLAN CHANGE 43: RESIDENTIAL AND SUBURBAN MIXED USE

Proposed District Plan Change 43 ("the Plan Change") reviews the General Residential Activity Area provisions and proposes the introduction of two new activity areas, providing for medium density residential development and suburban mixed use in targeted areas. The plan change also proposes the introduction of a new Medium Density Design Guide and several consequential changes to related chapters of the District Plan.

The Plan Change was notified on 7 November 2017, with submissions closing on 9 March 2018. Subsequent opportunities to make further submissions closed on 5 September 2018. To date, no decision has been made in respect of this plan change.

Pursuant to Section 86B of the RMA, a rule in a proposed plan has legal effect only once a decision on submissions relating to the rule is made and publicly notified under clause 10(4) of Schedule 1. Sections 86B – G include exemptions to this. A decision on submissions has not yet been made and as such the plan provisions relevant to the application site do not have legal effect. Therefore, an assessment of the proposal against the proposed rules has not been provided in this application.

7.3 NATIONAL ENVIRONMENTAL STANDARD FOR ASSESSING AND MANAGING CONTAMINANTS IN SOIL TO PROTECT HUMAN HEALTH

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ('the NES') applies to land where there is evidence of contamination or if a Hazardous Activities and Industries ('HAIL') activity has occurred in the past.

The site is not identified on Greater Wellington Regional Council's SLUR register as being contaminated or potentially contaminated. Further, the Applicant has confirmed that, to the best of their knowledge, no previous uses of the site were HAIL activities. Additionally, there is no recorded evidence (on GWRC and Council files) that outlines the site is contaminated or potentially contaminated. Accordingly, the NES does not apply.

7.4 OVERALL STATUS OF THE APPLICATION

Overall, the proposal requires **Discretionary** activity resource consent. Pursuant to Section 104B of the Act, after considering the application, the Council –

a) may grant or refuse the application; and

b) if it grants the application, may impose conditions under section 108.

As Discretionary activity resource consent is sought, exercise of Councils discretion in considering potential environment effects is not restricted.

7.5 OTHER CONSENT REQUIREMENTS

No consents are required from Greater Wellington Regional Council in relation to this proposal.

8. S104 ASSESSMENT

Subject to Part 2 of the Act, when considering an application for resource consent in accordance with Section 104(1) of the Act, regard must be given to:

a) Any actual and potential effects on the environment of allowing the activity;

b) Any relevant provisions of a:

- *National Policy Statement*

- *New Zealand Coastal Policy Statement*
- *National Environmental Standard*
- *Regional Policy Statement or Proposed Regional Policy Statement*
- *Plan or proposed plan*

c) Any other matter relevant and reasonably necessary to determine the application

8.1 PART 2 – PURPOSE AND PRINCIPLES

The proposal meets the purpose and principles of the Act (Section 5), being the sustainable use and development of natural and physical resources. In particular:

- The proposal will provide residential housing on a site which is zoned for residential purposes.
- The proposal is not considered 'inappropriate' for the reasons identified in Section 8.2 below and the effects of the activity on the surrounding locality are considered less than minor;
- The integrated, masterplanned approach has enabled the efficient use of the site while still provided a range of housing.
- The quality of the environment and amenity values of the site and surrounding environment will be maintained;
- The proposal will enhance people's enjoyment of the area that will allow for social, cultural and economic wellbeing to be achieved whilst ensuring adverse effects on the environment will be appropriately avoided, remedied or mitigated.
- The development will meet the diverse needs of the community over time, and that minimises the use of resources creating an environmentally responsive and affordable outcome.
- Construction of the development will provide increased employment during the construction period.

Section 6 lists matters of national importance such as the protection of outstanding natural features, fauna and character and historic heritage. The proposal will not generate any adverse effects on any of these features.

Section 7 lists other matters the council must have particular regard to, including:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(f) Maintenance and enhancement of the quality of the environment:

The proposal is consistent with the relevant matters in Section 7 of the Act, in particular:

- The proposal represents an efficient use and development of natural and physical resources of a currently underutilised residentially zoned site; and,
- Future occupants of the dwellings will have an appropriate level of amenity.

With respect to Section 8 – The Treaty of Waitangi, the site is not noted as being within an area identified as significant natural, cultural or archaeological resource. The site is in the ownership of PNBST, whom through joint venture partnerships, have retained involvement in the delivery of this project.

8.2 ACTUAL AND POTENTIAL ADVERSE EFFECTS ON THE ENVIRONMENT

8.2.1 PERMITTED BASELINE ASSESSMENT

In terms of effects on the environment, Section 104(2) of the Act has established that the correct approach to defining those effects is by way of reference to those activities permitted by a plan. This forms part of the permitted baseline which has evolved through case law and defines the environment against which a proposed activity's degree of adverse effect is gauged. The permitted baseline comprises non-fanciful activities and their constituent effects that would be permitted as of right by the District Plan and the effects of activities enabled by an unimplemented consent.

Section 104(2) enables the consent authority to disregard an adverse effect of an activity on the environment if a plan permits an activity with that effect. In this respect, minor boundary adjustments are identified as a permitted subdivision provided that the permitted activity conditions for the activity can be met and no additional allotments are created. This is not considered a relevant permitted baseline for this application.

The District Plan also allows up to two dwellings and associated accessory buildings on the application site as a permitted activity, provided they comply with the relevant bulk and location standards. Alternatively, a residential facility accommodating 8 – 10 persons could be established on site provided the facility comply with the relevant bulk and location standards. The assessment provided in Section 8.2.3 below addresses only those effects over and above what could be anticipated via the establishment of permitted activities on the site i.e. two dwellings or a residential facility on the site.

With respect to earthworks, as a permitted activity the District Plan permits the disturbance of 50m^3 of earthworks per allotment and a maximum cut/fill height of 1.2m. The maximum cut and fill heights are considered relevant baselines for the assessment of earthworks in this application.

8.2.2 EXISTING ENVIRONMENT AND EXISTING USE RIGHTS

The existing environment comprises of those activities that are lawfully established on the site. The existing environment is described in detail in Section 3 above.

8.2.3 EFFECTS ON THE ENVIRONMENT

Having considered the nature of the proposal, and taking into account of Council's assessment matters for discretionary activities and the matters that are required to be addressed under Schedule 4 of the Act, the following actual and potential effects warrant consideration:

- Positive effects;
- Residential character and amenity effects;
- Privacy and dominance effects;
- Access and parking effects;
- Servicing effects;
- Construction and earthworks effects;
- Natural features and topography effects;
- Historical and cultural effects; and,
- Natural hazard effects.

Commensurate with the scale of the proposal, each matter is addressed below.

POSITIVE EFFECTS

In addition to adverse effects, the Act allows consideration of the positive effects of a proposal. The positive effects of the proposed development include:

- Utilisation of a residential zoned site that has large portions being vacant without buildings;
- Providing a balanced and affordable response to the housing needs of community via the provision of a range of new allotments and new dwellings with differing typologies to offer a wide spread to a currently constrained housing market;
- Providing a development on a brownfield site within an established residential area on a residentially zoned site that will positively contribute to the surrounding residential environment and that will complement other uses of the site and will seek to enhance the vitality and vibrancy of the Wainuiomata town centre; and,
- The creation of jobs and local investment through the construction of the development and through the provision of additional housing stock and new residents to the area.

RESIDENTIAL CHARACTER AND AMENITY EFFECTS

The Act defines amenity values as *'those natural or physical qualities and characteristics of any area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes'*.

In assessing the potential adverse residential character and amenity effects of a proposal it is important to recognise that, while the application site is flanked by a vegetated hillside and that a number of commercial buildings within the site will remain, the character of the existing surrounding residential environment. In this respect, the surrounding area comprises of single storey dwellings on allotments ranging in are between 600m^2 – 800m^2 in area. It is noted however that not all residential sites within the surrounding environment maintain a 400m^2 net site area as anticipated in the District Plan.

It is considered that potential adverse residential character and amenity effects that may arise from the proposed development are less than minor for the following reasons:

- The proposed dwellings will be residential in nature and appearance which would be in keeping with the existing character of the surrounding environment and the environment within the development site established in Stage 1.
- While the proposed lots and dwellings are generally of a higher density than those surrounding residential sites, the allotments are generally consistent with the residential character of the area. The proposal will predominantly contain standalone dwellings on individual lots accommodating single storey units in keeping with the character of the residential development anticipated by the District Plan. As the development has been developed comprehensively, all proposed allotments are of a sufficient size and shape to enable their intended residential use while maintaining the amenity values and character of the surrounding locality.
- While a number of proposed dwellings will represent non-compliances with the building length and site coverage rules of the District Plan these sites are considered to be well separated from nearby residential sites whereby the effects of such non-compliances will be internal to the site. On this matter, the perceptible effects of such non-compliances are considered to be mitigated in part by the single storey nature of the proposed dwellings (compared to the building bulk of a two-storey dwelling) and will also be mitigated through proposed landscaping across the site and within the residential allotments.
- Residential allotments will have tailored landscaping plans whereby proposed planting and landscape treatments will aid in softening and breaking up building bulk. This application includes an example of the on-lot landscaping that will be provided as a condition of consent.

Overall, the potential adverse residential character and amenity effects associated with subdivision layout, allotment size and orientation and with building bulk and dominance of the proposal will be sufficiently mitigated by the degree of the breaches and the distance of separation from the surrounding residential properties. All proposed dwellings on site

will comply with the building height and building length permitted activity conditions as well as the yard and recession plane requirements of the District Plan when measured from all external site boundaries.

Medium Density Design Guide

The District Plan seeks to manage the design of medium density development through the Medium Density Residential Design Guide. It is however acknowledged that the District Plan does not seek to control the material design of dwellings in the General Residential Activity area beyond the bulk and location rules and the Design Guide.

The subdivision layout, built form and density of the development are appropriate to its context in that the proposal will fit well within the surrounding development as well as the development consented in Stage 1 of the development. The unique characteristics of the application sites setting, and the ability for the site to absorb change, in addition to the design of the proposed scheme will ensure the proposal will have an acceptable effect in terms of residential character and amenity.

It is considered that the proposal generally meets the criteria of the Medium Density Design Guide for reasons that include:

- All dwellings are intended to face onto internal streets and private access lots.
- Garage and carpads have been incorporated into the design of individual dwellings such that vehicles and garages will not dominate the streetscape.
- There are designated common areas in addition to those associated with each dwelling that can help provide an integrated community.
- Carparking has been appropriately considered but will not dominate the streetscape.
- Further consideration on fencing will be provided as a condition of consent. Final landscaping and fencing details will provide and appropriate level of privacy between neighbours and between existing residents of adjacent allotments.
- Site facilities such as storage of rubbish bins can be accommodated on the individual yards or garages until collection day and washing lines can be accommodated on individual sites, appropriate to the needs of residents.

Internal Residential Amenity Effects

With respect to internal amenity, it is recognised that the site has been designed comprehensively i.e. the design of the housing typologies and the subdivision pattern have been integrated. This has been achieved through an understanding of how internal and external spaces relate to each other, how each unit relates to the other units and how the whole development interfaces with the immediate context.

High levels of internal residential amenity will be created given the following design considerations:

- Future development on the site will be guided by the design guidelines that seek to create an appropriate level of on-site amenity;
- A variety of house typologies have been development to provide choice and a variety of roof forms and materials on these typologies provide individuality to each of the sites;
- A high proportion of living room windows face the street in order to provide activation and surveillance;
- Providing a sufficient level of surveillance of the street space by locating living spaces on the front elevation and by providing some secondary outdoor living spaces to the front of the dwellings;
- Specimen trees that will be planted in the road reserve to ‘break-up’ the streetscape and provide additional amenity;

- Careful consideration has been given to internal site fencing so as to ensure adequate levels of privacy.

On the basis of the above, high levels of internal amenity will be achieved. Accordingly, negligible potential adverse internal amenity effects will arise.

Proximity to Non-Residential Services and Public Transport

The District Plan requires additional assessment matters for the development of 3 or more dwellings on sites located outside of the Medium Density activity area; this includes the sites proximity to non-residential services and public transport. I note the site is approximately 390m from the Suburban Commercial activity area which accommodates local service retail activities. The site is also located in close proximity to bus services, education activities and recreation areas. Overall it is considered that the application site to be located within close proximity, or within acceptable traveling distance, to such activities and services.

PRIVACY AND DOMINANCE EFFECTS

Development within an established predominantly residential environment and on a site where existing non-residential land uses are intended on remaining has the potential to generate adverse privacy and overlooking effects on adjacent existing residential properties. It is considered that potential adverse privacy effects will be less than minor given for the following reasons:

- All of the proposed units are single storey and will comply with the minimum rear yard standards so potential privacy and dominance effects are considered negligible; and,

- Except for the typologies on proposed lots 20 and 28, the dwellings proposed in this application all comply with the yard, maximum height and height recession plane standards of the District Plan.

For the reasons outlined above, the potential adverse privacy and overlooking effects of the proposal will be less than minor.

ACCESS AND PARKING EFFECTS

Traffic Generation

The proposal will generate traffic and requires the provision of parking spaces and internal roading. Therefore, there is the potential to generate adverse effects in relation to traffic generation and access. The proposed allotments will gain access via a new public road accessed via a new road connection from Nelson Crescent. The public road and access to the allotments has been designed to comply with the relevant engineering standards of the District Plan.

Due to challenges in topography, jointly owned access lots have been proposed to provide legal access to a limited number of allotments from the proposed legal roads. It is expected that traffic speeds and volumes will be low along these access lots. A residents association will be set up to manage, among other things, the maintenance of the access lots. This will ensure that these private roads will be maintained to an acceptable and safe standard.

On the basis of the above it is considered that potential adverse access related effects will be less than minor.

Parking

The District Plan requires that two vehicle parking space be provided on-site per residential activity or where three or units on one site are proposed, one vehicle parking space. The proposed vacant allotments are of a sufficient size to likely accommodate two vehicle parking spaces. For the smaller allotments, one parking space will be provided. As a minimum of one vehicle parking space will be provided on each allotment, the proposal is able to comply with the parking standards of the District Plan. Accordingly, any potential parking effects are considered negligible.

SERVICING EFFECTS

As outlined in this application, and as illustrated on the application drawings, separate water supply, wastewater, stormwater, telecommunications and electricity connections will be provided to each of the proposed allotments.

Site and wider area constraints regarding stormwater disposal have been adequately mitigating via the inclusion of a stormwater detention basin on the site to ensure hydraulic neutrality can be achieved with off-site post development peak flows limited to match pre-development flows. The addendum to the stormwater strategy concludes that –

> *"The stormwater strategy presented above demonstrates that the stormwater generated by Stage Two and Three of the proposed development can be effectively managed so that the impact on the receiving catchment is negligible. In particular the strategy demonstrates that:*
>
> - *Overland and flood paths can be managed without impacting either the proposed development or existing residential catchment.*
> - *Hydraulic neutrality can be achieved with off-site post development peak flows limited to match pre-development flows, whilst taking into account the restrictions associated with the exiting network, and that the additional stormwater volumes generated can be managed on site."*

Further, the Applicant confirms acceptance with the imposition of consent conditions requiring that new services comply with Council's Code of Practice for Land Development 2001. Subject to adherence to the relevant standards of this Code, and imposition of fair and reasonable conditions related to the servicing of the site, it is considered that potential adverse servicing effects will be less than minor.

EARTHWORKS AND CONSTRUCTION EFFECTS

There will be temporary effects occurring as a result of the earthworks and construction required for the installation of services, creation of access, development of suitable building platforms and construction of buildings. Temporary site development works have the potential to generate adverse effects on the wider environment with respect to erosion and sediment discharges, noise, dust and construction traffic.

While earthworks and construction works are largely anticipated in the District Plan to enable residential development through the residential zoning of the site, a number of measures will be employed on the site to ensure such effects are mitigated to an appropriate level. This includes managing the site in accordance with an approved Earthworks and Construction Management Plan ('ECMP'). This plan will be drafted and submitted to Council for certification prior to the commencement of works. The ECMP will address the following:

- Construction hours
- Construction noise
- Contraction traffic management
- Erosion and sediment control
- Dust control
- Complaint management

Subject to the imposition of a consent condition requiring that a ECMP be submitted to Council, it is considered that potential adverse earthworks and construction effects will be temporary in nature and adequately mitigated to ensure they will temporary in nature and acceptable.

NATURAL FEATURES AND TOPOGRAPHY EFFECTS

The proposed earthworks will be undertaken on a brownfield site that has been subject to previous modification and is, except along its boundaries, relatively flat in terms of topography. No significant vegetation is located on the application site. The proposed earthworks will not result in any significant cuts or batters and the finished level of the site will be generally consistent with the existing topography of the site. While the finished levels include both batters and retaining walls which will result in a number of tiered sections across the wider site, the finished levels to be generally consistent with the existing contours of the site. All exposed surfaces will be covered following completion of works either by the proposed access way, dwelling foundations, retaining or landscaping.

Also, it is noted that the site does not contain any watercourses over 3m in width which would qualify for esplanade strips or reserves.

Overall, the potential effects on natural features or effects associated with the changes in the topography of the site are considered negligible.

HISTORICAL OR CULTURAL EFFECTS

The application site is not identified as a site of natural, cultural or historical significance within the District Plan. The iwi has however identified that the natural spring in the south eastern portion of the site holds cultural value. Accordingly, the spring is to be held in an allotment and will form a reserve area for the enjoyment of future residents of the site.

Accordingly, potential adverse historical or cultural effects will be less than minor.

NATURAL HAZARD EFFECTS

The site is not identified within the Wellington Fault Special Study Area, is not identified as a reported inundation address or area under investigation within Council's flooding database or as a site containing a recorded landslip within Council's Landslip database.

The proposal has, made adequate provision to mitigate potential adverse flood hazard effects. The proposed roads will be designed to contain existing flood flows within the road reserve as confirmed in the calculations provided in Attachment C of the Stormwater Strategy. The strategy also notes –

- *Overland and flood paths can be managed without impacting either the proposed development or existing residential catchment,*
- *Hydraulic neutrality can be achieved with off-site post development peak flows limited to match pre-development flows, whilst taking into account the restrictions associated with the existing network, and that the additional stormwater volumes generated can be managed on site.*

On this basis it is considered that the proposal manages stormwater and potential flood risk adequately. In addition, like the Stage 1 application, the Applicant confirms acceptance that final floor levels of dwellings will be situated above any modelled flood extent of Black Creeks. Overall, it is considered that, subject to conditions, the potential natural hazard effects of the proposal will be acceptable.

GEOTECHNICAL EFFECTS

A geotechnical report provided in **Appendix Seven** of this application acknowledges that the site is suitable for residential development providing that certain recommendations (such as engineer designed foundations) are adhered to. The Applicant confirms acceptance with these recommendations and has recommended a consent condition to reflect these recommendations (refer section 6.3.5 above). On this basis, the proposal will not result in adverse land stability, subsidence or other geotechnical effects.

REVERSE SENSITIVITY EFFECTS

A number of established uses are located to the rear of the application site (to the far east). These uses include non-residential activities such as community rooms and Kohanga Reo which has potential to cause reserve sensitivity effects (in terms of noise) upon the new residential dwellings/allotments. While the site layout has been sympathetic in its design the applicant has proffered a condition to enter into a private agreement regarding a 'no complaints' covenant in order to mitigate potential reverse sensitivity effects. On this basis any potential reverse sensitivity effects will be less than minor.

ADVERSE EFFECTS ASSESSMENT SUMMARY

Overall, the potential adverse effects of the proposal will be less than minor when compared against the relevant permitted baseline for assessment. Further, the proposal results in a number of tangible positive effects.

8.3 NATIONAL POLICY STATEMENTS

The National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) came into effect on 1 December 2016 and sets out the objectives and policies for providing development capacity. The NPS-UDC recognises the national significance of well-functioning urban environments, with particular focus on ensuring that local authorities enable urban environmental to grow and change in response to the changing needs of the communities and future generation.

The National Policy Statement for Urban Development Capacity (NPS-UDC) directs consent authorities to consider if there is sufficient development to meet current and future demand. In addition to the applicant's assessment, the NPS-UDC is considered to be relevant for the assessment and determination of this application. The proposal is considered to be consistent with the objectives and policies relating to the outcomes for planning decisions outlined in the NPS-UDC (including PA1 – PA4) as it will allow for the creation of new residential dwellings and associated serviced lots from currently underutilised land which is able to be adequately serviced by council service network, thereby increasing the overall stock of housing within an established residential area. The proposal is considered to be an efficient use of land and will provide a variety of dwelling typologies in a unique location.

Ultimately, the proposal seeks to enable the construction of 100 dwellings and will enable to further construction of 27 dwellings on the proposed allotments and is therefore inherently consistent with the NPS-UDC.

8.4 NATIONAL ENVIRONMENTAL STANDARDS

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ('the NES') applies to land where there is evidence of contamination or if a Hazardous Activities and Industries ('HAIL') activity has occurred in the past.

As previously noted, the NES does not apply to this application.

There are no other National Environmental Standards relevant to this application.

8.5 CITY OF LOWER HUTT DISTRICT PLAN OBJECTIVES AND POLICIES

An assessment of the proposal against the relevant objectives and policies of the District Plan is provided in the following sections.

8.5.1 RESIDENTIAL CHAPTER OBJECTIVES AND POLICIES

4A.1.1.1 Residential Character and Amenity Values

Objective: *To maintain and enhance the amenity values and residential character of the General Residential Activity Area of the City.*

Policy

a) That opportunity be provided for a diversity of residential activities.

b) To ensure residential amenity values are retained, protected and enhanced through the establishment of a net site area per dwelling house.

c) That adverse effects arising from noise, dust, glare, light spill and odour be managed.

d) That vegetation and trees which add to the particular amenity values of the area be retained where practicable.

e) Where the clearance of vegetation be management to avoid, remedy or mitigate any adverse effects on the intrinsic values of ecosystems.

The proposal is consistent with the above objective and policies for the following reasons:

- The units are all single storey detached and semi-detached typologies with front yard setbacks and roof forms generally consistent with the wider neighbourhood, albeit some at a smaller scale.

- The proposal will provide diversity of residential activities by providing medium density development and elder persons housing that is within walking distance to the Wainuiomata centre and other surrounding amenities.

- While the majority of the proposed allotments do not comply with the minimum allotment size requirement, residential amenity will be retained and enhanced via, utilising typologies smaller than typical standard dwellings and the utilisation of of typologies that seek to activate front and rear yard outdoor spaces and take advantage of solar gain.

- To the extent practical existing large trees and vegetation on the site is proposed to be retained. The majority of vegetation within stages two and three is located within proposed balance lot 406. It is not intended that this vegetation be cleared.

- As concluded in Section 7.2.3 of this application, the residential amenity values of the surrounding environment will be enhanced.

4A.1.2.1 Building Height, Scale, Intensity and Location

Objective: *To avoid, remedy or mitigate adverse effects caused by building height, intensity and location on the amenity values of adjacent residential sites and the residential character of the surrounding residential area.*

Policy

a) To establish a minimum net site area and maximum site coverage requirement to ensure medium density development is achieved.

b) To establish minimum net site area and maximum site coverage to ensure opportunity is provided for higher density residential development where appropriate, without affecting adversely the amenity values

c) To ensure all new development is of a height and scale, which is compatible with surrounding residential development.

d) To ensure a progressive reduction in height of buildings the closer they are located to a site boundary, to maintain adequate daylight and sunlight to adjoining properties

e) To manage the siting of all buildings so as to minimise detraction from the character and visual attractiveness of the surrounding residential activity area

f) To manage the siting of all buildings so as to minimise the detraction from the amenities of adjoining properties.

g) To establish a minimum permeable surface area to assist with the sustainable management of stormwater.

h) That where practicable, the siting of accessory buildings be managed to maintain safety and visibility during manoeuvres.

i) Where a certificate of title has been issued for a site prior to 5 December 1995 or where a site has been created by a staged development whether under a stage unit plan or cross lease plan lodged with the District Land Registrar and where part of the development has been completed prior to 5 December 1995, it is recognised that it is reasonable to permit the erection of buildings/structures (as contemplated when the title was issued or plan lodged) even though the maximum site coverage may exceed that set out in 4A 2.1.1(e). Under such circumstances the scale, intensity, visual attractiveness of buildings and/or structures as well as the adverse effects on the amenity values of adjoining properties, and the streetscape be taken into account in assessing the suitability of the development.

j) To ensure that the developments are in general accordance with the Design Guide for Medium Density Housing (Appendix 19) to control other aspects of design, such as quality of onsite amenity, integration of buildings and landscaping in respect to open space and compatibility with surrounding development patterns and low environmental impact.

k) To establish specific standards for maximum height, maximum site coverage, minimum setback and recession planes, building frontages and corner sites within specific areas of the Tertiary Education Precinct to recognise the existing scale and intensity of the built development in the Precinct and to avoid, remedy or mitigate adverse effects on the amenity values of abutting residential properties and the streetscape.

The proposal is consistent with the above objectives and policies for the reasons outlined in the policy assessment above and additionally:

- Yard infringements are witnessed only on allotments that are internal to the site i.e. not adjoining external site boundaries.
- The height of the buildings will maintain adequate privacy, daylight and sunlight to adjoining properties.
- Developing the site comprehensively alongside the drafting design guidelines for the entire site development seeks to ensure that adequate levels of on-site amenity are created, and the amenity of the wider residential environment is maintained.
- The proposed housing typologies have been architecturally designed and all have indoor living spaces which connect with private gardens. The siting of the units ensures good orientation and solar gain for living spaces.
- The siting of the typologies does not detract from the character and visual attractiveness of the surrounding residential activity area.
- Stormwater will be adequately managed to ensure hydraulic neutrality is achieved.

8.5.2 SUBDIVISION CHAPTER OBJECTIVES AND POLICIES

11.1.1 Allotment Standards

Objective: *To ensure that land which is subdivided can be used for the proposed use or development.*

Policy

a) To ensure that allotments have minimum design standards such as, minimum size, shape and frontage, which are suitable for the proposed use or development.

The proposal is consistent with the above objective and policy as, the housing typologies have been developed to suit the proposed allotments and therefore, the allotments are suitable for their intended use and development.

11.1.2. Engineering Standards

Objective: *To ensure that utilities provided to service the subdivision protect the environment and that there are no adverse effects on the health and safety of residents and occupiers.*

Policy

a) To ensure that utilities provided comply with specified performance standards relating to such matters as access, street lighting, stormwater, water supply, wastewater, gas, telephone, electricity and earthworks.

The proposal is consistent with the above objective and policy as all allotments will be adequately serviced with stormwater, water supply, wastewater, gas, telephone and electricity. All allotments have physical and legal access to a public road and have pedestrian access.

11.1.3 Natural Hazards

Objective: *To ensure that land subject to natural hazards is subdivided in a manner that the adverse effects are avoided, remedied or mitigated.*

Policy

b) Subdivision of land subject to flooding is discouraged as this can lead to greater intensity of use and development and have adverse effects on the environment.

c) Subdivision of land should be managed to ensure that within each allotment there is a suitable building platform so that buildings and associated structures will not be adversely affected by slope instability, including the deposition of debris.

The proposal is consistent with the above objective and policies as the proposal has made adequate provision to mitigate potential adverse flood hazard effects. Accommodating existing flood flows within the proposed road reserves will ensure that the proposal will not pose a risk to people or displace flood flows which worsen flooding in the area. Further, the geotechnical report confirms that the site is suitable for residential development.

8.5.3 EARTHWORKS CHAPTER OBJECTIVES AND POLICIES

Natural Character

Objective*: To ensure that earthworks are designed to maintain the natural features that contribute to the City's landscape*

Policy

a) To ensure that earthworks are designed to be sympathetic to the natural topography.

b) To protect significant escarpments, steep hillside areas, and the coastal area by ensuring that earthworks are designed to retain the existing topography, protect natural features, and prevent erosion and slips.

The proposal is consistent with the above objective and policies as the site is already highly modified. The proposed ground level alteration will comply with District Plan height and depth standards and once the earthworks have been completed, any changes to the topography of the area resulting from the proposal will not be particularly discernible within the wider environment or from adjacent properties.

8.5.4 MEDIUM DENSITY RESIDENTIAL DESIGN GUIDE

It is considered that the proposal generally meets the criteria of the Medium Density Design Guide for reasons that include:

- All dwellings are intended to face onto internal streets or communal private access lots.
- Lots along all external boundaries are set up a 'back to back' arrangement where privacy of existing properties is achieved. The presence of the existing drainage channel along the western boundary will likely ensure rear yard setbacks will be complied with.
- Some typologies have bedrooms facing the street in order to maximise indoor-outdoor flow with a westerly orientation. These typologies are balanced/dispersed with those that have dual aspect living spaces such that there is always surveillance to the street.
- Site layout recognises the intention to promote social interaction while still maintaining the option of privacy.
- There is a good range of elevation styles which helps to identify the different units and provide visual interest.

- All living rooms within dwellings are north or west facing, enabling good solar gain.
- Garage and carpads have been incorporated into the design of individual dwellings such that vehicles and garages will not dominate the streetscape.
- There are designated common areas in addition to those associated with each dwelling that can help provide an integrated community.
- Carparking has been appropriately considered but will not dominate the streetscape.
- Further consideration on fencing will be provided as a condition of consent. Final landscaping and fencing details will provide and appropriate level of privacy between neighbours and between existing residents of adjacent allotments.
- Site facilities such as storage of rubbish bins can be accommodated on the individual yards or garages until collection day and washing lines can be accommodated on individual sites, appropriate to the needs of residents.

8.6 PROPOSED PLAN CHANGE 43 – RESIDENTIAL AND SUBURBAN MIXED USE OBJECTIVIES AND POLICIES

Proposed District Plan Change 43 ("the Plan Change") reviews the General Residential Activity Area provisions and proposes the introduction of two new activity areas, providing for medium density residential development and suburban mixed use in targeted areas. The plan change also proposes the introduction of a new Medium Density Design Guide and several consequential changes to related chapters of the District Plan.

The Plan Change was notified on 7 November 2017, with submissions closing on 9 March 2018. Subsequent opportunities to make further submissions closed on 5 September 2018. To date, no decision has been made in respect of this plan change.

Pursuant to Section 86B of the RMA, a rule in a proposed plan has legal effect only once a decision on submissions relating to the rule is made and publicly notified under clause 10(4) of Schedule 1. Sections 86B – G include exemptions to this. A decision on submissions has not yet been made and as such the plan provisions relevant to the application site do not have legal effect. Therefore, an assessment of the proposal against the proposed rules has not been provided in this application.

In this instance, the submissions period has not yet closed. Accordingly, no weight shall be afforded to the objectives and policies of the Plan Change. Irrespective, an assessment of the proposal against the relevant objectives and policies of the Plan Change is provided in the following sections.

8.6.1 CHAPTER 4A GENERAL RESIDENTIAL ACTIVITY AREA

Objective 4A 2.2 – *Housing capacity and variety are increased.*

Objective 4A 2.3 *Built development is consistent with the planned low to medium density built environment and is compatible with the amenity levels associated with low to medium density residential development.*

Objective 4A 2.4 *Built development provides high quality on-site amenity for residents as well as high quality residential amenity for adjoining properties and the street.*

Objective 4A 2.5 *Built development is adequately serviced by network infrastructure or addresses any network infrastructure constraints on the site.*

Objective 4A 2.6 *Built development is located and designed to manage significant risk from natural hazards.*

Policy 4A 3.1 *Provide for residential activities and those non-residential activities that support the community's social, economic and cultural well-being and manage any adverse effects on residential amenity.*

Policy 4A 3.2 *Enable a diverse range of housing types and densities.*

Policy 4A 3.3 *Enable the efficient use of larger sites and combined sites by providing for comprehensive residential developments.*

Policy 4A 3.4 *Manage the effects of built development on adjoining sites and the streetscape and minimise visual dominance on adjoining sites by controlling height, bulk and form of development and requiring sufficient setbacks.*

Policy 4A 3.5 *Require built development to maintain a reasonable level of privacy and sunlight access for adjoining sites.*

Policy 4A 3.6 *Require built development to provide useable and accessible outdoor living space to provide for outdoor amenity.*

Policy 4A 3.7 *Encourage high quality built development to contribute to attractive and safe streets and public open spaces by providing for buildings that address the streets and public open spaces, minimise visual dominance and encourage passive surveillance.*

Policy 4A 3.9 *Require a minimum area of permeable surface in order to assist with the management of stormwater runoff created by development.*

Policy 4A 3.10 *Require comprehensive residential development to be stormwater neutral.*

Policy 4A 3.11 *Manage medium density residential development in areas of high natural hazard risk.*

The proposal is consistent with the relevant objectives and policies of Plan Change 43 for the following reasons:

- The proposal will result in an increase in housing capacity that will in turn add an additional housing type / product to the market. The 'smaller lot, smaller house' product introduced in this application provides a new offering to the Wainuiomata housing market that overwhelmingly consists of standard to large 3 to 4 bedroom houses on 500m^2 – 600m^2 lots.
- The development will support the community's social, economic and cultural well-being and the development has been designed so as to ensure potential adverse effects on residential amenity will be less than minor.
- The brownfield site will be utilised efficiently via the mechanism of a comprehensively designed development that gives due consideration to buildings and activities to be retained.
- Residential development along external site boundaries complies with height, setback, sunlight access and site coverage requirements so as to minimise visual dominance and reduce potential privacy, dominance and overlooking effects.
- The development will ensure a reasonable level of privacy and sunlight access for adjoining sites is maintained.
- The stormwater design measures have been designed so as to ensure post-development flows do not exceed pre-development flows (i.e. the development will be stormwater neutral).

8.7 OTHER MATTERS

8.7.1 HUTT CITY URBAN GROWTH STRATEGY 2012- 2032

The Hutt City Urban Growth Strategy 2012-203 ('the Strategy') seeks to facilitate growth in the District and address the growth and development key area of focus as outlined in the 2012-22 Long Term Plan. The strategy sets out a new approach to fostering development in the city and includes new ideas, proposals and goals for at least doubling the current rate of housing growth in the district.

With respect to intensification, the strategy notes that Council propose to ensure that all medium and high-density developments are (refer page 25):

- Subject to design guides.
- Go hand-in-hand with improvements to public open space to compensate for the loss of private open space.

The proposal is deemed to be largely consistent with the medium density design guide as outlined in the Urban Design Statement attached in **Appendix Three.**

9. S106 ASSESSMENT

Pursuant to Section 106 of the Act (as amended through the Resource Legislation Amendment Act 2017), a consent authority may refuse to grant a subdivision consent, or may grant a subdivision consent subject to conditions, if it considers that –

(a) There is a significant risk from natural hazards; or

(b) [Repealed]

(c) Sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision.

For the purposes of subsection (1)(a) above, Section(1)(A) outlines that, an assessment of the risk from natural hazards requires a combined assessment of –

(a) the likelihood of natural hazards occurring (whether individually or in combination); and

(b) the material damage to land in respect of which the consent is sought, other land, or structures that would result from natural hazards; and

(c) any likely subsequent use of the land in respect of which the consent is sought that would accelerate, worsen, or result in material damage of the kind referred to in paragraph (b).

A Geotechnical Report was prepared by Coffey and is attached in **Appendix Seven** of this application. In summary, the report confirms that the site is suitable for residential development subject to a number of recommendations being adhered to. The Applicant confirms acceptance with conditions of consent requiring that the recommendations are taken into account. A condition requiring further assessment is provided in Section 6.3.5 of this application.

Regarding access, all allotments have legal and physical access via the proposed new public roads and access allotments.

In summary, there are no reasons pursuant to Section 106 of the Act as to why consent cannot be granted. Appropriate conditions applied under s108 will be imposed relative to mitigating adverse effects associated with earthworks, potential flooding and engineering / servicing.

10. NOTIFICATION ASSESSMENT

Changes made as part of the Resource Legislation Amendment Act (RLAA17), that came into effect on 16 October 2017 include changes and additions to the notification clauses in the RMA. An assessment of the proposal against the newly revised notification clauses is provided in the following sections.

10.1 PUBLIC NOTIFICATION

Section 95A sets out the process a consent authority must follow, in the order given, to determine whether to publicly notify an application for a resource consent. An assessment of the proposal against the provisions set out in Section 95A is provided below.

10.1.1 STEP 1: MANDATORY PUBLIC NOTIFICATION IN CERTAIN CIRCUMSTANCES

If the application meets one of the criteria set out in Section 95A(3) (refer below) a consent authority must notify an application -

(a) The applicant has requested that the application by publicly notified

(b) Public notification is required under Section 95C[1]

(c) The application is made jointly with an application to exchange recreation reserve land under Section 15AA of the Reserves Act 1977.

The proposal does not meet any of the criteria above and therefore does not require public notification under 'Step 1'.

10.1.2 STEP 2: IF NOT REQUIRED BY STEP 1, PUBLIC NOTIFICATION PRECLUDED IN CERTAIN CIRCUMSTANCES

The criteria set out in Section 95A(5) precludes public notification if -

(a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification:

(b) the application is for a resource consent for 1 or more of the following, but no other, activities:

(i) a controlled activity:

(ii) a restricted discretionary or discretionary activity, but only if the activity is a subdivision of land or a residential activity:

(iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity:

*(iv) a prescribed activity (*see *section 360H(1)(a)(i)).*

Discretionary Activity consents are sought in this application for subdivision and residential activities / buildings. Accordingly, notification is precluded under 'Step 2' and an assessment is not required under 'Step 3'.

10.1.3 STEP 4: PUBLIC NOTIFICATION IN SPECIAL CIRCUMSTANCES

Pursuant to Section 95A(9) of the Act, the consent authority must determine whether special circumstances exit in relation to the application that warrant the application being publicly notified. There is nothing special, unusual or out of the ordinary with the activities proposed in this application that would warrant public notification.

10.1.4 PUBLIC NOTIFICATION SUMMARY

Based on the assessment above, public notification of the application is not required.

10.2 LIMITED NOTIFICATION

Section 95B sets out the process a consent authority must follow, in the order given, to determine whether to give limited notification of an application, if the application is not notified under Section 95A. The process is set out below.

10.2.1 STEP 1: CERTAIN AFFECTED GROUPS AND AFFECTED PERSONS MUST BE NOTIFIED.

Pursuant to Section 95B(2), the consent authority must determine whether there are any affected protected customary rights groups or affected customary marine title groups. In determining this Section 95B(3) specifies that in assessing whether such groups are affected, the consent authority must determine -

[1] Section 95C of the Act relates to an applicant not providing further information by the deadline concerned or refusing to provide the requested information.

(a) whether the proposed activity is on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11; and

(b) whether the person to whom the statutory acknowledgement is made is an affected person under section 95E.

The above criteria is not relevant and therefore limited notification to the groups outlined in Section 95B(2) is not required.

10.2.2 STEP 2: IF NOT REQUIRED BY STEP 1, LIMITED NOTIFICATION PRECLUDED IN CERTAIN CIRCUMSTANCES

The criteria set out in Section 95B(6) precludes public notification if -

(a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:

(b) the application is for a resource consent for either or both of the following, but no other, activities:

(i) a controlled activity that requires consent under a district plan (other than a subdivision of land):

*(ii) a prescribed activity (*see *section 360H(1)(a)(ii)).*

The application does not meet the criteria and therefore limited notification is not precluded under 'Step 2'.

10.2.3 STEP 3: IF NOT PRECLUDED BY STEP 2, CERTAIN OTHER AFFECTED PERSONS MUST BE NOTIFIED

Pursuant to Section 95B(7) the consent authority must determine, whether, in accordance with Section 95E, the following persons are affected persons –

(a) in the case of a boundary activity, an owner of an allotment with an infringed boundary; and

(b) in the case of any activity prescribed under section 360H(1)(b), a prescribed person in respect of the proposed activity.

And in the case of any other activity, pursuant to Section 95B(8), the consent authority must determine, whether a person is an affected person in accordance with Section 95E.

Pursuant to Section 95E, for the purpose of giving limited notification of an application for a resource consent for an activity to a person under section 95B(4) and (9), a person is an affected person if the consent authority decides that the activities adverse effects on the person are minor or more than minor (but are not less than minor).

In assessing an activities adverse effects on a person for the purpose of this section, pursuant to Section 95E(2) –

(a) may disregard an adverse effect of the activity on the person if a rule or a national environmental standard permits an activity with that effect; and

(b) must, if the activity is a controlled activity or a restricted discretionary activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and

(c) must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11.

None of the above criteria apply to this application.

Pursuant to Section 95(3) a person is not an affected person in relation to an application for a resource consent for an activity if –

(a) the person has given, and not withdrawn, approval for the proposed activity in a written notice received by the consent authority before the authority has decided whether there are any affected persons; or

(b) the consent authority is satisfied that it is unreasonable in the circumstances for the applicant to seek the person's written approval.

No written approvals have been obtained for this application however it is noted that the owners of Lots 28 – 39 DP 21094 are the owners of the application site and therefore, by virtue of ownership, written approval is deemed granted by the owners of these allotments.

Potential adverse effects on adjacent properties are considered to be less than minor for the reasons outlined in Section 8.2.3 and the additional assessment / reasons provided in the following sections.

GENERAL

- For proposed allotments less than 400m^2 specific house designs have been provided. Therefore, the allotments are of a sufficient size and shape to achieve their intended use. While typologies vary, it is considered that nominated typologies can be suitably accommodated on each future allotment. It is acknowledged that the District Plan provides for 400m^2 allotments via a controlled activity subdivision (which would have to be granted by the Council) and associated compliant dwellings. While it is acknowledged that such development could not be considered to form part of the permitted baseline, it does demonstrate development at a density and scale that the District Plan foresees in the future.

- Given a number of site specific factors including size, orientation, topography (as it relates to adjacent elevated residential properties and the large bush block) and boundary interfaces and conditions including the presence of a large drain along the western boundary (that significantly limits the ability to build close to this boundary), the application site has the ability to absorb development higher than that anticipated in the District Plan without resultant privacy, dominance or residential character and amenity effects. In addition to this, the subdivision layout has been designed so as to concentrate density internal to the site so as to mitigate dominance, shading and overlooking effects.

- The site is not identified within the Wellington Fault Special Study Area, is not identified as a reported inundation address or area under investigation within Council's flooding database or as a site containing a recorded landslip within Council's Landslip database.

- Construction effects associated with the proposal are considered to be temporary in nature. A condition is proffered in this application relating to the development of a Construction Management Plan in order to mitigate temporary construction effects. Any potential effects associated with the construction phase will be managed appropriately and will be less than minor.

- The proposed earthworks for the development will be covered by buildings or sealed whereby there will be no permanently exposed areas. The applicant has noted that sediment control measures will be installed on-site for the duration of works. Therefore, any adverse visual effects from the earthworks will be short-term only and less than minor. Temporary effects associated with earthworks will also be appropriately managed through

PROPERTIES ADJOINING EASTERN BOUNDARY (3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23 ISABEL GROVE)

Potential adverse effects on these properties are considered less than minor for the following reasons:

- While some of the proposed allotments adjoining these properties are less than 400m^2 in area, given that the proposed allotments are situated downhill of the existing properties, no adverse visual, dominance, shading or privacy effects will occur.

- Due to topographical constraints, it is highly unlikely that development will be built towards the shared eastern boundary. Should future dwellings not comply with yard or other boundary infringements then a separate land use consent would be required.

- There is only one instance where more than two allotments are directly adjoining one of these adjacent properties. As outlined in Section 8.2.1, the District Plan allows up to two dwellings and associated accessory buildings on a site as a permitted activity, provided they comply with the relevant bulk and location standards. Accordingly, it is considered that the potential adverse effects witnessed at each of these properties, falls within the baseline of effects permitted under the District Plan.

- Where three allotments share a common boundary with an existing allotment (lots 201 – 203), the encroachment of the third allotment along this boundary is marginal and, given topographical constraints, development of this portion of the site is not considered likely.

PROPERTIES ADJOINING SOUTHERN BOUNDARY (WRIGHT STREET PROPERTIES)

Currently an internal driveway runs alongside this boundary. In this application, a portion of the internal driveway will be replaced with an internal road that connects to a jointly owned access lot that forms a loop road to provide access to the dwellings proposed on the elevated portions of the site.

Potential adverse effects on these properties are considered less than minor for the following reasons:

- A close boarded fence will be installed between the proposed road and the boundaries of the Wright Street properties. This will assist in obscuring views to the proposed development internal to the site.
- The footpath for proposed road lot 302 is located on the internal (northern side) of the road that means there will be no pedestrian movement directly adjacent to the rear boundaries of the adjoining properties.

PROPERTIES ADJOINING WESTERN BOUNDARY (MOOHAN STREET AND NELSON CRESCENT PROPERTIES)

Proposed allotments 85 – 108 are located back to back with existing properties along the eastern side of Nelson Crescent and Moohan Street. Except for one two storey dwelling, all of the adjacent existing properties along these streets contain single storey dwellings with external garages located to the front or rear of the dwellings. All existing allotments have relatively deep allotments of approximately 30 – 35 metres.

Potential adverse effects on these properties are considered less than minor for the following reasons:

- The back to back arrangement not only seeks to optimise solar gain but also seeks to ensure privacy of existing properties is achieved.
- The presence of the existing drainage channel along the western boundary will likely ensure rear yard setbacks will be complied with.
- For proposed allotments less than 400m^2 specific house designs have been provided. Therefore, the allotments are of a sufficient size and shape to achieve their intended use. While typologies vary, it is considered that nominated typologies can be suitably accommodated on each future allotment.
- A close boarded fence will be installed between the proposed road and the boundaries of the Wright Street properties. This will assist in obscuring views to the proposed development internal to the site.

10.2.4 STEP 4: LIMITED NOTIFICATION IN SPECIAL CIRCUMSTANCES

Special circumstances have been defined as circumstances that are unusual or exceptional, but may be less than extraordinary or unique. This consent application relates to the construction of residential dwellings on a property zoned for residential development. While the proposal represents a range of non-compliances with the District Plan the scale of effects and intensity of the activity are not inconsistent with typical residential activity or use. On this matter, and with little weight in its application, it is noted that the site could accommodate residential development at a density of 400m^2 lots (any potential subdivision would be a controlled activity which would require resource consent but council would have to grant it). As such I do not consider there to be any unusual or exceptional circumstances that warrant notification of this proposal.

10.2.5 LIMITED NOTIFICATION SUMMARY

On the basis of the assessment provided above, limited notification of the application is not required.

10.3 NOTIFICATION ASSESSMENT

The application satisfies the relevant provisions of sections 95A - 95G of the Act and accordingly public or limited notification is not required.

11. CONCLUSION

The Applicant, The Wellington Company Limited, in partnership with the Port Nicholson Block Settlement Trust ('the Trust') and on behalf of the landowners Lowry Bay Section One Limited seeks resource consent to undertake a 139-lot subdivision including 127 residential allotments, construct 100 dwellings and undertake associated earthworks and servicing.

This application pertains to the final stages (being stages two and three) of the development of the former college site. The full development of this site seeks to provide a new residential precinct and reinforce the use of the existing community facilities.

The proposal, that follows a master planning process that has been undertaken for the wider former Wainuiomata College site, presents a commitment to integrated and comprehensive design in order to deliver high-quality urban outcomes that are consistent with the Hutt City Medium Density Design Guide. Interfaces with adjacent existing development have been sensitively considered and new housing faces the existing facilities, thereby improving their profile and security.

The adverse effects of the proposal on the environment are considered to be less than minor as discussed in Section 8.2.3 of this application. It is also concluded that the application need not be publicly or limited notified.

In terms of Section 104(1)(a), the adverse effects of the proposal will be acceptable. The proposal is also not contrary to the relevant objectives, policies and assessment criteria of the District Plan in terms of Section 104(1)(b). Therefore, in accordance with Section 104B of the Act, it is appropriate for consent to be granted.

12. LIMITATIONS

12.1 GENERAL

This report if for the use by The Wellington Company and the Hutt City Council only for resource consent purposes.

No responsibility is accepted by Egmont Dixon Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and / or the use of any part of this report in any other context for any other purposes.

APPENDIX ONE

CERTIFICATE OF TITLE

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**45698**
Land Registration District	**Wellington**
Date Issued	19 July 2002

Prior References
GN479956

Estate	Fee Simple
Area	7.6897 hectares more or less
Legal Description	Part Lot 1 Deposited Plan 20910

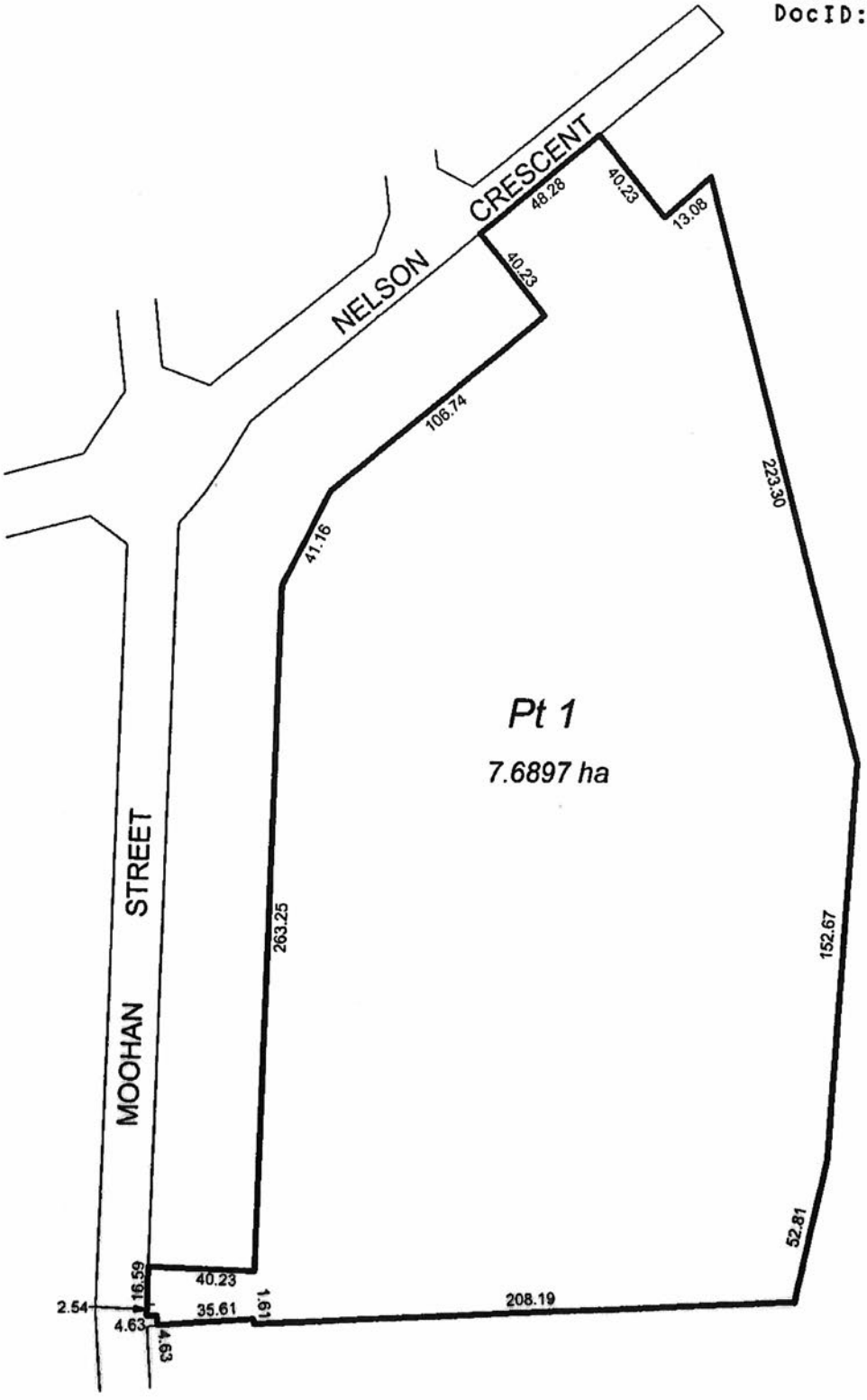
Registered Owners
Lowry Bay Section One Limited

Interests

Subject to Part IV A Conservation Act 1987 except sections 24(2A), 24A and 24AA

Subject to Section 11 Crown Minerals Act 1991

8782775.3 Mortgage to (now) Taranaki Whanui Limited - 27.7.2011 at 9:57 am



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**828925**
Land Registration District	**Wellington**
Date Issued	15 March 2018

Prior References
45705

Estate	Fee Simple
Area	3.4148 hectares more or less
Legal Description	Lot 28 Deposited Plan 21094

Registered Owners
Lowry Bay Section One Limited

Interests

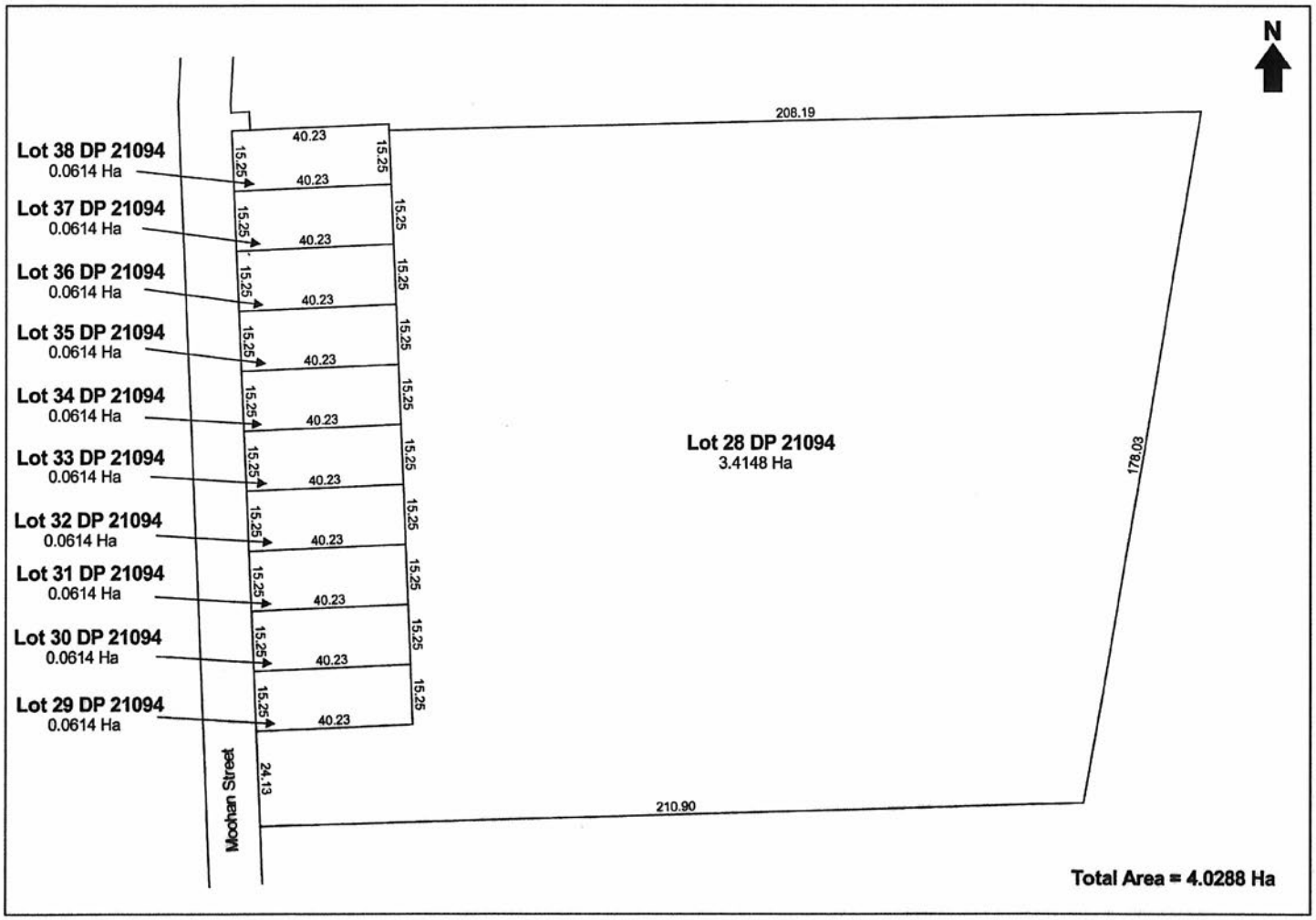
Appurtenant hereto are water rights created by Transfer 271704 - 5.7.1943 at 11:00 am

Appurtenant hereto are water rights created by Transfer 329019 - 23.6.1950 at 12:50 pm

Subject to Part IV A Conservation Act 1987 except sections 24(2A), 24A and 24AA

Subject to Section 11 Crown Minerals Act 1991

8782775.3 Mortgage to (now) Taranaki Whanui Limited - 27.7.2011 at 9:57 am


N
Lot 38 DP 21094
0.0614 Ha
Lot 37 DP 21094
0.0614 Ha
Lot 36 DP 21094
0.0614 Ha
Lot 35 DP 21094
0.0614 Ha
Lot 34 DP 21094
0.0614 Ha
Lot 33 DP 21094
0.0614 Ha
Lot 32 DP 21094
0.0614 Ha
Lot 31 DP 21094
0.0614 Ha
Lot 30 DP 21094
0.0614 Ha
Lot 29 DP 21094
0.0614 Ha
40.23
15.25
208.19
Lot 28 DP 21094
3.4148 Ha
178.03
24.13
210.90
Moohan Street
Total Area = 4.0288 Ha

APPENDIX THREE

LANDSCAPE AND URBAN DESIGN STATEMENT

Align

Wainuiomata TE MATEHOU

Stage 2

Landscape and Urban Design

Details

DOCUMENT CONTROL

Outline	Details	Date	Commentary
Produced by	Anne Wilkins Tim Reed Jorden Derecourt	18.12.18	Landscape Architects (Align)
Reviewed by	Michael Hall	18.12.18	QC (Align)
Produced for	The Wellington Company	18.12.18	Approval (Client)
Document	Revision	Ref	Project
Landscape and Urban Design	1.0	UWC001	Te Matehou

CONTENTS

Proposal Context

Proposal

Te Matehou aims to achieve positive social, cultural, environmental and commercial outcomes, as well as ensuring cultural sustainability, meeting iwi expectations and supporting the wider community. Through successfully meeting these goals Te Matehou will be a special place for Te Ātiawa-Taranaki Whānui, and the wider community. For detail see: tematehou.co.nz

Site layout

The site layout has been influenced by the following design drivers:

- Promoting a diverse community.
- Connectivity to the wider community and services.
- Responding to topography and environmental site specific requirements.
- Maintaining residential character and amenity of the existing established residential environment.
- Enhancing ecological and production values in a residential setting through designed landscapes.

Proposal and document reference notes

A. For site masterplan please refer to Appendix A.

B. To be read in conjunction with the planning works i.e. resource consent application.

C. Further on-lot landscaping can be provided as a condition of the consent - see application document for details.

D. The overall landscape strategy will be carried over from the previous consent for Stage 1 works - see the Landscape Strategy section and the application document for details.

E. The the cultural overlay plan (Appendix A) is noted on the scheme plan - the finalisation of this will be subject to a design workshop session with mana whenua post-lodgement.

To restore, revitalise, strengthen and enhance the cultural, social and economic well-being of Taranaki Whanui ki Te Upoko o Te Ika

Schematic Plan

The principles that drove the masterplan (Appendix A) focused on placemaking and cultural relevance, these aspects are summarized below.

Community
The residences and target demographics, which focused on achieving a multi-cultural community, with mixed tenure, in a range of architecturally expressive housing typologies.

Connectivity
Clear wayfinding and sense of recognition and community identity in entry points and thresholds. The flow of people through the site is to be integrated and connected with a clear movement hierarchy. This hierarchy emphasizes pedestrian focus and walk-ability, within the site and as connections to surroundings, including local parks and recreation opportunities.

Productivity
In addition to these parks and recreation opportunities, there are productive gardens, producing fruit, vegetables, and native species, such as Harakeke. These values are throughout the site, with enhanced landscape character expressed by vegetative framework of native specimen trees, and productive elements, such as gardens and fruit trees.

NOTES:

- Cultural development areas as shown in the plan in Appendix A and referenced in Note E (page 3).
- Building heights are all one storey.
- The range of typologies are shown on the following plans and table. Refer to the consent application for further information.

Typologies

Ten architecturally designed housing typologies have been developed for use across the 97 allotments in Stage 2 where the allotment area is under 400m^2.

These dwellings have two or three bedrooms. The houses vary in width and depth in response to location and allotment orientation and layout. Their floor plans prioritise living space, efficiency and indoor-outdoor flow and activation of courtyards and spaces.

SITING OF TYPOLOGIES

Typologies are to be suited to their site proportionally, be orientated for optimal solar gain, have variety in appearance between adjacent lots, be placed in a manner that assists in achieving the best landscape and urban design outcomes. The public/private interface between the houses and the street or public space allows passive surveillance to increase safety.

The above information has been summarised from the reference plans (Appendix A)

KEY:

Colour on plan	No:	Typology name	Number of allotments
	1	Villa A	25
	2	Villa B	8
	3	Villa C	4
	4	Villa D	40
	5	Villa E	4
	6	Villa F	2
	7	Villa G	4
	8	Villa H	4
	9	Villa I	1
	10	Villa J	5

Typologies

PROPOSED SUBDIVISION

- 127 fee-simple residential allotments ranging in size from 128m^2 – 770m^2. 97 allotments are less than 400m^2 in area.
- One 11,283m^2 allotment (proposed Lot 301) to vest with Council as Road;
- One 824m^2 allotment (proposed Lot 302) to vest with Council as Road;
- Three jointly owned access allotments (lots 502, 503 and 504);
- Two recreation reserves (lots 401 and 408) to vest with Council as recreation reserve;
- One waahi tapu allotment (proposed lot 407) that comprises a waahi tapu site being the natural spring;
- Two stormwater detention allotments of 1,339m^2 and 2,210m^2 to vest as local purpose reserve (stormwater);
- One 2,715m^2 allotment for park space and potentially to contain the community hall; and
- One 11,484m^2 balance allotment.

Sourced from Egmont Dixon Resource Consent Application 12/18.

KEY:

- Open space
- Lot
- Road
- Stage One
- Site boundary
- Indicative building layout (subject to detailed design)

Siting Typologies

Lot No.	Typology Indication	Alternative	Rationale	Site Context
84 / 85 / 86 / 127 / 95 -102 / 148 - 165	Above lot size 400m2	n/a	n/a	n/a
87 / 91	Villa H	Villa E / I / G	Larger lot sizes adjacent to the entrance to Stage 2 and the existing landscape fabric outside of the site. Juxtaposition of varying typologies add interest and mix of appearance.	Located next to entrance, gateway and potential park space. Aesthetically nice outlook and existing street presence (adjacent existing landscape) to the northwest.
88 / 90 / 92 / 94	Villa G	Villa H / E		
89 / 93	Villa E	Villa H / I		
103	Villa C	Villa A/ D	Villas to be adjacent to street interface area so visually add interest through a mix of typologies.	Adjacent to stormwater area and utilities to the south which demarks the boundary of the lots. Interaction with the community spaces to the south and pedestrian links.
104/ 106	Villa D	Villa C/ D		
105/ 107	Villa A	Villa A/ C		
108	Villa D	Villa C/ D	Corner location in a smaller lot. Mixed appearance for visual interest.	Smaller area on a busier corner area adjacent to other lots, key road route and community green area.
109/ 110/ 111	Villa J	TBA		
112/ 113/ 117/ 119/ 122/ 123/ 126	Villa D	Villa A / C / F / H / I	Proximity to a series of typologies. Balance so there is visual interest and consistency in area.	Adjacent to community green space with pleasant outlook west. Next to the laneway leading through the space and wider site i.e. pedestrian links.
114/ 116/ 118/ 121/ 125	Villa A	Villa C / D / E / F / H		
115/ 120/ 124	Villa C	Villa A / DVill G		
128/ 129/ 130/ 131/ 133/ 135/ 138/ 139/ 140/ 143/ 144	Villa D	Villa A / C / D		
132/ 134/ 136/ 137/ 141/ 142	Villa A	Villa A / C / D		
145 / 146	Villa J	n/a	Adjoining villa / shared area	Level chage adjacent to Lot 111. Smaller lots to interface with the community area (either the gym or the park space)
147	Villa D	Villa A / C		
166/ 167/ 168/ 169/ 171/ 173	Villa D	Villa A / C	Proximity to a series of typologies. Balance so there is visual interest and consistency in area.	Adjacent to community green space with pleasant outlook west. Next to the laneway leading through the space and wider site i.e. pedestrian links.
177/ 180/ 181/ 182	Villa D	Villa A / C		
170/ 172/ 176/ 178/ 179	Villa A	Villa C / D		
174/ 175/ 183/ 184	Villa B	n/a		
185/ 186	Villa B	n/a	Shared boundary of Villas in order to make the best use of the longer narrow sites. Alternatives are fixed to shared wall units.	North facing yards and aspect out to the community areas to the south. A connection node for pedestrians and vehicles at a wider scale.
187	Villa A	n/a		
188/ 190/ 191/ 197/ 200/ 201	Villa A	Villa C / D	Linking into the adjacent Stage 1 area(s) visually.	Location next to kaumatua housing and (water springs) outlook adjacent to park green space and links north and south ia pedestrian connection.
195/ 196	Villa B	Villa A / C / D		
189/ 192/ 193/ 194/ 198/ 199/ 202/ 203	Villa D	Villa A / C		
204 / 208	Villa E	Villa F / H / I	Linking closely into the adjacent Stage 1 area(s). Villa types will create a aesthetic link.	Landscape is a dynamic space; located near both movement and adjacent to some community areasw.
205 / 209	Villa F	Villa E / H / I		
206 / 210	Villa H	Villa E / F / I		
207	Villa I	Villa E / F / H		

Landscape Strategy

General

A The landscape strategy implicitly links with the wider Stage 1 works (i.e the previously consented works). This is to achieve consistency in design and approach for the wider site.

B For additional planting detail please reference the Stage 1 works. It is anticipated that the planting palette will be of a similar nature for consistency and ecological tie-ins across the wider site.

C Front yard fencing materials are to be consistent with dwellings, front boundary fences are not to exceed 1.2m when adjoining a street and side boundary fences are limited to 1.8m. Black pool fencing is to be used for all fencing running parallel to any lot boundary that is adjacent to the western boundary.

D Landscape on-lot / site specific areas are to be provided post-lodgement - refer to the consent application for details.

Safety in Design

General principles applied in the design and implementation of the design include:

- Passive surveillance from residences, thoroughfares and public spaces to ensure users real and perceived public safety
- Access at street level to and from houses
- CPTED applied in the landscape and urban design, such as lifting the canopy of trees to a allow sightlines, and lighting on streets, as well as throughout public areas
- Appropriate barriers and infrastructure according to standards for safety barriers on retaining walls over 1.0m in height where neccessary.

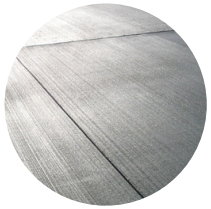
Points to be resolved through the detailed design process are:

- Pedestrian crossings and routes.
- The location of underground services.
- CPTED Considerations.
- Traffic calming.

Landscape Strategy

Surfacing

Sand blasted brushed concrete with decorative saw cuts



Brushed concrete with decorative saw cuts

Gravel bed

Hard Landscape Elements

Square timber retaining wall

Indicative bin enclosure and storage

Indicative vertical baton picket fence 1.2m

Permeable slat fence 1.5m

Paling fence 1.8m

Side gate

Soft Landscape

Feature Planting

Hebe 'Wiri Mist' 5L

Dietes grandiflora 2L

Lomandra 'Taniko' 2L

Anthropodium cirratum 'Parnell' 2L

Lavandula stoechas 'Purple Ribbon' 2L

Native Strip Planting

Poa cita 'Silver Tussock' 2L

Hebe 'Wiri Mist' 5L

Native Specimen Trees

Knightia excelsia 'Rewarewa' 160L

Podocarpus totara 'Totara' 160L

Native Screen Planting

Coprosma repens 'Poor Knights' 2L

Phormium cookianum 'Green Dwarf' 5L

Poa cita 'Silver Tussock' 2L

Muehlenbeckia astonii 'Shrubby Toroaro' 5L

Oleria paniculata 'Akiraho' PB12

Cordyline australis 'Cabbage Tree' PB28

Fruit Trees

Acca sellowiana sp. PB28

Prunus domestica sp. PB 40

Malus pumila sp. PB40

Exemplar imagery sourced from "Wainuiomata: Stage 1C Terraces" Resource Consent Drawings

APPENDIX FOUR

STORMWATER STRATEGY

Memo

To:	Cuttriss Consulting Ltd	From:	Zeean Brydon
Cc:		Date:	10 December 2018
Subject:	Moohan Street – Stormwater Strategy Revision Stages Two and Three		

Attachments

Attachment A – Pre and Post Development Plans
Attachment B – Stormwater Strategy
Attachment C – Calculations
Attachment D – Hydrology Modelling Report

1. Background

A site wide stormwater strategy was prepared in April 2018 to support planning approval for Stage One of the proposed re-development of the Wainuiomata College & Intermediate Sites, Moohan Street, Wainuiomata.

Planning approval is now being sought for the balance land (Stages Two and Three).

This memo provides an addendum to the e2Environmental Memo dated 12 April 2018 updating the stormwater strategy to reflect the updated development layout for Stages Two and Three (refer Cuttriss Consultant's Plans 29560 P4, Sheets 1 and 2 in *Attachment A*).

2. Introduction

The re-development of the Wainuiomata College & Intermediate Sites, Moohan Street, Wainuiomata, will ultimately see up to 212 Lots and associated facilities created on the 11.7 ha site (123 Lots in Stages Two and Three)

Hutt City Council (HCC) requirements for stormwater neutrality mean that the peak stormwater flows from the redeveloped site must be attenuated before being released to the wider catchment.

In addition to attenuating the peak stormwater flows the design must take into account stomwater runoff from the wider catchment and the existing Wellington Water stormwater infrastructure constraints.

This memo outlines the stormwater strategy prepared to support the resource consent application for Stages Two and Three. The strategy identifies flood extents, anticipated stormwater detention volumes, secondary flow paths and infrastructure requirements, providing sufficient detail to demonstrate that stormwater can be effectively managed so that the impact on the receiving catchment is negligible. The strategy is subject to detailed design and engineering approval which will follow once resource consent has been obtained.

3. Site Background Information

- The existing site comprises the historic Wainuiomata College & Intermediate sites site, with existing buildings, car parking, hard standing (paths, tennis courts etc), playing fields and green areas. Pre and post development areas are presented in the calculations in *Attachment C.*

- In general, the site slopes from east to west across three distinct terraces. A site topographic survey is included in *Attachment A.*

- The site is bounded to the east by a relatively steep bush catchment and residential area served by Wright Street and Isabel Grove.

- The site is served by existing connections to three public stormwater mains, being;

    - A DN600 reinforced concrete main which enters the eastern site boundary (near #9 Isabel Grove) before heading south and along the southern boundary, exiting the south western corner of the site.

      Two DN225 pipes discharge stormwater from the development site to the DN600 main.

    - A DN750 reinforced concrete main collects stormwater, including a spring source, from the central site area. The DN750 main exits the site near the northern Moohan Street entrance (immediately south of #108 Moohan Street).

    - A DN525 reinforced concrete main also collects stormwater from the central site area and exits the site through #120 Moohan Street.

- There is an existing drainage ditch located along the western site boundary (to the rear of #108 – 142 Moohan Street and #16 – 34 Nelson Crescent). The drainage ditch collects stormwater runoff from the uphill bush catchment and playing fields and directs this towards the DN525 stormwater main.

- Stage Two and Three will discharge via the existing DN750 and DN525 pipes. The capacity of the existing stormwater pipes has been assessed using Manning's Equation, with the results summarised in Table 3.1 below, and full calculations included in *Attachment C.*

Table 3.1 – Existing Off-Site Pipe Capacities

Pipe	80% Full (m^3/s)	Pipe Full (m^3/s)	Restricted Discharge in Flood Conditions (m^3/s)
DN750	2.0	2.05	1.23
DN525*	0.42	0.43	0.43
TOTAL	2.42	2.48	1.66

**survey data incomplete – approximated based on assumed gradients*

- Wellington Water modelling indicates flooding along the southern site boundary. This flooding is managed within Stage One and does not impact on Stages Two and Three.

- Wellington Water confirm a flood level within Moohan Street near the southern site boundary (Refer Figure 2.1 below) as being 86.6 m aMSL (1% AEP event with Climate Change).

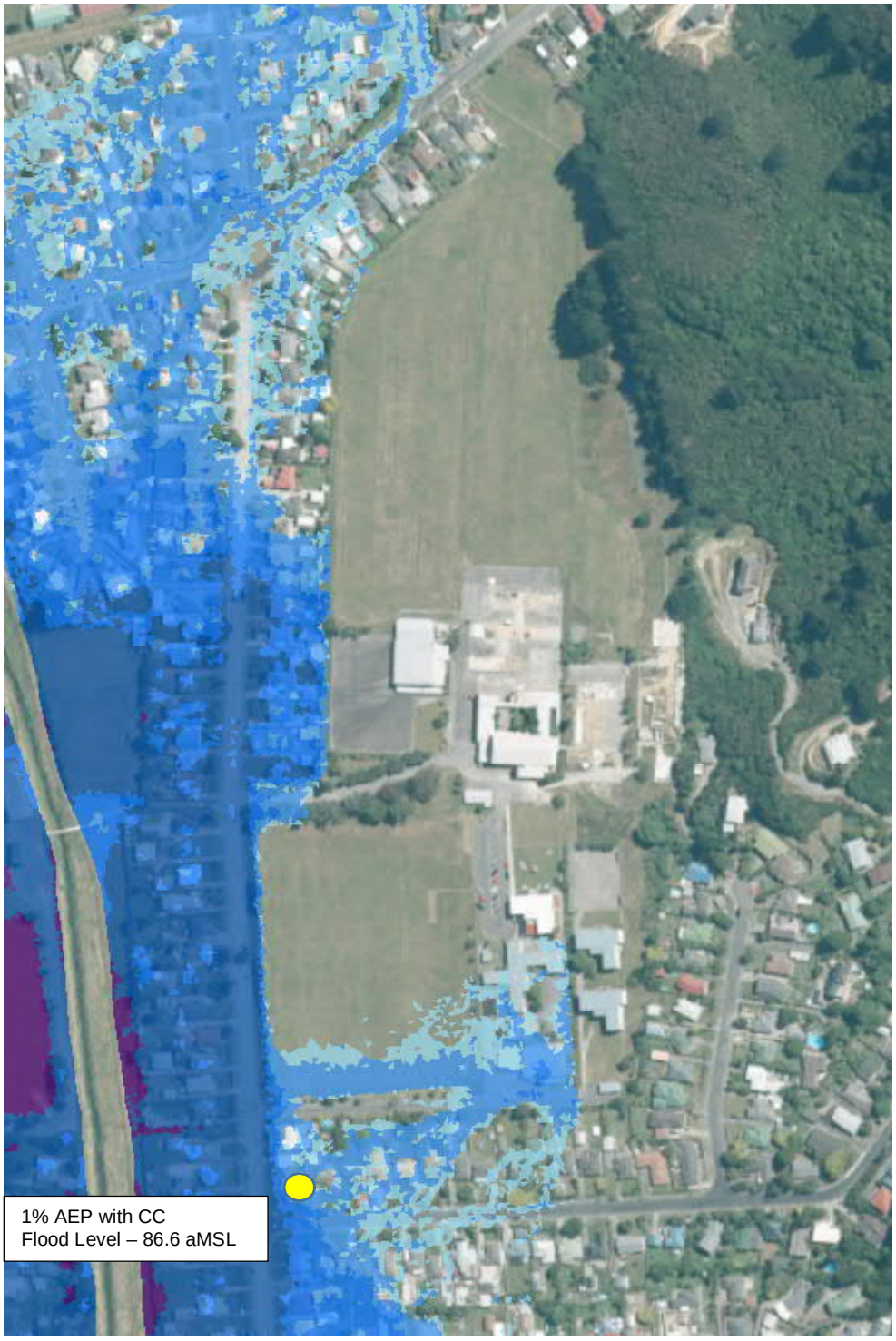


Figure 2.1 – Wellington Water Flood Model Extract

4. Level of Service

Wellington Water's Regional Standard for Water Services (RSWS) requires that the following criteria are met to gain engineering approval for the development;

- Primary Level of Protection for residential areas – 10% AEP (RSWS Table 4.1)
- Secondary Level of Protection – 1% AEP (RSWS Table 4.1)
- Storage for multi-lot developments is covered in Section 4.4.3 of the RSWS, which allows flood routing using the Unit Hydrograph method as outlined in ARC TP108 Guidelines for Stormwater Modelling in the Auckland Region).

Wellington Water have confirmed that the proposed development must be hydraulically neutral for all events up to the 1% AEP event.

5. Overland Flow Paths

5.1 Catchment Flows

Wellington Water have confirmed that their current model does not consider the local catchment and has not therefore mapped any secondary overland flow paths.

The approximate extent of the wider catchment is identified on Figure 5.1 below.

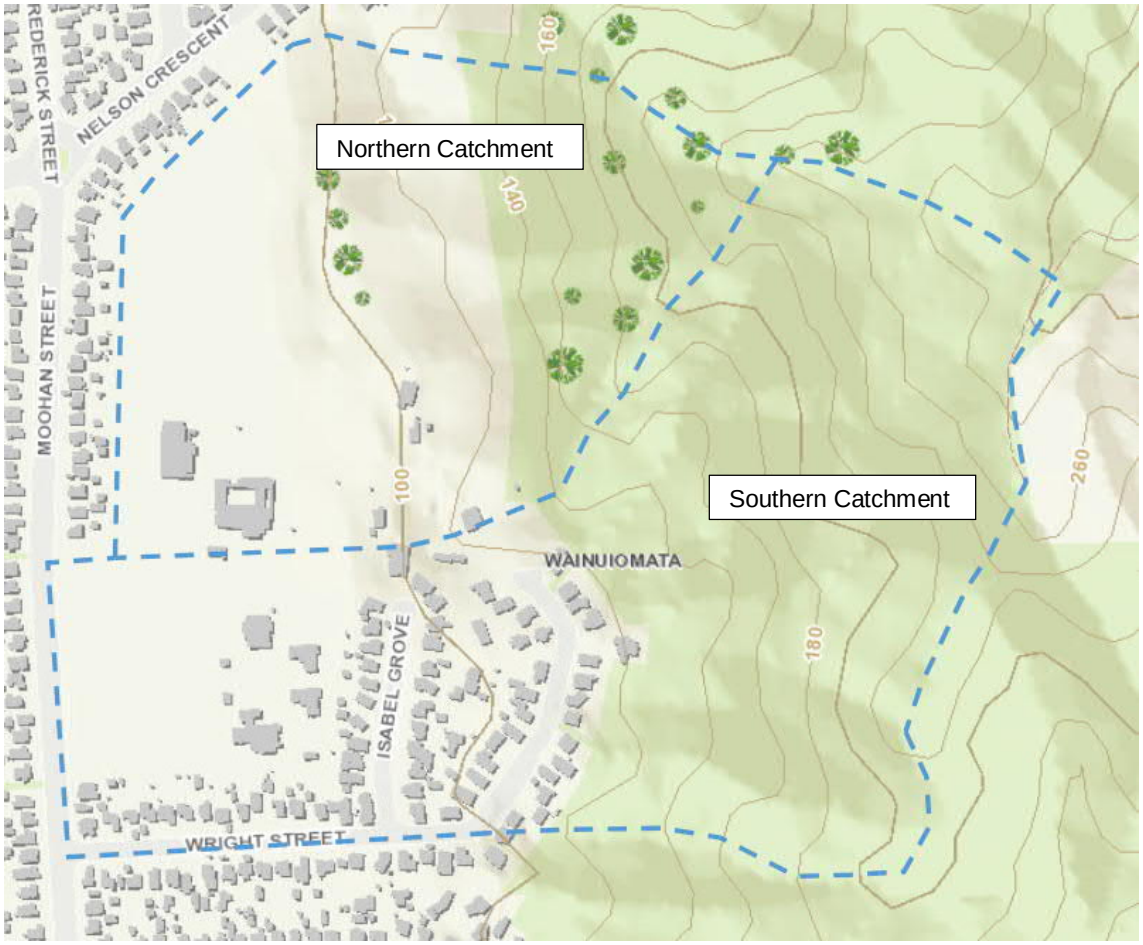


Figure 5.1 – Catchment Areas

The southern portion of the catchment comprises residential dwellings intersected by Wright Street and Isabel Grove. It is expected that exceedance flows from this catchment will collect within the road reserves with the secondary overland flow paths being along Wright Street and Isabel Grove.

The northern portion of the catchment comprises predominately undeveloped bush. Contours indicate that flows from this catchment will shed uniformly across the college towards Moohan Street collecting within the western drainage ditch. (Refer Topographic Plan in *Attachment A)*.

Indicative secondary overland flow paths are identified within the stormwater strategy presented in *Attachment B.* As the overland flows from the uphill catchment do not need attenuating they have not been included within the hydraulic assessment undertaken to confirm stormwater detention volumes. The location and size of the secondary overland flow paths (within Stages Two and Three) and their impact on the detailed stormwater design will be confirmed as part of the detailed design.

The secondary overland flows from Stages Two and Three will be directed off-site:

- to Nelson Crescent via a secondary overland flow path constructed along the base of the uphill catchment.*
- to Moohan Street via an overland flow path along the northern Stage One access road.

*subject to confirmation of the final levels design.

The anticipated peak discharge from the uphill catchment has been determined using a nested hydrograph as being 1.43 m^3/s. Calculations are provided in *Attachment C* to show hat the anticipated catchment flows can be contained within the 7.2 m road carriage with minor (10mm) spill onto the verge (anticipated water level depth 0.135m). The secondary overland flows will not therefore impact on the site road network.

6. Stage One

A simplified hydraulic model has recently been completed to support the detailed design of the Stage One stormwater system. The model process and results are discussed in detail in the e2Environmental memo XXX, and are summarised below:

Table 6.1 - Pre-development and post-development runoff and allowable discharge rate from the attenuation basin.

	10-yr ARI Peak Flow Rates (m^3/s)		**100-yr ARI Peak Flow Rates (m^3/s)**	
Catchment	**Pre - Development**	**Post-Development**	**Pre - Development**	**Post-Development**
1A	0.19	0.224	0.348	0.382
1B, 1C, 2B	0.385	0.480	0.708	0.828
TOTAL	0.575	0.704	1.506	1.210

Due to site layout and topography catchment 1A cannot be attenuated on site. Catchment 1A will therefore be allowed a free unattenuated off site discharge.

To ensure no increase in post development runoff the allowable discharge rates are:

Table 6.2 – Stage One Allowable Discharge Rates

	10-yr ARI (m^3/s)	100-yr ARI (m^3/s)
1A	0.224	0.382
1B, 1C, 2B	0.351	0.674
TOTAL	0.575	1.056

Modelling confirmed a maximum storage volume of 555 m^3 would be required within Stage One to attenuate the post development stormwater flows.

The modelling confirmed a stormwater attenuation basin with an overall attenuation volume of 555 m^3 would achieve a post development off site discharge of:

Table 6.3 - Stage One Attenuated Discharge Rates

Catchment	10-yr ARI (m^3/s)	100-yr ARI (m^3/s)
1A	0.19	0.348
1B, 1C, 2B	0.305	0.475
TOTAL	0.498	0.823
% Difference	13% reduction	22% reduction

7. Remaining Site

A hydrological model was created to determine the nested hydrographs for both the 10% and 1% storm events for the pre and post development situations for the remainder of the site. The output hydrographs were then routed through an excel spreadsheet to confirm the anticipated stormwater detention volumes required to achieve hydraulic neutrality.

The updated hydrological modelling report is included as *Attachment D.*

The hydrological modelling results are included in Table 7.1 below

Table 7.1 – Hydrological Modelling Results (Stages Two and Three)

	10% AEP Event		1% AEP Event	
	Peak Flow Rate (m^3/s)	**Total Runoff Volume (m^3)**	**Peak Flow Rate (m^3/s)**	**Total Runoff Volume (m^3)**
Pre Devp	0.796	4,722	1.481	8,980
Post Devp	0.976	6,064	1.664	10,676
Difference	0.180	1,343	0.183	1,696

8. Stormwater Strategy

The proposed stormwater strategy is identified on sketch 18005 – SK001 Revision B in *Attachment B*. For the purposes of the stormwater strategy the site has been split into eight sub-catchments (refer 18005 – SK001). Stage One has been modelled separately (as discussed above) and is included on the strategy sketches for completeness.

Stormwater from subcatchments (2A, 2C, 3A and B) will be collected by conventional gravity drainage and transferred to two attenuation areas. Stormwater detention will be achieved via detention basins. Stormwater discharge from the attenuation areas will be controlled to ensure that the post development discharge does not exceed the pre-development discharge. Overland flows from the wider catchment will be collected and transferred through the site via specially designed overland flow paths.

The existing DN750 and DN525 mains will be retained and utilised to discharge stormwater from Stages Two and Three. The DN750 main may need to be relocated into the road reserve and will need to continue to collect spring flows as existing.

To achieve hydraulic neutrality the total off-site peak stormwater discharge needs to be limited to the pre-development peak flows (Table 3.1) but also cannot exceed the off-site pipe capacities as indicated in Table 7.2 below.

Table 7.2 – Allowable Off – Site Discharge Rates

Catchment	Allowable	Stage One	Remaining
DN750	1.23	0.224	1.006
DN525	0.43	0.0	0.43
TOTAL	1.66	0.224	1.436

The post development stormwater discharge and detention volumes have been assessed by routing the pre and post development stormwater hydrographs for the 1% and 10% critical events using a modified tank routing spreadsheet. Calculations are provided in *Attachment C* and are summarised in Table 7.3 below.

Table 7.3 – Attenuated Discharge Rates and Volumes

Catchment	**10% AEP Event**		**1% AEP Event**	
	Discharge (m^3/s)	**Attenuation Volume (m^3)**	**Discharge (m^3/s)**	**Attenuation Volume (m^3)**
3A	0.248	160	0.368	362
2A, 2C & 3B	0.337	304	0.495	667
Site Total	0.585	464	0.862	1029
Comparison with Pre Devp	26% Reduction		42% Reduction	

Table 7.3 shows that the proposed stormwater strategy will offer a betterment over the existing situation.

Stormwater detention volumes are initial estimates only and are subject to confirmation at detailed design stage.

Sketch 18005-SK001 shows how the required stormwater volumes could be accommodated on site using stormwater detention basins.

7. Conclusion

The stormwater strategy presented above demonstrates that the stormwater generated by Stage Two and Three of the proposed development can be effectively managed so that the impact on the receiving catchment is negligible.

In particular the strategy demonstrates that:

- overland and flood paths can be managed without impacting either the proposed development or existing residential catchment.
- Hydraulic neutrality can be achieved with off-site post development peak flows limited to match pre-development flows, whilst taking into account the restrictions associated with the existing network, and that the additional stormwater volumes generated can be managed on site.

The stormwater strategy will be developed through detailed design and Engineering Approval following completion of the resource consenting process.

e2environmental Ltd

Zeean Brydon
Associate Engineer

Attachment C – Calculations

80 Moohan Street, Wainuiomata College

Sheet 1

Projec No: 18005

Description SUMMARY

Revision -

Date 7/12/2018

Calc ZB

Checked

Development Site

Catchment	PRE DEVELOPMENT AREAS Total Area (m2)	Existing Road (m2)	Existing Building (m2)	Existing Green (m2)	Pre Development % Imp	Post Development % Imp
Catchment 3A	23,921			23,921	0.00	0.65
Catchment 3B	18003	1535		20574	0.09	0.65
Catchment 2A	2175		979	1196	0.45	0.65
Catchment 2C	15912	4800	1464	9648	0.39	0.65
TOTAL	60,011	6335	2443	51233.25		

MODELLING SUMMARY

Peak Pre Development Flow in a 10 % Event - From Hydrology 796 l/s

Peak Pre Development Flow in a 1% Event - From Hydrology 1481 l/s

Allowable pipe discharge (accounting for flooding and Stage One discharge) 1436 l/s

Discharge Flows & Volumes from Hydrographs & Routing

Catchment	Discharge (L/s) 10%	1%	Volume (m3) 10%	1%	Comment
3A	248	368	160	362	Routing
2A, 2C and 3B	396	587	221	502	Routing
Post Devp Total	644	955	381	864	
Pre Devp Total	796	1481			
Comparision with Pre-Devp Flows	-19	-36			Reduction

Secondary Overland Flows

Northern Hillside Catchment - Anticipated Peak Flow - Rational Method

Northern Bush Catchment 107297 m2 10.7297 ha

Time of Concentration

Length 358.57 m

Top of Slope 260 m ASL

Bottom 100 m ASL

slope 0.4462 m/m

44.6 %

Equation 8 $T_c = \frac{107nL^{0.333}}{S^{0.2}}$ *(Friend's Equation)*

Where n is Manning's 'n', L is length in meters, and S is slope in % (i.e. 3.0 for 3% slope)

Gutter flow T_c (in mins) can be estimated using the Manning's derived equation

Mannings n 0.05

ToC 17.75 minutes

use 17 mins as also need to allow time for flow through the development

	RSWS	With CC & Wainuiomata Factor
100 yr, 10 min rainfall Intensity	112.79	139.99
100 yr, 20 min rainfall intensity	76.7	95.20
100 yr, 17 min rainfall intensity	87.527	108.64

runoff co-eff 0.45

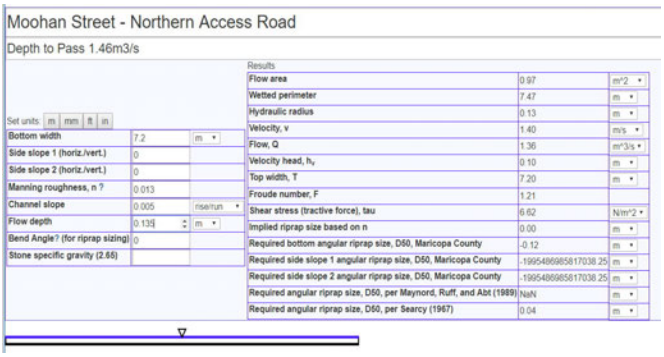
100 yr, 10 min peak flow 1.46 m3/s

Exceedance flows will be directed into the northern access road for Stage 1

The access road details are: 7.2 m wide

0.0050 gradient

0.013 asphalt smooth, mannings n



Projec No: 18005

Description EXISTING STORMWATER INFASTRUCTURE CAPACITY ASSESSMENT

Revision -

Date 5/04/2018

Calc ZB

Checked

750mm diameter off site pipe

Approx Gradient from Topo

US IL	DS IL	Length	Grade	Grade 1 in
88.12	83.92	124	0.0339	29.52

Concrete Pipe - Mannings n 0.013

Allow pipe to be 80% full Discharge 2004 l/s

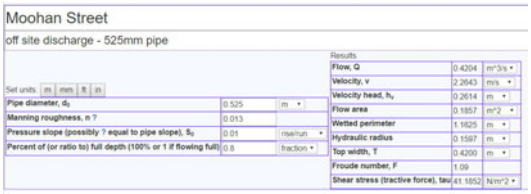
525mm diameter off site pipe

Approx Gradient from Topo

US IL	DS IL	Length	Grade	Grade 1 in
unknown - worse case 1 in 100			0.01	

Concrete Pipe - Mannings n 0.013

Allow pipe to be 80% full Discharge 420 l/s



600mm diameter pipe - takes flows from wider catchment
This pipe is under capacity - the site drainage will be kept separate from this pipe

750mm diameter pipe in flood conditions

Approx Gradient from Topo

US IL	DS IL	Length	Grade	Grade 1 in	
88.12	86.6	124	0.0123	81.58	Flood Level

Concrete Pipe - Mannings n 0.013

Allow pipe to be 100% full in flood conditions Discharge 1230 l/s

525mm diameter off site pipe in flood conditions

Already approximated to be worse hydraulic grade line than 1 in 81 (grade of the 750mm pipe)

SUMMARY

PIPE	80% Pipe Full (m3/s)	Pipe Full (m3/s)	Restricted Discharge in Flood Conditions	
DN750	2.00	2.05	1.23	0.174
DN525	0.42	0.43	0.43	0.55
DN225	0.22	0.23	0.06	
DN225	0.22	0.23	0.06	
TOTAL	2.86	2.94	1.78	

Moohan Street Site, Wainuiomata

Sheet 3

Projec No: 18005

Description STAGE 3A Routing

Revision -

Date 07/12/20184

Calc ZB

Checked

Max allowable discharge 290 L/S

DN525 max discharge 430 L/s

Available pond reserve 1339 m2

INPUT HYDROGRAPH FROM MODELLING

(B) Tank Details

Tank Area	800.00	m2					G	9.8066	m/sec2
Tank Height	0.5	m2							
Orifice diameter	0.5	m	Area	0.19635	m2				
Orifice discharge coefficient		0.61			m	d2	0.25		
Max orifice head	1	m2							
							2g	19.6	m/sec2

SIMULATION

time step	1 min	Max WL	Max Discharge	Max Volume
		0.22	248.03	160.22

Time	Tank Inflow		Tank storage	Tank WL	Adjusted Av WL	Tank Outflow		Net Device Storage
(mins)	l/s	m3	m3	m	m	l/s	m3	m3
0	0	0.00	0.00	0.000	0			0
1	0.0004646	0.00	0.00	0.000	8.71215E-09	0.049493884	0.001485	0.00
2	0.0027547	0.00	0.00	0.000	6.90744E-08	0	0.001485	0.00
3	0.0091858	0.00	0.00	0.000	2.84246E-07	0	0	0.00
4	0.0230391	0.00	0.00	0.000	1.05198E-06	0.543867562	0.016316	0.00
5	0.0475738	0.00	0.00	0.000	2.15209E-06	0.777891433	0.039653	0.00
6	0.0847799	0.00	0.00	0.000	3.80562E-06	1.034431083	0.05437	0.00
7	0.1351767	0.01	0.01	0.000	6.60582E-06	1.362862404	0.071919	0.00
8	0.1980452	0.01	0.01	0.000	1.03721E-05	1.707741143	0.092118	0.00
9	0.2718798	0.01	0.01	0.000	1.5059E-05	2.05772304	0.112964	0.00
10	0.3546803	0.02	0.02	0.000	2.05591E-05	2.404311757	0.133861	0.00
11	0.4441267	0.02	0.02	0.000	2.67256E-05	2.741276064	0.154368	0.00
12	0.5382897	0.03	0.03	0.000	3.33979E-05	3.064422303	0.174171	0.00
13	0.6358349	0.04	0.04	0.000	4.04351E-05	3.371850226	0.193088	0.00
14	0.7357804	0.04	0.04	0.000	4.77326E-05	3.663501918	0.211061	0.00
15	0.8373817	0.05	0.05	0.000	5.52146E-05	3.940176211	0.22811	0.00
16	0.9400137	0.05	0.05	0.000	6.2823E-05	4.202889316	0.244292	0.00
17	1.043189	0.06	0.06	0.000	7.05112E-05	4.452643009	0.259666	0.00
18	1.1465416	0.07	0.07	0.000	7.82425E-05	4.690402735	0.274291	0.00
19	1.2497906	0.07	0.07	0.000	8.59887E-05	4.917104207	0.288225	0.00
20	1.3527188	0.08	0.08	0.000	9.37283E-05	5.133624531	0.301522	0.00
21	1.4551607	0.08	0.08	0.000	0.000101445	5.340767283	0.314232	0.00
22	1.5569922	0.09	0.09	0.000	0.000109126	5.539264645	0.326401	0.00
23	1.6581216	0.10	0.10	0.000	0.000116761	5.729782626	0.338071	0.00
24	1.75848	0.10	0.10	0.000	0.000124345	5.912924762	0.349281	0.00
25	1.8580149	0.11	0.11	0.000	0.000131871	6.089234542	0.360065	0.00
26	1.9566886	0.11	0.11	0.000	0.000139335	6.259200183	0.370453	0.00
27	2.0544798	0.12	0.12	0.000	0.000146735	6.423264125	0.380474	0.00
28	2.1517664	0.13	0.13	0.000	0.000154077	6.581986913	0.390158	0.00
29	2.2505304	0.13	0.13	0.000	0.00016141	6.736809102	0.399564	0.00
30	2.3544435	0.14	0.14	0.000	0.000168886	6.891059835	0.408836	0.00
31	2.4690353	0.14	0.14	0.000	0.000176783	7.050332952	0.418242	0.00
32	2.6007342	0.15	0.15	0.000	0.000185498	7.222023034	0.428171	0.00
33	2.7541449	0.16	0.16	0.000	0.000195462	7.413445965	0.439064	0.00
34	2.9310765	0.17	0.17	0.000	0.000207002	7.62914602	0.451278	0.00
35	3.1309222	0.18	0.18	0.000	0.00022026	7.869678079	0.464965	0.00
36	3.3512297	0.19	0.19	0.000	0.000235203	8.1322373	0.480057	0.00
37	3.5886243	0.21	0.21	0.000	0.000251663	8.411977914	0.496326	0.00
38	3.8389059	0.22	0.22	0.000	0.000269388	8.703185976	0.513455	0.00
39	4.0980735	0.24	0.24	0.000	0.000288085	9.000129627	0.531099	0.00
40	4.3634061	0.25	0.25	0.000	0.000307471	9.298029759	0.548945	0.00
41	4.632869	0.27	0.27	0.000	0.000327333	9.593644142	0.56675	0.00
42	4.9050011	0.29	0.29	0.000	0.000347515	9.884977665	0.584359	0.00
43	5.1785737	0.30	0.30	0.000	0.000367902	10.17079509	0.601673	0.00
44	5.4526067	0.32	0.32	0.000	0.000388402	10.4503134	0.618633	0.00
45	5.726366	0.34	0.34	0.000	0.00040894	10.72306082	0.635201	0.00
46	5.9992946	0.35	0.35	0.000	0.000429462	10.98882061	0.651356	0.00
47	6.2709633	0.37	0.37	0.000	0.000449923	11.24755437	0.667091	0.00

FULL MODELLING CAN BE PROVIDED IF REQUIRED

Moohan Street Site, Wainuiomata

Sheet 4

Projec No: 18005

Description STAGE 1C ROUTING 1% AEP EVENT

Revision -

Date 7/12/2018

Calc ZB

Checked

Max allowable discharge 555 L/s

DN525 max discharge 430 L/s

Available pond reserve 1339 m2

INPUT HYDROGRAPH FROM MODELLING

(B) Tank Details

Tank Area	800.00	m2					G	9.8066	m/sec2
Tank Height	0.5	m2							
Orifice diameter	0.5	m	Area	0.19635	m2				
Orifice discharge coefficient		0.61			m	d2	0.25		
Max orifice head	1	m2							
							2g	19.6	m/sec2

SIMULATION		Max WL	Max Discharge	Max Volume
time step	1 min	0.48	367.52	362.31

Time	Tank Inflow		Tank storage	Tank WL	Adjusted Av WL	Tank Outflow		Net Device Storage
(mins)	l/s	m3	m3	m	m	l/s	m3	m3
0	0	0.00	0.00	0.000	0			0
1	0.00119198	0.00	0.00	0.000	2.23497E-08	0.079272876	0.002378	0.00
2	0.00705626	0.00	0.00	0.000	1.77004E-07	0	0.002378	0.00
3	0.02349798	0.00	0.00	0.000	7.27547E-07	0	0	0.00
4	0.05885778	0.00	0.00	0.000	2.68995E-06	0.869683565	0.026091	0.00
5	0.12136491	0.01	0.01	0.000	5.49624E-06	1.243144327	0.063385	0.00
6	0.21594347	0.01	0.01	0.000	9.70371E-06	1.651800647	0.086848	0.00
7	0.34372097	0.02	0.02	0.000	1.68182E-05	2.174598358	0.114792	0.00
8	0.50264862	0.03	0.03	0.000	2.63631E-05	2.722621866	0.146917	0.00
9	0.68867995	0.04	0.04	0.000	3.82068E-05	3.277625563	0.180007	0.00
10	0.8965316	0.05	0.05	0.000	5.20601E-05	3.825968486	0.213108	0.00
11	1.12013901	0.06	0.06	0.000	6.75353E-05	4.35766823	0.245509	0.00
12	1.35448093	0.07	0.07	0.000	8.42117E-05	4.866032302	0.276711	0.00
13	1.59609523	0.09	0.09	0.000	0.000101722	5.348070607	0.306423	0.00
14	1.84244545	0.10	0.10	0.000	0.000119796	5.803765108	0.334555	0.00
15	2.09162077	0.12	0.12	0.000	0.000138236	6.23447591	0.361147	0.00
16	2.34202749	0.13	0.13	0.000	0.000156895	6.641907735	0.386292	0.00
17	2.59243587	0.15	0.15	0.000	0.000175652	7.027736027	0.410089	0.00
18	2.84396211	0.16	0.16	0.000	0.000194454	7.3942959	0.432661	0.00
19	3.10220523	0.18	0.18	0.000	0.000213423	7.74657068	0.454226	0.00
20	3.37739956	0.19	0.19	0.000	0.000232983	8.093774583	0.47521	0.00
21	3.68447023	0.21	0.21	0.000	0.000253903	8.449332322	0.496293	0.00
22	4.03860764	0.23	0.23	0.000	0.000277218	8.828751801	0.518343	0.00
23	4.44909179	0.25	0.25	0.000	0.000303952	9.244668273	0.542203	0.00
24	4.9181557	0.28	0.28	0.000	0.00033478	9.702165845	0.568405	0.00
25	5.44213459	0.31	0.31	0.000	0.000369891	10.1982547	0.597013	0.00
26	6.01354619	0.34	0.34	0.000	0.000409049	10.72449094	0.627682	0.00
27	6.62267483	0.38	0.38	0.000	0.000451723	11.27002695	0.659836	0.00
28	7.25827883	0.42	0.42	0.001	0.000497197	11.82369007	0.692812	0.00
29	7.91086316	0.46	0.46	0.001	0.000544689	12.37551257	0.725976	0.00
30	8.57393413	0.49	0.49	0.001	0.000593511	12.91823839	0.758813	0.00
31	9.24271687	0.53	0.53	0.001	0.000643152	13.44762658	0.790976	0.00
32	9.91365277	0.57	0.57	0.001	0.000693244	13.96149351	0.822274	0.00
33	10.5837805	0.61	0.61	0.001	0.000743509	14.45878615	0.852608	0.00
34	11.2508388	0.66	0.66	0.001	0.000793726	14.93908768	0.881936	0.00
35	11.913178	0.69	0.69	0.001	0.000843724	15.40242448	0.910245	0.00
36	12.5695675	0.73	0.73	0.001	0.000893377	15.8491549	0.937547	0.00
37	13.2190881	0.77	0.77	0.001	0.000942589	16.27983157	0.96387	0.00
38	13.8610721	0.81	0.81	0.001	0.00099129	16.69510687	0.989248	0.00
39	14.4950525	0.85	0.85	0.001	0.00103943	17.09568357	1.013724	0.00
40	15.1207177	0.89	0.89	0.001	0.001086973	17.48228355	1.037339	0.00
41	15.7378676	0.93	0.93	0.001	0.001133894	17.85562419	1.060137	0.00

FULL MODELLING CAN BE PROVIDED IF REQUIRED

Moohan Street Site, Wainuiomata

Sheet 5

Projec No: 18005

Description STAGE 2A, 2C & 3B - 10%

Revision -

Date 5/04/2018

Calc ZB

Checked

Max allowable discharge 506 L/S

DN750 max discharge 1006 L/s

Available pond reserve 2210 m2

INPUT HYDROGRAPH FROM MODELLING

(B) Tank Details

Tank Area	1250.00	m2					G	9.8066	m/sec2
Tank Height	0.5	m2							
Orifice diameter	0.65	m	Area	0.3318315	m2				
Orifice discharge coefficient		0.61			m	d2	0.4225		
Max orifice head	1	m2							
							2g	19.6	m/sec2

SIMULATION		Max WL	Max Discharge	Max Volume
time step	1 min	0.20	396.23	221.18

Time	Tank Inflow		Tank storage	Tank WL	Adjusted Av WL	Tank Outflow		Net Device Storage
(mins)	l/s	m3	m3	m	m	l/s	m3	m3
0	0	0.00	0.00	0.000	0			0.00
1	0.00082602	0.00	0.00	0.000	9.91218E-09	0.08921958	0.002677	0.00
2	0.00489467	0.00	0.00	0.000	7.85604E-08	0	0.002677	0.00
3	0.01631461	0.00	0.00	0.000	3.2316E-07	0	0	0.00
4	0.04090128	0.00	0.00	0.000	1.19561E-06	0.97987547	0.029396	0.00
5	0.08441888	0.00	0.00	0.000	2.44494E-06	1.40123168	0.071433	0.00
6	0.15036392	0.01	0.01	0.000	4.32124E-06	1.86285671	0.097923	0.00
7	0.23961325	0.01	0.01	0.000	7.49712E-06	2.45370699	0.129497	0.00
8	0.35084251	0.02	0.02	0.000	1.17652E-05	3.07379606	0.165825	0.00
9	0.48133342	0.02	0.02	0.000	1.70716E-05	3.7026473	0.203293	0.00
10	0.62749602	0.03	0.03	0.000	2.32921E-05	4.32493388	0.240827	0.00
11	0.78518082	0.04	0.04	0.000	3.02581E-05	4.92942349	0.277631	0.00
12	0.95094177	0.05	0.05	0.000	3.77856E-05	5.50856658	0.31314	0.00
13	1.12239848	0.06	0.06	0.000	4.57136E-05	6.05895846	0.347026	0.00
14	1.29780158	0.07	0.07	0.000	5.39225E-05	6.5805232	0.379184	0.00
15	1.47584049	0.08	0.08	0.000	6.23261E-05	7.07473987	0.409658	0.00
16	1.65558209	0.09	0.09	0.000	7.08608E-05	7.54359618	0.43855	0.00
17	1.83653935	0.10	0.10	0.000	7.94825E-05	7.9893476	0.465988	0.00
18	2.01866313	0.12	0.12	0.000	8.81679E-05	8.41454616	0.492117	0.00
19	2.20223353	0.13	0.13	0.000	9.69132E-05	8.82199738	0.517096	0.00
20	2.38750619	0.14	0.14	0.000	0.000105728	9.2144569	0.541094	0.00
21	2.57449731	0.15	0.15	0.000	0.000114621	9.59417031	0.564259	0.00
22	2.76298363	0.16	0.16	0.000	0.000123594	9.96262645	0.586704	0.00
23	2.95254294	0.17	0.17	0.000	0.000132636	10.320633	0.608498	0.00
24	3.14266461	0.18	0.18	0.000	0.000141729	10.6685292	0.629675	0.00
25	3.332779	0.19	0.19	0.000	0.000150848	11.0063924	0.650248	0.00
26	3.52326812	0.21	0.21	0.000	0.000159978	11.3345808	0.670229	0.00
27	3.71606928	0.22	0.22	0.000	0.000169145	11.6547931	0.689681	0.00
28	3.91502084	0.23	0.23	0.000	0.000178445	11.9709283	0.708772	0.00
29	4.12652335	0.24	0.24	0.000	0.000188072	12.2895818	0.727815	0.00
30	4.35764207	0.25	0.25	0.000	0.000198309	12.6196166	0.747276	0.00
31	4.6145714	0.27	0.27	0.000	0.000209477	12.9700958	0.767691	0.00
32	4.90192163	0.29	0.29	0.000	0.000221864	13.3480974	0.789546	0.00
33	5.22125817	0.30	0.30	0.000	0.000235676	13.7573006	0.813162	0.00
34	5.57126851	0.32	0.32	0.000	0.000250988	14.1971893	0.838635	0.00
35	5.9482663	0.35	0.35	0.000	0.000267745	14.6634429	0.865819	0.00
36	6.34699508	0.37	0.37	0.000	0.000285778	15.1491944	0.894379	0.00
37	6.76242184	0.39	0.39	0.000	0.000304856	15.6467071	0.923877	0.00
38	7.18977154	0.42	0.42	0.000	0.000324739	16.1488991	0.953868	0.00
39	7.62495818	0.44	0.44	0.000	0.000345203	16.6499453	0.983965	0.00
40	8.065057	0.47	0.47	0.000	0.000366057	17.1454861	1.013863	0.00
41	8.50779605	0.50	0.50	0.000	0.000387154	17.6326502	1.043344	0.00

FULL MODELLING CAN BE PROVIDED IF REQUIRED

Moohan Street Site, Wainuiomata

Projec No: 18005

Description STAGE 2A, 2C & 3B - 1% ROUTING

Revision -

Date 5/04/2018

Calc ZB

Checked

Max allowable discharge 926 L./s

DN750 max discharge 1006 L/s

Available pond reserve 2210 m2

INPUT HYDROGRAPH FROM MODELLING

(B) Tank Details

Tank Area	1250.00	m2					G	9.8066	m/sec2
Tank Height	0.5	m2							
Orifice diameter	0.65	m	Area	0.3318315	m2				
Orifice discharge coefficient		0.61			m	d2	0.4225		
Max orifice head	1	m2							
							2g	19.6	m/sec2

SIMULATION

time step	1 min	Max WL	Max Discharge	Max Volume
		0.43	587.11	501.73

Time (mins)	Tank Inflow l/s	Tank Inflow m3	Tank storage m3	Tank WL m	Adjusted Av WL m	Tank Outflow l/s	Tank Outflow m3	Net Device Storage m3
0	0	0.00	0.00	0.000	0			0.00
1	0.002118093	0.00	0.00	0.000	2.54171E-08	0.1428692	0.004286	0.00
2	0.012528981	0.00	0.00	0.000	2.01182E-07	0	0.004286	0.00
3	0.04169337	0.00	0.00	0.000	8.26433E-07	0	0	0.00
4	0.104362743	0.00	0.01	0.000	3.05401E-06	1.56606828	0.046982	0.00
5	0.215041131	0.01	0.01	0.000	6.23619E-06	2.23787118	0.114118	0.00
6	0.382317498	0.02	0.02	0.000	1.10012E-05	2.97231289	0.156306	0.00
7	0.608016075	0.03	0.03	0.000	1.90523E-05	3.91155337	0.206516	0.00
8	0.888321447	0.04	0.04	0.000	2.98401E-05	4.89525452	0.264204	0.00
9	1.215891319	0.06	0.06	0.000	4.32066E-05	5.89047808	0.323572	0.00
10	1.581416328	0.08	0.08	0.000	5.88182E-05	6.87276527	0.382897	0.00
11	1.974747723	0.11	0.11	0.000	7.62417E-05	7.82477131	0.440926	0.00
12	2.388151284	0.13	0.13	0.000	9.50288E-05	8.73580648	0.496817	0.00
13	2.81723157	0.16	0.16	0.000	0.000114819	9.60247276	0.550148	0.00
14	3.259341524	0.18	0.18	0.000	0.000135383	10.4269743	0.600883	0.00
15	3.712250186	0.21	0.21	0.000	0.000156578	11.2134905	0.649214	0.00
16	4.173909281	0.24	0.24	0.000	0.000178293	11.9658249	0.695379	0.00
17	4.645419857	0.26	0.26	0.000	0.000200466	12.6880738	0.739617	0.00
18	5.132844936	0.29	0.29	0.000	0.000223171	13.3873459	0.782263	0.00
19	5.649156978	0.32	0.32	0.000	0.000246723	14.0760395	0.823902	0.00
20	6.212950205	0.36	0.36	0.000	0.000271729	14.7721505	0.865446	0.00
21	6.842950918	0.39	0.39	0.000	0.000299016	15.4961127	0.908048	0.00
22	7.552557162	0.43	0.43	0.000	0.000329417	16.2647887	0.952827	0.00
23	8.346193413	0.48	0.48	0.000	0.000363531	17.0862308	1.000531	0.00
24	9.21958161	0.53	0.53	0.000	0.000401574	17.9580196	1.051328	0.00
25	10.16258662	0.58	0.58	0.000	0.000443375	18.8695367	1.104827	0.00
26	11.16081665	0.64	0.64	0.001	0.000488467	19.8058293	1.160261	0.00
27	12.19855861	0.70	0.70	0.001	0.000536193	20.7508643	1.216701	0.00
28	13.26194416	0.76	0.76	0.001	0.000585839	21.6902446	1.273233	0.00
29	14.3399478	0.83	0.83	0.001	0.000636749	22.61307	1.329099	0.00
30	15.42493198	0.89	0.89	0.001	0.000688401	23.5123647	1.383763	0.00
31	16.511014	0.96	0.96	0.001	0.00074041	24.384373	1.436902	0.00
32	17.59368217	1.02	1.02	0.001	0.000792488	25.2273567	1.488352	0.00
33	18.66940734	1.09	1.09	0.001	0.000844413	26.0407235	1.538042	0.00
34	19.73557462	1.15	1.15	0.001	0.000896017	26.8246196	1.58596	0.00
35	20.7902915	1.22	1.22	0.001	0.00094717	27.5796969	1.632129	0.00
36	21.83218093	1.28	1.28	0.001	0.00099778	28.3069379	1.676599	0.00
37	22.86026432	1.34	1.34	0.001	0.001047779	29.0075018	1.719433	0.00
38	23.87387107	1.40	1.40	0.001	0.001097119	29.6826275	1.760704	0.00
39	24.87257443	1.46	1.46	0.001	0.001145767	30.3335773	1.800486	0.00
40	25.85611957	1.52	1.52	0.001	0.001193702	30.9615991	1.838855	0.00
41	26.82438315	1.58	1.58	0.001	0.00124091	31.5678996	1.875885	0.00

FULL MODELLING CAN BE PROVIDED IF REQUIRED

Attachment D – Hydrological Modelling Report

Memo

To:	Sheryl Barker, Cuttriss Consultants	From:	Ting Powell
Cc:	Zeean Brydon	Date:	10/12/2018
Subject:	Wainuiomata College & Intermediate sites Re-development Hydrology Model Built Update		

Introduction

This memo provides an addendum to the e2Environmental Model Build Memo dates 12/10/2018.

The model was updated in December 2018 for both the pre-development and post development scenarios for sub-catchments 3A, 3B, 2A and 2C.

Parameter

The model parameters were calculated based on *NZ0115163* and the SCS curve number map and Table 2 summarise the model parameters used for the pre and post development scenarios.

Table 1: Summary of pre-development SCS curve number method parameters.

Catchment	2A	2C	3A	3B
Catchment Area (ha)	0.218	1.591	2.392	1.800
% Impervious Area	45%	39%	0%	8.5%
Slope (%)	1.3	5.3	4.3	12.4
Curve Number	83.5	82.0	72.0	75.7
Initial Abstraction (mm)	5.00	5.59	9.88	8.15
Lag Time (hr)	0.10	0.10	0.10	0.10
Antecedent Moisture Condition	AMC II	AMC II	AMC II	AMC II

Table 2: Summary of post-development SCS curve number method parameters.

Catchment	2A	2C	3A	3B
Catchment Area (ha)	0.220	1.637	2.057	3.381
% Impervious Area	84%	65%	65%	65%
Slope (%)	1.3	5.3	4.3	12.4
Curve Number	93.7	88.9	88.9	89.8
Initial Abstraction (mm)	1.70	3.17	3.17	2.88
Lag Time (hr)	0.10	0.10	0.10	0.10
Antecedent Moisture Condition	AMC II	AMC II	AMC II	AMC II

Result

The model result shows that the pre-development peak runoff from sub-catchments 2A, 2C, 3A and 3B is 796 L/s and 1481 L/s for the 10% AEP and 1% AEP respectively. Additional runoff volume is 1343 m³ and 1696 m³ for the 10% AEP and 1% AEP respectively. Table 3 summaries the results.

Table 3: Total runoff volume and peak discharge rate for 10% AEP and 1% AEP storm events.

	Total Runoff		Peak Discharge Rate	
	m³		L/s	
	10% AEP	1% AEP	10% AEP	1% AEP
Pre-Development	4721	8980	796	1481
Post-Development	6064	10676	976	1664
Difference	1343	1696	180	183

Memo

To:	Sheryl Barker, Cuttriss Consultants	**From:**	Ting Powell
Cc:	Zeean Brydon	**Date:**	12/10/2018
Subject:	Wainuiomata College & Intermediate sites Re-development Hydrology Model Built		

Introduction

A hydrological model was created to assess the effect on runoff characteristics of the proposed re-development of the Wainuiomata College & Intermediate sites, Moohan street. The model result shows that for the 10% AEP storm event the pre-development peak runoff is 1337 L/s, and additional runoff is 2877 m³.

Model Description

Software

The model built used DHI MIKE Urban (2016 Pack 3, MOUSE engine).

Scenarios

The model was run for 10% AEP and 1%AEP storm events for both the pre-development and post development scenarios.

Catchment Delineation

The catchment was delineated based on proposed development stages. For both pre-development and post development scenarios, the catchment was divided into nine sub-catchments (see yellow polygons in Figure 1).

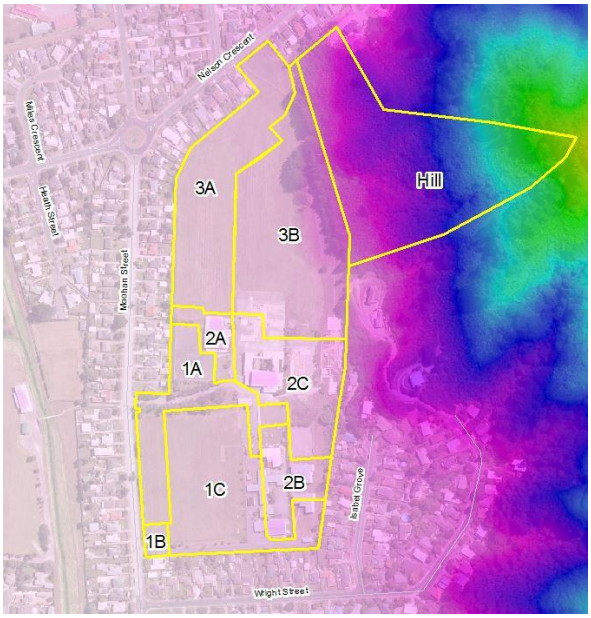


Figure 1:Post-development catchment delineation marked in yellow.

Method

The model built followed the method described in *Quick Reference Guide for Design Storm Hydrology NZ0115163* (2017) published by Wellington Water Limited. The guideline uses SCS Curve number method and 12-hou nested storm rainfall.

The hill catchment was not included in this assessment.

Parameter

The model parameters were calculated based on *NZ0115163* and the SCS curve number map and Table 2 summarise the model parameters used for the pre and post development scenarios.

Table 1: Summary of pre-development SCS curve number method parameters.

Catchment	**1A**	**1B**	**1C**	**2A**	**2B**	**2C**	**3A**	**3B**	**Hill**
Catchment Area (ha)	1.383	0.115	2.198	0.220	0.717	1.637	2.057	3.381	4.278
% Impervious Area	26%	16%	27%	44%	31%	38%	0%	5%	0%
Slope (%)	1.4	3.6	2.2	1.3	3.8	5.3	4.3	12.4	46.8
Curve Number	78.7	76.2	79.0	83.5	80.1	82.0	72.0	75.7	76.7
Initial Abstraction (mm)	6.89	7.91	6.77	5.00	6.33	5.59	9.88	8.15	7.71
Lag Time (hr)	0.10	0.10	0.15	0.10	0.10	0.10	0.10	0.10	0.20
Antecedent Moisture Condition	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II

Table 2: Summary of post-development SCS curve number method parameters.

Catchment	1A	1B	1C	2A	2B	2C	3A	3B	Hill
Catchment Area (ha)	1.383	0.115	2.198	0.220	0.717	1.637	2.057	3.381	4.278
% Impervious Area	65%	0%	65%	84%	53%	65%	65%	65%	0%
Slope (%)	1.4	3.6	2.2	1.3	3.8	5.3	4.3	12.4	46.8
Curve Number	88.9	72.0	88.9	93.7	85.8	88.9	88.9	89.8	76.7
Initial Abstraction (mm)	3.17	9.88	3.17	1.70	4.21	3.17	3.17	2.88	7.71
Lag Time (hr)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
Antecedent Moisture Condition	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II	AMC II

Nested Storm

The 12-hour nested storm distributions were generated based on NIWA HIRDS rainfall depth estimates, but climate change was included by increasing current rainfall depth by 16%. Figure 2 and Figure 3 show the rainfall depths used and the rainfall profiles generated.

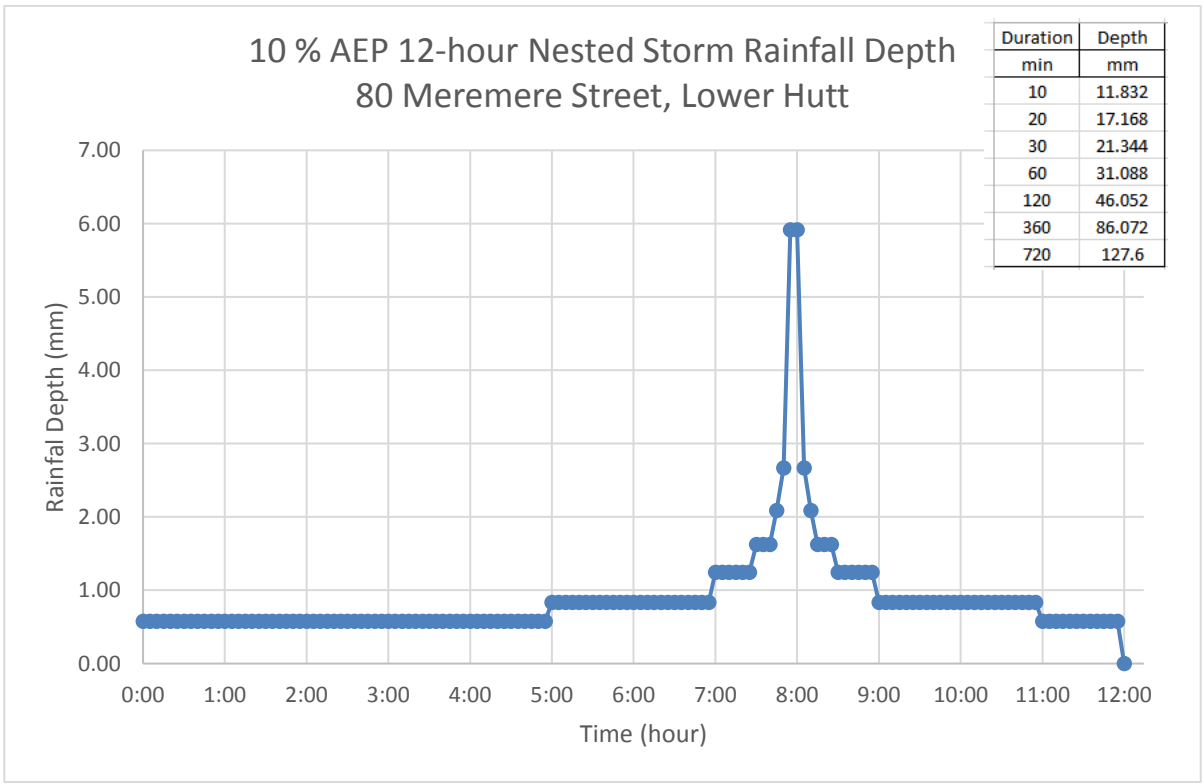


Figure 2: 10% AEP 12-hour nested storm profile and NIWA HIRDS rainfall depth estimates plus climate change (16% increase in depth).

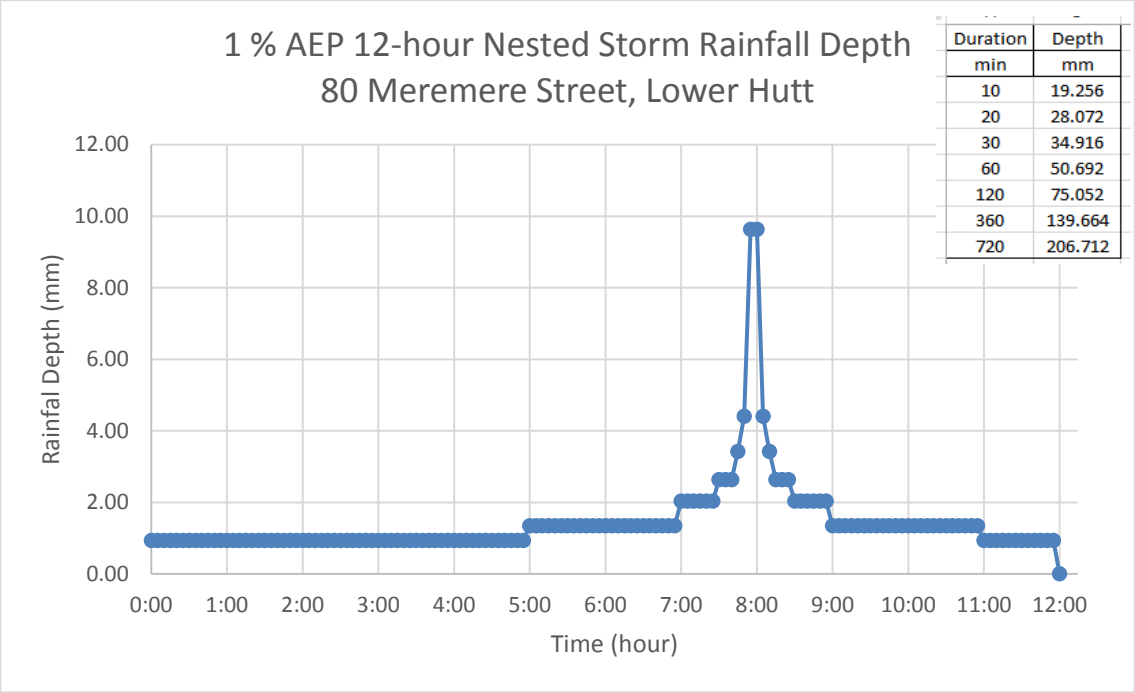


Figure 3: 1% AEP 12-hour nested storm profile and NIWA HIRDS rainfall depth estimates plus climate change (16% increase in depth).

Result

The model result shows that the pre-development peak runoff is 1928 L/s and 3197 L/s for the 10% AEP and 1% AEP respectively. Additional runoff volume is 2613 m³ and 3437 m³ for the 10% AEP and 1% AEP respectively. Table 3 summaries the results. Figures 4 and 5 show the outflow hydrographs for the 10% and 1% AEP respectively.

Table 3: Total runoff volume and peak discharge rate for 10% AEP and 1% AEP storm events.

	Total Runoff		Peak Discharge Rate	
	m³		L/s	
	10% AEP	1% AEP	10% AEP	1% AEP
Pre-Development	12502	23682	1928	3197
Post-Development	15115	27119	2279	3550
Difference	2613	3437	350	354

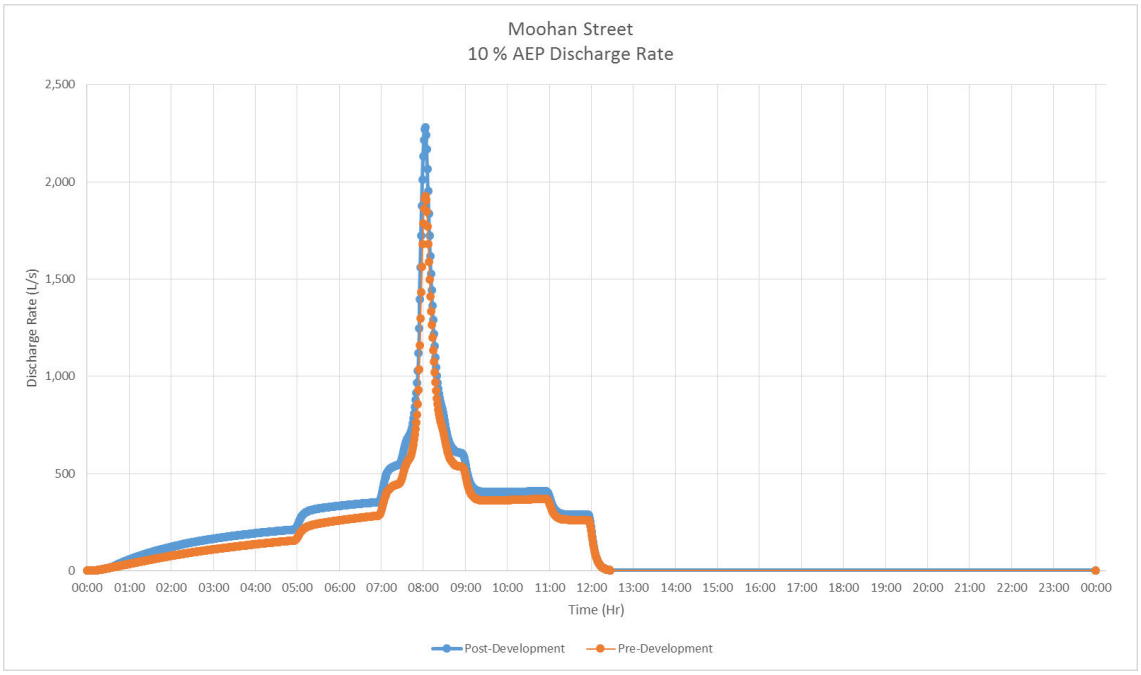


Figure 4: Discharge rate for 10% AEP storm event pre-development and post-development scenarios.

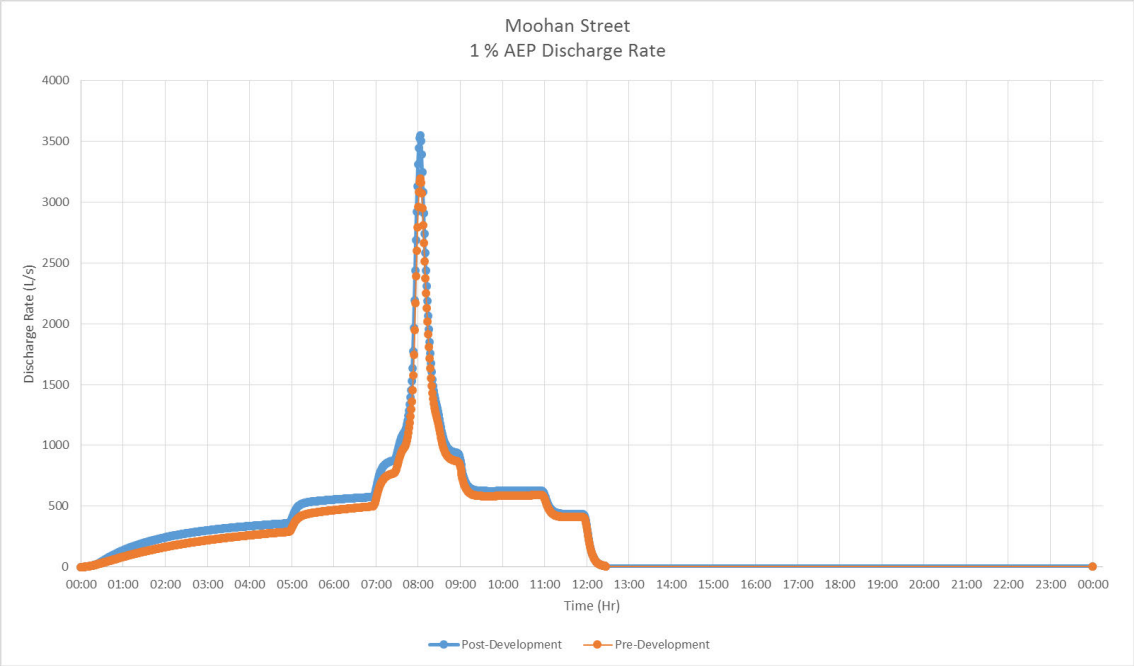
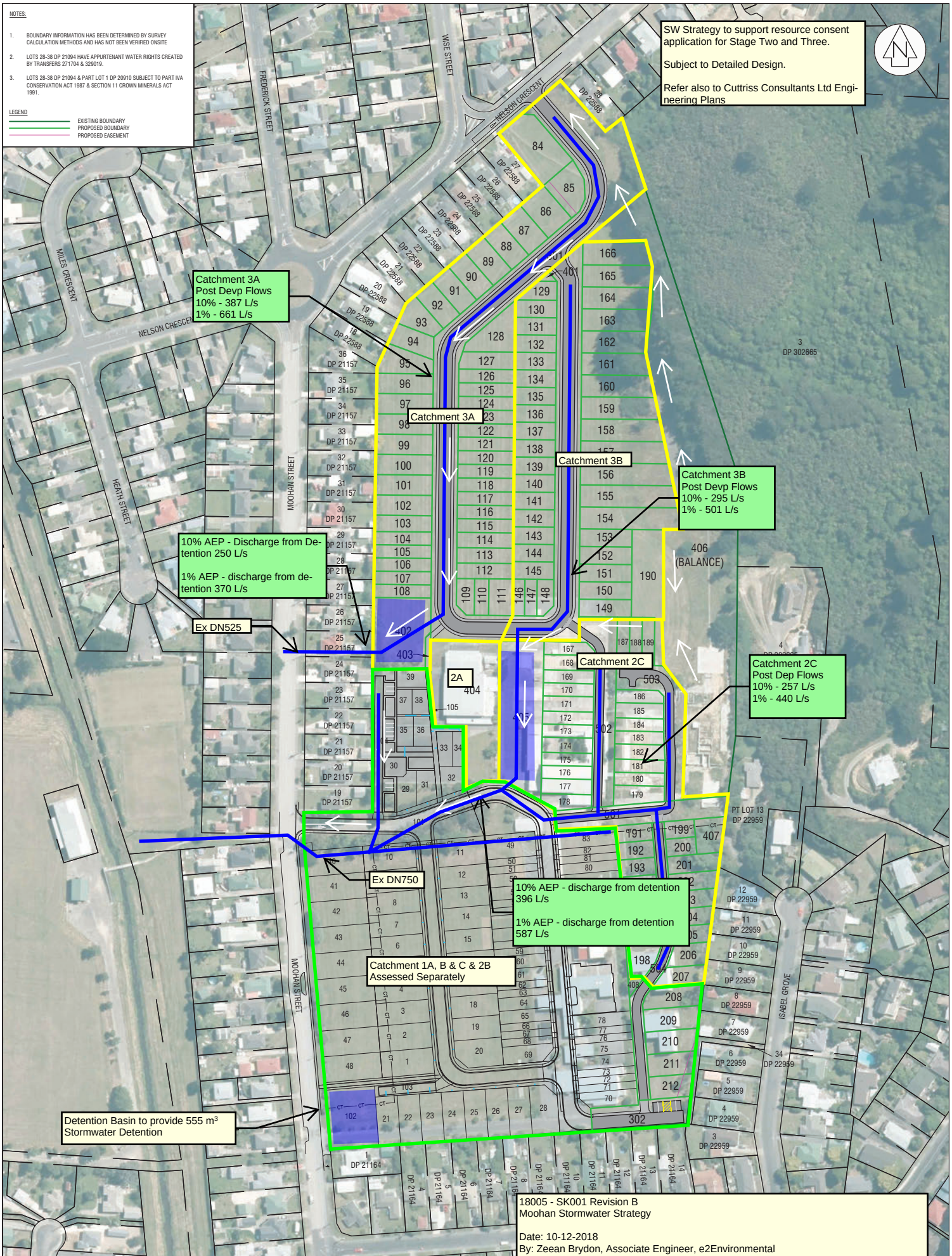


Figure 5: Discharge rate for 1% AEP storm event pre-development and post-development scenarios.



Cuttriss
Surveyors Engineers Planners
www.cuttriss.co.nz

JOB
PROPOSED SUBDIVISION OF LOTS 200 & 201 ON 29560SCH1
82 & 106 MOOHAN STREET, WAINUIOMATA
OVERALL LAYOUT

CLIENT
THE WELLINGTON COMPANY

SCALE	A1 1:1000	REDUCED SCALE 1:2000 AT A3	
	NAME	DATE	DRAWING NUMBER
FIELDWORK	DPS	12/16	29560SCH2
DESIGNED	SDP	11/18	
DRAWN	JAO	11/18	SHEET 5 OF 21 SHEETS
CHECKED	JHM	11/18	REVISION -

APPENDIX FIVE

DRAFT DESIGN GUIDELINES

WAINUIOMATA COLLEGE REDEVELOPMENT

[DEVELOPMENT NAME TO BE CONFIRMED]

DESIGN GUIDELINES

[DRAFT]

Ki te whakahou, whakapakari
me te whakanikoniko i te ahurea,
papori, rangatiratanga o
Taranaki Whanui ki Te Upoko o Te Ika

To restore, revitalise, strengthen
and enhance the cultural, social
and economic well-being of
Taranaki Whanui ki Te Upoko o Te Ika

DISCLAIMER

These Design Guidelines are for aesthetic purposes only. The guidelines; rules and restrictions set out in this document and the approval of dwelling and landscape plans submitted to the Design Review Panel are in addition to (and not in substation for) any rules or requirements imposed by Hutt City Council, the Building Act and Regulations, and any other applicable laws. In promulgating these Design Guidelines and approving dwelling and landscaping plans that [ ] Development Limited (or its associated entities) give no warranty as to the compliance of such law, or the quality or suitability of the dwelling.

INTRODUCTION

[NAME – To be confirmed] is a unique development opportunity that has been made possible by Taranaki Whanui (Port Nicholson Block Settlement Trust) and its development partner The Wellington Company Limited (TWC).

[ ] will deliver a modern New Zealand neighbourhood designed to provide a place to live that is attractive, fun, healthy and safe. A quality development driven by a vision to help families thrive.

What drives us is a desire to create a place which makes it easy to live well; where we have thought about creating both homes and community. The plan for this community provides an ideal balance between creating private spaces for you to relax with family and friends – and enjoyable places to be with your neighbours.

Now it's over to you.

The [ ] design guide will make your home building process as easy as possible and provide you with the information and recommendations for the form of your new property.

You will find everything that you need to know about the consents, sign off and legal requirements, and the mandatory requirements that help maintain home standard as and values at [ ].

INTENTIONS OF THE DESIGN GUIDELINES

The [ ] design guideline has been developed to assist you in the planning and development of your new home and should be read in conjunction with the covenants that are attached to your lot.

MASTER PLAN

[INSERT PLAN]

DESIGN APPROVAL PROCESS

The design approval process for [ ] is detailed as follows:

APPROVALS PROCESS

Prior to commencement of construction of your new home and submitting plans to Hutt City Council for Building Consent approval you are required to submit your plans to the [ ] design committee for approval.

The approval pack is to contain the following information:

- Full contact details of purchaser and builder
- Identification of stage and lot
- Building plans, which should include:
    - Site plan (location of building on lot (preferred option)
    - Floor plan
    - All elevations
- Exterior colours and finishes, including:
    - External wall
    - Roof
- Landscape plan
    - Proposed access from streets and right of ways
    - Off street parking
    - Location, height and finish of any fences
    - Location, species and grade of planting
- Location and finish of driveways and paths
- Signed copy of The [ ] construction rules
    - These rules are signed by the purchaser at the time of purchasing your lot from the [ ] developer.
    - If you do not have a copy of these rules we can provide you with a copy.

Submit your information to: Email admin@[ ],co.nz/ Post a copy to attn Project Manager PO BOX 24379 Wellington

HOUSING TYPOLOGY SUMMARY

[INSERT AGREED HOUSING TYPOLOGY TABLE]

KEY PRINCIPLES

- Only one house per lot is permitted or two houses if adjoined with a party wall.
- Houses are to be built from new materials
- No relocated homes are permitted

BUILDING DESIGN GUIDELINES

The following building and design guidelines are not intended to replace the Hutt City Council's planning rules.

- Where one residential dwelling is built on the Lot, a minimum floor area of
    - 1 bedroom – 45m2
    - 2 bedroom – 60m2
    - 3 bedroom – 110m2
    - 4 or more (scaled by 9m2 per additional bedroom) – 130m2

  in respect of the residential dwelling (including the garage (if any)
- The construction of a dwelling on the Lot must commence within two (2) years from the date of issue of the computer freehold register for the Lot and transfer by the developer.
- The Grantor must (and must procure its contractors, subcontractors, employees and/or agents (as the case may be) to) complete construction of the exterior to the Lot's primary dwelling, the Lots driveway and fencing within 12 months of the commencement of construction on the Lot.
- No caravan, boat and/or boat trailer, mobile home or other temporary accommodation, hut or shed for permanent or temporary use of any kind except a temporary builder's shed or other utility shed that is required during the course of construction of the residential dwelling.
- A garden shed is permitted provided that it is constructed in new permanent materials, appropriately painted, or be a new proprietary brand, precoated with a factory colour finish that will not detract from the visual amenity of the Development on the Land and which is in keeping with the colour and nature of the residential dwelling situated on the Lot; and must not be more than one storey in height or exceed 10m² in floor area.
- Where applicable, vehicle crossings constructed at the time of subdivision development are to be utilised. The establishment of an alternative crossing is not permitted.
- No transportable or relocatable dwelling of any kind is permitted.

- No home heating fuel tanks, gas cylinders, external water heaters, air-conditioning units or similar appliances used to monitor or control the temperature, humidity, or climate within a dwelling are to be erected on the front elevation of the residential dwelling.
- Any washing line or satellite dish erected must not be situated within the front yard of the Lot and screened from view if located within sightline of road
- Any pole or pile foundations are to be clad in a material visually compatible with the main cladding of the residential dwelling.

BUILDING MATERIALS / MATERIIALITY GUIDELINES

- Houses are to be built from high quality new building materials
- Exterior cladding shall compromise of a primary and secondary cladding, with the secondary cladding to cover at least 30% of the total exterior, and cover at least 30% of the front facade facing the street.
- Any unpainted cladding is not permitted
- Concrete driveways are permitted and to be finished as exposed aggregate, or are to be suitably coloured
- Any garages, outbuildings, fences or walls on the Lot must be in permanent materials of wood, brick or stone or other similar permanent materials.
  No unpainted galvanised iron for any garages, outbuildings, fences or walls are permitted.
- No unpainted galvanised iron or Zincalume® iron finishes, or any other similar material is permitted which could potentially contaminate the stormwater runoff.

The developers of [ ] have developed a set of typology options for [ ] and preferred location options by preference and choice.

A preferred pallet of materials and the composition of these materials are also provided as detailed below.

[MATERIALS PALETTLE TO BE INCLUDED]

STORMWATER DISPOSAL GUIDELINES

To reduce the environmental impact of the development, the installation of rain tanks are encouraged. If chosen, the minimum size to be provided is 1,550 litre combined detention and storage tank per dwelling. Tanks such as this can supplement garden irrigation and become an emergency water supply.

ENERGY CONSERVATION GUIDELINES

All houses within [INSERT PROJECT NAME] will be designed to incorporate energy efficient design by:

- Being located on the site to maximise solar passive design

- Utilise materials (where practicable) that will ensure the home is energy efficient in design and delivery.
- Will utilise technologies which are energy efficient and sustainable.

LANDSCAPE DESIGN GUIDELINES

All housing developments within [INSERT PROJECT NAME] must include an element of landscaping that is in keeping with the development.

When submitting a landscape plan you need to show the following:

- All fences, paths, driveways and their construction materials;
- The location of clothes lines and sheds
- Identify areas of grass and gardens and nominate the heights of plantings specified

FENCING AND RETAINING GUIDELINES

- Front yard fencing materials should complement/be consistent with the materials of the dwellings
- Fences cannot exceeds 1.2 metres in height in front of the residential dwelling which has its front boundary adjoining a street; and
- Fences cannot exceeds 1.8 metres in height along the side boundary of a Lot,
- All fencing running parallel to any lot boundary that is adjacent to the western boundary shall be the black swimming pool fencing of the permitted fencing options on page x of this guide.
- If the Lot is accessed by an Access Way, then a fence not exceeding 1.8 metres in height on all boundaries of the Lot is permitted.

[INSERT EXAMPLES OF FENCE OPTIONS]

[INSERT EXAMPLES OF RETAINING STRUCTURES]

APPENDIX SEVEN

GEOTECHNICAL REPORT

10/10/2013

Carrus Properties Ltd
c/o Jeff Needham,
Land Development Manager,
Harrison Grierson,
PO Box 2313,
Corporate Mail Centre,
Wellington 6140

Attention: Jeff Needham

Dear Jeff,

RE: Wainuiomata Intermediate Development Geotechnical Feasibility Study

This report represents the results of a Geotechnical Feasibility Study on the above site in accordance with Coffey Geotechnics (NZ) Limited proposal dated 11 September 2013 .It has been prepared for Carrus Properties Ltd in accordance with their instructions.

If you have any queries or you require any further clarification on any aspects of this report, please do not hesitate to contact the undersigned.

For and on behalf of Coffey Geotechnics (NZ) Ltd

Kah-Weng Ho

Principal Geotechnical Engineer

Distribution: Electronic Copy for Carrus Properties Ltd
Original held by Coffey Geotechnics (NZ) Limited

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CONTENTS

1 INTRODUCTION

1.1 Project Brief

In September 2013 Coffey Geotechnics (NZ) Limited was commissioned by Carrus Properties Ltd to undertake a geotechnical investigation at 82-104 Moohan Street, Wainuiomata for the purposes of a geotechnical feasibility study for a potential development of the Wainuiomata Intermediate School site for residential dwellings.

This report presents the results of a Geotechnical Desk Top Study (Stage 1) of the site, details of a site investigation carried out on 26 September 2013 (Stage 2), and the findings and assessment of the investigation (Stage 3), as outlined in Coffey Geotechnics Proposal dated 11 September 2013.

1.2 Objectives

The objectives of this report were to determine the likely subsurface conditions beneath the site in respect of:

- Suitability of the site for the development of residential dwellings
- Shallow quantitative liquefaction assessment
- Suitability of the material for fill

1.3 Report Layout

Section 2 of this report provides details of the site geology, existing information and relevant previous site usage.

Section 3 discusses the site investigation

Section 4 evaluates the ground conditions

Section 5 provides the geotechnical assessment of the site

Section 6 suggests further works

Section 7 provides conclusions and recommendations from the works above.

2 THE SITE

2.1 Site Location and Description

The subject site is located at 82-104 Moohan Street, Wainuiomata, Lower Hutt at the eastern side of the Wainuiomata Basin. A site location map is included in Appendix A and site photographs in Appendix B. The Black Creek is located ~150m east of the site.

The site is a flat grassed field which was part of the former Wainuiomata Intermediate School grounds. To the west of the field is the carpark and former intermediate school building and on the northern boundary is the former Wainuiomata College site. Moohan Street is to the east and the driveway up to the school and residential properties are to the south.

The site is level and elevated ~0.5m above Moohan Street. Along the eastern boundary, a ~2m high embankment slopes up towards the carpark. At the base of the embankment is a drainage ditch. The embankment continues along the southern boundary adjacent to the driveway, with the embankment decreasing in height towards Moohan Street. Large trees are scattered around the site boundary, including on the eastern embankment. The ground surface was very boggy with surface water present across much of the site.

2.2 Geology

The geology of the site is shown on the 1:50,000 scale Geology of the Wellington Area, 1996. The map indicates the site is underlain by *"Alluvium, including subsurface Waiwhetu Artesian Gravel; solifluxion deposits; loess; swamp sediments; and minor tephra, principally Kawakawa Tephra"*. This map also indicates that Wellington Belt Greywacke is ~150m east of the site and a small area of fan deposits <100m east.

A GNS borehole WS-1 is located ~700m west of the site. This log and associated paper on the subsurface sediments at Wainuiomata[1] indicates layers of alluvial silty and sandy gravel 5 to 20 metres thick interbedded with swamp and lacustrine deposits comprising organics silt and peat 10 to 30 metres thick. A copy of the log is included in Appendix C. A summary of the geology anticipated at the Wainuiomata Intermediate School site is summarised in Table 1 below and is based on the results of WS-1 and the relative position of the site in relation to the Greywacke hills and the borehole information.

Table 1 – Anticipated Site Geology

Strata	Depth (anticipated)
Fill	0-1m
Alluvial: silty and sandy gravel	1-3m
Silt and peat interbedded with sandy and silty gravel	3-30m
Wellington Greywacke Basement	30m+

From the GNS Database – Active Faults, the nearest fault is the Whiteman's Valley Fault 510m to the southeast. The Wellington Fault is approximately 7.3km to the northwest.

2.3 Existing Site Information

From the Greater Wellington Regional Council website hazard map, the following risks have been identified:

- Earthquake Ground Shaking – High
- Earthquake Liquefaction – Moderate

[1] J.G. Begg, D.C. Mildenhall, G.L. Lyon, W.R. Stephenson, R.H. Funnell, R.J. Van Dissen, S. Bannister, L.J. Brown, B. Pillans, M.A. Harper & J. Whitten (1993) A paleoenvironmental study of subsurface Quaternary sediments at Wainuiomata, Wellington, New Zealand, and tectonic implications, New Zealand Journal of Geology and Geophysics, 36:4, 461-473, DIO 10.1080/00288306.1993.9514592

- Earthquake Induced Slope Failure – Low
- Combined Earthquake Hazard – High

The site has not been identified on the Selected Land Use Register by the Greater Wellington Regional Council. The nearest site identified on this register is ~500m southwest of the site.

3 SITE INVESTIGATION

3.1 General

The ground investigation for this report was carried out on 26 September 2013 and involved the following:

- 4 trial pits (TP) to a depth of 4.0 to 4.2mbgl (metres below ground level)
- 5 hand augers (HA) to a depth of 1.0 to 2.7mbgl
- 9 dynamic cone penetrometer (DCP) tests to a depth of 1.0 to 2.6mbgl. These were conducted adjacent to the above trial pits and hand augers

The location of the trial pits, hand augers and DCP testing is shown on the site plan in Appendix A.

All exploratory hole locations were cleared by Service Locators prior to drilling.

Trial pit, hand auger and DCP logs are included in Appendix D.

A tabulated summary of subsoil strata, measured groundwater levels and typical strengths are presented later in this report.

4 GROUND CONDITIONS

4.1 General

The following information should be read in conjunction with the completed trial pit, hand auger and DCP logs in Appendix C and the test location plan in Appendix A.

4.2 Site Profile

4.2.1 General

The hand auger, trial pit and DCP information indicates that topsoil approximately 0.2m thick was encountered across the site. Fill comprising silt and silty sand was encountered in some investigation locations at between 0.5 and 1.1m depth with the thickness generally increasing towards the north western corner of the site.

Beneath this, the upper 2 to 2.5m of the site is comprised of silt and silty clay. This is underlain by alluvial fan deposits comprising silty and sandy gravels with pockets of sand and silty clay.

Perched groundwater was encountered at depths of 0.4 to 2.8mbgl, with multiple inflows observed in the trial pits. The groundwater table was not encountered in this investigation.

Table 2 below summaries the typical ground conditions identified beneath the site.

Table 2 – Summary of Geotechnical Investigation Findings

Depth (metres)	Summary of Ground Conditions
0 to 0.2/0.5	TOPSOIL
0.2/0.5 to 1.1	FILL: stiff to very hard clayey to sandy SILT and dense silty SAND
0.2/1.1 to 2.0/2.6	ALLUVIUM: stiff to hard clayey SILT. silty CLAY and SILT
2.0/2.6 to 4.2+	FAN ALLUVIUM: medium dense to dense SILTY AND SANDY GRAVEL with pockets of sand, silty sand and soft to firm and silty clay; blue grey

4.3 Subsoil Profile

4.3.1 Fill

Fill consisting of stiff to hard silt, clayey silt, sandy silt and silty sand was encountered beneath the topsoil to a depth of 0.5 to 1.1mbgl in some investigation locations along the northern and western sides of the site. The depth of fill appears to increase towards the north western corner of the site, with no fill at the south and south eastern areas of the site. The transition from fill to natural ground as based on hand auger records is approximate only due to the nature of hand auger sampling.

4.3.2 Alluvium

Alluvium consisting predominately of silt, clayey silt and silty clay was encountered between 0.2 and 2.6mbgl. This material is stiff to hard with a low to medium plasticity. Bands approximately 200mm thick of sandy silt and dense fine to coarse sand were encountered at some of the investigation locations.

4.3.3 Fan alluvium

Fan material comprising silty and sandy gravel was encountered between 2.0 and 4.2mbgl. Based on visual observation, this material is likely medium dense to dense. Zones of medium dense to dense sand, silty sand and soft to firm silty clay with some organics is present throughout this layer.

4.4 Summary of Site Condition

The ground conditions at the site are highly variable. While there is a consistent general subsoil profile of silty alluvial material overlying gravelly alluvial fan material, the nature of these materials, particularly relating to consistency, density and strength are inconsistent. The silt material is generally stiff to hard, however DCP results in the upper ~2m vary between 2 and 15+ blows per 100mm. The gravelly material is typically silty to sandy medium dense to dense material. However, within these are pockets/lenses of silty clay material with some organic material and sandy layers.

The site was very boggy during the site walkover, and discussions with the site manager and the extensive field drain network indicate that this is common. Multiple groundwater inflows were encountered in the site investigation at between 0.4 and 2.8mbgl with groundwater typically encountered at a shallower depth along the eastern side of the site.

Shallow groundwater inflows are likely from seepage off the hill side east of the site. These seepage onsite would need to be controlled via subsurface drainage prior to any development at the site.

5 PRELIMINARY GEOTECHNICAL ASSESSMENT

5.1 General

From the information gathered during the site investigation and from existing available information, a preliminary geotechnical assessment of the following issues has been carried out:

- Seismic response characteristics of the site.
- Site liquefaction potential.
- CBR
- Suitability of Material for reuse
- Foundation Recommendations

The geotechnical assessment provides general guidelines.

5.2 Preliminary Site Seismic Response

Site Seismic Response has been calculated utilising; NZS 1170.5:2004, Structural Design Actions, Part 5: Earthquake actions – New Zealand.

The Site Subsoil Class has been classified as Class C (Shallow soil site), based on the depth to bedrock and thickness and strength of the overlying soils. The depth to bedrock has been estimated at approximately 20 to 30m based on the borehole WS-1 and outcropping greywacke bedrock in the hills to the east of the site.

In addition, near fault affects will need to be considered due to the proximity of the Wellington Fault for all structures based on guidelines from NZS 1170.5:2004.

5.3 Preliminary Shallow Liquefaction Assessment

Based on the Guidelines from NZGS, "*Geotechnical Earthquake Engineering Practice, July 2010*", the upper 4m of the site is considered to have a low liquefaction risk. Factors that support this assessment include:

- Groundwater greater than 4m below ground, only shallow perched groundwater inflows (0.4 to 2.0mbgl);
- Silts are stiff to hard and cohesive in nature;
- Presence of fine to medium sand and silty sand zones

The liquefaction potential below 4.2 metres has not been assessed, but is considered likely to be moderate to high based on the following:

- The Greater Wellington Regional Council website hazard map identified this area as "moderate" risk of liquefaction.
- The Wainuiomata area is a former swamp and river gully
- GNS borehole WS-1 identifies silts, organic silts and clayey silts at between 4 and 30mbgl.

Based on this information, it is recommended that a deep liquefaction assessment be carried out on the site as outlined in Section 6.2 below. After the Canterbury Earthquake Sequence, any site that has been identified by GWRC to have moderate-high liquefaction potential, the Hutt City Council is likely to request a deep liquefaction assessment as part of the consent process.

5.3.1 Lateral Spreading

Based on the proximity to the Black Creek, the shallow subsoil profile and anticipated deeper profile, the lateral spreading risk at the site is likely to be:

- Lateral Stretch (across the building footprint) – minor
- Global Lateral Spreading – moderate with movement towards the east

A more accurate assessment of the lateral spreading risk would be carried out with the detailed liquefaction assessment.

5.4 CBR

Based on DCP results and the Stockwell relationship, the CBR values at the site range from 5% to 40% at approximately 0.5mbgl. The ground is variable and localised soft spots are anticipated throughout the profile; these should be excavated and replaced with engineered fill.

5.5 Suitability of Material for Re-use

Of the material encountered in the upper 4 metres of the site, topsoil and the silty, sandy and gravelly material is suitable for reuse. Clayey material and that containing some or more organics (excluding topsoil) is not suitable for reuse and should be removed from site or used for landscaping.

5.6 Foundation Recommendations

The site in general does not meet the definition of 'good ground' based on NZS3604.2011. Therefore specific engineering design would be required for the proposed dwellings.

A shallow raft foundation solution such as a waffle slab founded within the stiff to hard silty layer would likely be an appropriate solution at this site. A resilient, relevellable foundation solution would also address the variability of the site which may result in large differential settlements should liquefaction occur.

Some DCP results associated with the hand auger tests indicate 'good ground' may be present from 1mbgl. However, as the site is variable, 'good ground' cannot be identified at this stage. In order to identify potential lots which may be 'good ground' 1mbgl, additional shallow investigation as outlined in Section 6.3 below will be required.

If no further assessment is done at the site, a resilient design strategy would be recommended to address the potential liquefaction risk and associated settlement. The resilient design would incorporate the following components:

- Lightweight buildings materials, particularly with respect to cladding and roofing.

- A relevellable surface structure foundation solution such as the surface structures with shallow foundations as specified in the Canterbury MBIE Guidance[2] Section 15.4.
- Service connections at the outside of the foundations.

If a more detailed liquefaction assessment is carried out as outlined in Section 6.2 below, a foundation solution that best addresses the potential liquefaction and estimated settlement can be identified and applied using the MBIE Guidance[2]. This may result in a less robust foundation solution being required, likely using a combination NZS3604.2011 and Canterbury MBIE Guidance[2] solution.

6 RECOMMENDED FUTURE WORKS

If you wish to proceed with this subdivision, we recommend the following works after development of the subdivision plans.

6.1 Deep Investigation

We recommend a deep site investigation consisting of 2 machined drilled boreholes to 20m is conducted with standard penetration tests (SPTs) at 1 meter centres. This would better characterise the site and may identify competent founding layers at greater than 4 meters depth. A piezometer should be installed in one of the boreholes to identify the depth to the water table. These would also be required to a deep liquefaction assessment.

6.2 Deep Liquefaction Assessment

A detailed liquefaction assessment to identify the liquefaction risk at depth is recommended as discussed in Section 5.3 above. The 2 cored boreholes should be supplemented with laboratory testing such as Atterburg Limit and Particle Size Distribution tests of samples taken from this investigation. The number and type of testing would depend on the nature of the subsoils encountered. We anticipate 4 to 8 tests may be required. A detailed liquefaction assessment using LiquefyPro software would identify liquefiable layers within the profile and quantify the expected liquefaction induced settlement at the site. Lateral spreading at the site would also be assessed.

6.3 Shallow Investigation

A shallow ground investigation comprising approximately 8 hand augers and DCP tests may identify areas of the site where ‘good ground’ is met. These could be conducted at the same time as the deep investigation to reduce costs.

6.4 Approximate Cost

Approximate costs are listed below. We will be glad to provide a detailed quote for this work should you choose to go ahead with it.

[2] Ministry of Business, Innovation and Employment (MBIE), December 2012: Repairing and rebuilding houses affected by the Canterbury Earthquakes, Part C

Item	Description	Estimated Cost
1	2 cored boreholes with SPTs	$17,000
2	Laboratory testing	$5,000
3	Assessment and reporting	$6,000
	Estimated Total Costs	$28,000

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

- The site comprises alluvium generally consisting of silt overlying silty and sandy gravel with soft silty clay inclusions
- Fill comprising of silty material covers most of the site except the southern end
- Seepage is occurring on the site with water inflows recorded at between 0.4 and 2.8m
- The shallow liquefaction risk at the site is low, however it is anticipated that the liquefaction potential at greater than 4 meters depth is moderate to high.
- Site subsoil class is likely a Class C.
- CBR values vary at the site from 5% to 40%
- Much of the site material can be reused except for clayey and organic material
- The site is suitable for land development
- The site is generally suitable for residential dwellings, subject to the discussed geotechnical issues being addressed.

7.2 Recommendations

- A shallow, resilience designed foundation with lightweight cladding and roof is recommended for the proposed dwellings due to the potentially moderate to high deep liquefaction risk and variable ground conditions
- A deep investigation comprising 2 boreholes to 20m deep with SPTs and a piezometer to identify the water table, potentially liquefiable layers and potential bearing layers at depth.
- Laboratory tests and a deep liquefaction assessment based on these 2 boreholes to better categorise and quantify the liquefaction and associated settlement.
- Further shallow investigation works comprising approximately 8 hand augers and DCPs to identify if specific areas of the site meet NZS3604.2011 definition of ‘good ground’.

8 LIMITATIONS

This report has been prepared solely for the use of our client, Carrus Properties Ltd, their professional advisers and the relevant Territorial Authorities in relation to the specific project described herein. No liability is accepted in respect of its use for any other purpose or by any other person or entity. All future owners of this property should seek professional geotechnical advice to satisfy themselves as to its ongoing suitability for their intended use.

The opinions, recommendations and comments given in this report result from the application of normal methods of site investigation. As factual evidence has been obtained solely from trial pits, hand augers and DCPs which by their nature only provide information about a relatively small volume of subsoils, there may be special conditions pertaining to this site which have not been disclosed by the investigation and which have not been taken into account in the report.

If variations in the subsoils occur from those described or assumed to exist then the matter should be referred back to us immediately.

For and on behalf of Coffey Geotechnics (NZ) Limited

Prepared By:

Sarah Martin

Project Engineering Geologist

Reviewed / Authorised By:

Kah-Weng Ho

Principal Geotechnical Engineer

Appendix B

Site Photographs

Photo 1 - View of the site looking west towards Moohan Street

Photo 2 - View of the site looking north towards the former College

drawn	S. MARTIN	coffey	client:	Carrus Properties Ltd	
approved	KWH		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	9/10/2013		title:	**SITE PHOTOGRAPHS**	
scale	N.T.S.		project no: GENZWELL16045AA	fig no: **PHOTOFILE 1**	rev:
original size	A4				

Photo 3 - View of the site looking east towards the former Intermediate School buildings and the eastern hills

Photo 4 - Water ponding on site

drawn	S. MARTIN	coffey	client:	Carrus Properties Ltd	
approved	KWH		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	9/10/2013		title:	**SITE PHOTOGRAPHS**	
scale	N.T.S.		project no: GENZWELL16045AA	fig no: **PHOTOFILE 2**	rev:
original size	A4				

TP01 - western face of trial pit 1

drawn	S. MARTIN	coffey	client:	Carrus Properties Ltd	
approved	KWH		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	10/10/2013		title:	**TRIAL PIT PHOTOGRAPHS** **TP01**	
scale	N.T.S.		project no: GENZWELL16045AA	fig no: **PHOTOFILE 3**	rev:
original size	A4				

TP02 - western face of trial pit 2

drawn	**S. MARTIN**	coffey	client:	Carrus Properties Ltd	
approved	**KWH**		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	**10/10/2013**		title:	**TRIAL PIT PHOTOGRAPHS** **TP02**	
scale	**N.T.S.**		project no: GENZWELL16045AA	fig no: **PHOTOFILE 4**	rev:
original size	**A4**				

TP03 - trial pit 3 - looking south

drawn	S. MARTIN	coffey	client:	Carrus Properties Ltd	
approved	KWH		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	10/10/2013		title:	**TRIAL PIT PHOTOGRAPHS** **TP03**	
scale	N.T.S.		project no: GENZWELL16045AA	fig no: **PHOTOFILE 5**	rev:
original size	A4				

TP04 - Southern face of TP04

drawn	S. MARTIN	coffey	client:	Carrus Properties Ltd	
approved	KWH		project:	Wainuiomata Intermediate Development 82-104 Moohan Street, Wainuiomata	
date	10/10/2013		title:	**TRIAL PIT PHOTOGRAPHS** **TP04**	
scale	N.T.S.		project no: GENZWELL16045AA	fig no: **PHOTOFILE 6**	rev:
original size	A4				

Appendix C

Borehole log from WS-1

NEW ZEALAND GEOLOGICAL SURVEY
ENGINEERING GEOLOGY SECTION

SUMMARY LOG OF DRILL HOLE

HOLE NO. WS1

PROJECT .... FEATURE .... LOCATION WAINUIOMATA FIRE STATION

GRID REF. R27/7327 9259 M.W.D. CO-ORD. .... DATUM ~86 m amsl

ANGLE FROM HORIZONTAL 90° DIRECTION .... H.A.D. GROUND .... H.A.D. COLLAR ....

DESCRIPTION OF CORE: Inferred environment of deposition	14C? / palynology	Fossil Record Number	Depth (m)	Inferred age (provisional age)
FILL				
FLUVIAL/OVERBANK	palyn.	R27/f172	2	← shards (scattered)
rhyolitic ash			4	← shards
SWAMP (lake continuing upwards? Margaret Harper)			6–14	POST GLACIAL
			14	?4000
	palyn.	R27/f170	~15	
	palyn.	R27/f171	~15	
LACUSTRINE			16–24	← 23·5 scattered shards
	palyn.	R27/f173	~25.5	
	palyn. 14C	R27/f174	26	24291 ± 890 yr BP
SWAMP	14C	R27/f175	~27	19937 ± 1200 yr BP
			30	?8–9000
FLUVIAL			32–34	?10000
			36	?20000
FLOODPLAIN/SWAMP (ZONE OF TEPHRA BEDS)	palyn.	R27/f176	38	61000 ± 11000 yr BP >49 000
			39·9	← 39·9 no shards
			42	GLACIAL
FLUVIAL	14C	R27/f177	48	53900 ± 4400 yr BP >49 000
?PALEOSOL			~51	?60000 LAST INTERGLACIAL
FLUVIAL/COLLUVIAL			52–61	
UNCONFORMITY			~61.5	
GREYWACKE BASEMENT			62–66	TRIASSIC–JURASSIC

check sample

GRAPHIC LOG | DATE/DEPTH | R.Q.D. % | WATER LEVEL | DRILL WATER LOSS % 0–100 | WATER PRESSURE TESTS – Lugeons or PERMEABILITY–10⁻⁵cm/s

DRILLER: D. PRESTON
STARTED: 28 MAY 1991
FINISHED: 2 JUNE 1991
DRILL: FAILING CFIS

ROCK WEATHERING: UW – Unweathered; SW – Slightly weathered; MW – Moderately weathered; HW – Highly weathered; CW – Completely weathered

ROCK HARDNESS: VH – Very hard; H – Hard; MH – Moderately hard; MS – Moderately soft; S – Soft; VS – Very soft

FRACTURE LOG (cms): Spacing of natural fractures; Fractures/m of core

EXPLANATION: ■ core loss

LOGGED: LTB; JGB
DATE: JUNE 1991
TRACED: JGB
CHECKED: ....
ORIGINAL VERTICAL SCALE: 1:200
SHEET 1 OF 1
PROJECT: Wainuiomata
HOLE NO: WS1
LENGTH: 64·9 m
CORE BOXES: ....
DRG NO ....

Appendix D

Field Investigation Data

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Soil Description Explanation Sheet (1 of 2)

DEFINITION:

In engineering terms soil includes every type of uncemented or partially cemented inorganic or organic material found in the ground. In practice, if the material can be remoulded or disintegrated by hand in its field condition or in water it is described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL & SOIL NAME

Soils are broadly described in accordance with the Unified Soil Classification System (UCS) as shown in the table on Sheet 2. However, there are some departures from this and reference should be made to the New Zealand Geotechnical Society 'Field Description of Soil and Rock' 2005 for clarification.

PARTICLE SIZE DESCRIPTIVE TERMS

NAME	SUBDIVISION	SIZE
Boulders		>200 mm
Cobbles		60 mm to 200 mm
Gravel	coarse	20 mm to 60 mm
	medium	6 mm to 20 mm
	fine	2 mm to 6 mm
Sand	coarse	600 μm to 2 mm
	medium	200 μm to 600 μm
	fine	60 μm to 200 μm

MOISTURE CONDITION

Dry	Looks and feels dry. Cohesive and cemented soils are hard, friable or powdery. Uncemented granular soils run freely through hands.
Moist	Soil feels cool and darkened in colour. Cohesive soils can be moulded. Granular soils tend to cohere.
Wet	As for moist but with free water forming on hands when handled.

CONSISTENCY OF COHESIVE SOILS

TERM	UNDRAINED STRENGTH s_u (kPa)	FIELD GUIDE
Very Soft	<12	Easily exudes between fingers when squeezed.
Soft	12 - 25	Easily indented by fingers.
Firm	25 - 50	Indented by strong finger pressure & can be indented by thumb pressure.
Stiff	50 - 100	Cannot be indented by thumb pressure.
Very Stiff	100 - 200	Can be indented by thumb nail.
Hard	200 - 500	Difficult to indent by thumb nail.

DENSITY OF GRANULAR SOILS

TERM	DENSITY INDEX (%)	SPT N-value (Blows / 300mm)
Very loose	Less than 15	Less than 4
Loose	15 - 35	4 - 10
Medium Dense	35 - 65	10 - 30
Dense	65 - 85	30 - 50
Very Dense	Greater than 85	Greater than 50

MINOR COMPONENTS

FRACTION	TERM	% OF SOIL MASS	EXAMPLE
Major	(...) [UPPER CASE]	≥ 50 [major constituent]	GRAVEL
Subordinate	(...)y [lower case]	20 - 50	Sandy
Minor	with some... with minor...	12 - 20 5 - 12	with some sand with minor sand
	with trace of (or slightly) ...	< 5	with trace of sand (slightly sandy)

SOIL STRUCTURE

ZONING		CEMENTING	
Layers	Continuous across exposure or sample.	Weakly cemented	Easily broken up by hand in air or water.
Lenses	Discontinuous layers of lenticular shape.	Moderately cemented	Effort is required to break up the soil by hand in air or water.
Pockets	Irregular inclusions of different material.		

GEOLOGICAL ORIGIN

WEATHERED IN PLACE SOILS	
Extremely weathered material	Structure and fabric of parent rock visible.
Residual soil	Structure and fabric of parent rock not visible.

TRANSPORTED SOILS	
Aeolian soil	Deposited by wind.
Alluvial soil	Deposited by streams and rivers.
Colluvial soil	Deposited on slopes (transported downslope by gravity).
Fill	Man made deposit. Fill may be significantly more variable between tested locations than naturally occurring soils.
Lacustrine soil	Deposited by lakes.
Marine soil	Deposited in ocean basins, bays, beaches and estuaries.

coffey

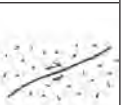
Soil Description Explanation Sheet (2 of 2)

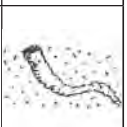
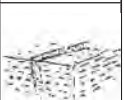
SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 60 mm and basing fractions on estimated mass)							USC	PRIMARY NAME
COARSE GRAINED SOILS More than 50% of materials less than 60 mm is larger than 0.06 mm	(A 0.06 mm particle is about the smallest particle visible to the naked eye)	GRAVELS More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVELS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes.			GW	GRAVEL
				Predominantly one size or a range of sizes with more intermediate sizes missing.			GP	GRAVEL
			GRAVELS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below)			GM	SILTY GRAVEL
				Plastic fines (for identification procedures see CL below)			GC	CLAYEY GRAVEL
		SANDS More than half of coarse fraction is smaller than 2.36 mm	CLEAN SANDS (Little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate sizes			SW	SAND
				Predominantly one size or a range of sizes with some intermediate sizes missing.			SP	SAND
			SANDS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).			SM	SILTY SAND
				Plastic fines (for identification procedures see CL below).			SC	CLAYEY SAND
FINE GRAINED SOILS More than 50% of material less than 60 mm is smaller than 0.05 mm			IDENTIFICATION PROCEDURES ON FRACTIONS <0.2 mm.					
		SILTS & CLAYS Liquid limit less than 50	**DRY STRENGTH**	**DILATANCY**	**TOUGHNESS**			
			None to Low	Quick to slow	None		ML	SILT
			Medium to High	None	Medium		CL	CLAY
			Low to medium	Slow to very slow	Low		OL	ORGANIC SILT
		SILTS & CLAYS Liquid limit greater than 50	Low to medium	Slow to very slow	Low to medium		MH	SILT
			High	None	High		CH	CLAY
			Medium to High	None	Low to medium		OH	ORGANIC CLAY
HIGHLY ORGANIC SOILS			Readily identified by colour, odour, spongy feel and frequently by fibrous texture.				Pt	PEAT

• Low plasticity – Liquid Limit w_L less than 35%. • Medium plasticity – w_L between 35% and 50%. • High plasticity – w_L greater than 50%.

COMMON DEFECTS IN SOIL

TERM	DEFINITION	DIAGRAM
PARTING	A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (eg bedding). May be open or closed.	
JOINT	A surface or crack across which the soil has little or no tensile strength but which is not parallel or sub parallel to layering. May be open or closed. The term 'fissure' may be used for irregular joints <0.2 m in length.	
SHEARED ZONE	Zone in clayey soil with roughly parallel near planar, curved or undulating boundaries containing closely spaced, smooth or slickensided, curved intersecting joints which divide the mass into lenticular or wedge shaped blocks.	
SHEARED SURFACE	A near planar curved or undulating, smooth, polished or slickensided surface in clayey soil. The polished or slickensided surface indicates that movement (in many cases very little) has occurred along the defect.	

TERM	DEFINITION	DIAGRAM
SOFTENED ZONE	A zone in clayey soil, usually adjacent to a defect in which the soil has a higher moisture content than elsewhere.	
TUBE	Tubular cavity. May occur singly or as one of a large number of separate or inter-connected tubes. Walls often coated with clay or strengthened by denser packing of grains. May contain organic matter.	
TUBE CAST	Roughly cylindrical elongated body of soil different from the soil mass in which it occurs. In some cases the soil which makes up the tube cast is cemented.	
INFILLED SEAM	Sheet or wall like body of soil substance or mass with roughly planar to irregular near parallel boundaries which cuts through a soil mass. Formed by infilling of open joints.	

coffey

Engineering Log - Excavation

Excavation ID.	***TP01***
sheet:	1 of 1
project no.	***GENZWELL16045AA***
client: ***Carrus Properties Ltd***	date excavated: ***26 Sep 2013***
principal:	date completed: ***26 Sep 2013***
project: ***Wainuiomata Intermediate Development***	logged by: ***S. Martin***
location: ***see Test Location Plan***	checked by: ***NKC***

position: E: 1763523; N: 5430595 (NZTM) surface elevation : 80.00m (NZTM) pit orientation:

equipment type: 13 tonne excavator Track excavation method: Test Pit excavation dimensions: 3.8 m long 1.5 m wide

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
E	N				80.0				**TOPSOIL**	W	F			**TOPSOIL**
					79.5	0.5		ML	**SILT**: low liquid limit, grey and orange, minor clay, trace rootlets.	M	H			**ALLUVIUM** no DCP data
								SP	**SAND**: fine to medium grained, orange, minor silt; lenses ~100mm thick of fine to medium sub-rounded gravel with some sand.	W	MD to D			
								ML	**SILT**: low liquid limit, orange, some fine sand.		H			
				VS 101/ 28 kPa	79.0	1.0		ML	**SILT**: low liquid limit, grey brown, some clay and minor fine sand.		St			DCP from within trial pit
					78.5	1.5								
					78.0	2.0		GM	**Silty GRAVEL**: fine to coarse grained, sub-rounded to angular, blue grey, minor sand.	S	MD to D			**FAN ALLUVIUM**
					77.5	2.5								
					77.0	3.0								
					76.5	3.5								
					76.0	4.0		SP	**SAND**: fine to medium grained, blue grey, some fine to coarse, sub-angular to sub-rounded gravel and silt.					
					75.5	4.5			Test pit TP01 terminated at 4.2 m Target depth					

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shearpeak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Excavation

Excavation ID.	***TP02***
sheet:	1 of 1
project no.	***GENZWELL16045AA***
client: ***Carrus Properties Ltd***	date excavated: ***26 Sep 2013***
principal:	date completed: ***26 Sep 2013***
project: ***Wainuiomata Intermediate Development***	logged by: ***S. Martin***
location: ***see Test Location Plan***	checked by: ***NKC***

position: E: 1763522; N: 5430722 (NZTM) surface elevation : 80.00m (NZTM) pit orientation:

equipment type: 13 tonne excavator Track excavation method: Test Pit excavation dimensions: 3.2 m long 1.6 m wide

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
E	N				80.0				**TOPSOIL**	M	F			**TOPSOIL**
				VS 104/ 14 kPa	79.5	0.5		ML	**FILL: SILT**: low liquid limit, pale grey mottled orange, some clay, trace coarse, sub-rounded gravel.		St			**FILL**
				VS >200 kPa				ML	**FILL: SILT**: low liquid limit, brown, minor clay.		VSt			
					79.0	1.0		ML	**SILT**: low liquid limit, pale grey mottled orange, minor fine sand.		St to VSt			**ALLUVIUM**
				VS 79/ 14 kPa						W				
			▶		78.5	1.5			- orange brown and grey					
					78.0	2.0		ML	**Clayey SILT**: low liquid limit, brown.					
					77.5	2.5		GP / CL	**POCKETS Sandy GRAVEL**: gravel is fine to coarse grained, sub-rounded to angular, pale grey, minor silt, sand is fine to coarse; bands of silty fine sand; pockets of silty CLAY, low plasticity, purple grey, soft to firm, some organics and minor fine, angular gravel.	S	MD to D			**FAN ALLUVIUM**
					77.0	3.0								
					76.5	3.5								
					76.0	4.0		GM	**Silty GRAVEL**: fine to coarse grained, sub-rounded to angular, blue grey, some fine to coarse sand.					
									Test pit TP02 terminated at 4.10 m Target depth					
					75.5	4.5								

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shearpeak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Excavation

		Excavation ID.	***TP03***
		sheet:	1 of 1
		project no.	***GENZWELL16045AA***
client:	***Carrus Properties Ltd***	date excavated:	***26 Sep 2013***
principal:		date completed:	***26 Sep 2013***
project:	***Wainuiomata Intermediate Development***	logged by:	***S. Martin***
location:	***see Test Location Plan***	checked by:	***NKC***

position: E: 1763485; N: 5430652 (NZTM) surface elevation : 81.00m (NZTM) pit orientation:

equipment type: 13 tonne excavator Track excavation method: Test Pit excavation dimensions: 3.6 m long 1.2 m wide

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	DCP (blows/ 100 mm)	structure and additional observations
E	N				81.0				**TOPSOIL**	M	VSt to H			**TOPSOIL**
					80.5	0.5		ML	**FILL: SILT**: low liquid limit, pale grey mottled orange, minor medium to coarse, sub-rounded to rounded gravel and trace clay.					**FILL**
								ML	**FILL: SILT**: low liquid limit, brown mottled orange, minor clay.		H			no DCP data
			▶		80.0	1.0		ML	**SILT**: low liquid limit, brown and grey mottled orange, minor clay.	S				**ALLUVIUM** DCP from within trial pit
					79.5	1.5								
								ML	**SILT**: low liquid limit, blue grey mottled orange, some clay and minor fine sand.	W				
			▶		79.0	2.0								
					78.5	2.5		SM	**Silty SAND**: fine grained, grey, minor orange mottling.	M	MD to D			**FAN ALLUVIUM**
			▶					GW / CL	**Sandy GRAVEL**: gravel is fine to coarse grained, sub-rounded to angular, grey, some silt; sand is fine to coarse; pockets of silty CLAY, low plasticity, grey, soft to firm, minor fine sand.		S to F			
					78.0	3.0				S	MD and F			
					77.5	3.5								
					77.0	4.0			Test pit TP03 terminated at 4.0 m Target depth					
					76.5	4.5								

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shearpeak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Excavation

Excavation ID.	***TP04***
sheet:	1 of 1
project no.	***GENZWELL16045AA***
client: ***Carrus Properties Ltd***	date excavated: ***26 Sep 2013***
principal:	date completed: ***26 Sep 2013***
project: ***Wainuiomata Intermediate Development***	logged by: ***S. Martin***
location: ***see Test Location Plan***	checked by: ***NKC***

position: E: 1764337; N: 5430713 (NZTM) surface elevation : 84.00m (NZTM) pit orientation:

equipment type: 13 tonne excavator Track excavation method: Test Pit excavation dimensions: 3.5 m long 1.5 m wide

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 2 4 6 8 10	structure and additional observations
E	N		▶		84.0				**TOPSOIL**	W	S			**TOPSOIL**
					83.5	0.5		ML	**FILL: SILT**: low liquid limit, brown and grey mottled orange, minor fine to coarse gravel.	M	VSt			**FILL**
					83.0	1.0		ML	**FILL: SILT**: low liquid limit, dark brown, some clay, minor organics including tree stumps, trace coarse gravel and cobbles and plastic bags.	M to W	St to VSt			no DCP data
								CL	**Silty CLAY**: low plasticity, grey mottled orange.					**ALLUVIUM** DCP from within trial pit
					82.5	1.5								
					82.0	2.0								
									- dark brown, some organics and minor fine sand		VSt			
					81.5	2.5		ML	**Gravelly SILT**: low liquid limit, grey, some fine sand.	S	MD to D			**FAN ALLUVIUM**
								GM	**Silty GRAVEL**: fine to coarse grained, sub-rounded to angular, blue grey.					
					81.0	3.0			- minor silt and trace cobbles					
								SP	**SAND**: fine to medium grained, blue grey, minor fine to coarse gravel and trace organics.					
					80.5	3.5								
					80.0	4.0			Test pit TP04 terminated at 4.0 m Target depth					
					79.5	4.5								

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shearpeak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

coffey

Engineering Log - Borehole

Borehole ID.	**HA01**
sheet:	1 of 1
project no.	**GENZWELL16045AA**
client:	**Carrus Properties Ltd**
date started:	**26 Sep 2013**
principal:	
date completed:	**26 Sep 2013**
project:	**Wainuiomata Intermediate Development**
logged by:	**J. Moll**
location:	**see Test Location Plan**
checked by:	**NKC**

position: E: 1763474; N: 5439584 (NZTM) surface elevation : 82.00m (NZTM) angle from horizontal: 90°

drill model: Hand auger and DCP mounting: hole diameter : 50 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	shear vane ⊕ remoulded ⊙ peak (kPa) 50 100 150 200	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
HA, N		▶		82				**TOPSOIL**	M	F			**TOPSOIL**
					0.5		ML	**SILT**: low to medium liquid limit, brown grey, some fine to medium sand and clay. -clay content and moisture increasing		VSt	⊕ ⊕		**ALLUVIUM**
				81	1.0		CL-Cl	**Silty CLAY**: low to medium plasticity, grey brown, trace fine to medium sand.	M to W		⊙		
							SP	**SAND**: fine to coarse grained, blue grey, some fine to medium sub-angular to sub-rounded gravel and silt.		D			
					1.5			Hand Auger HA01 terminated at 1.5 m Refusal					
				80	2.0								
					2.5								
				79	3.0								
					3.5								
				78	4.0								
					4.5								

CDF_0_9_04AQ.GLB Log COF BOREHOLE: NON CORED + DCP GENZWELL16045AA WAINUIOMATA INTERMEDIATE DEVELOPMENT LOGS.GPJ <<DrawingFile>> 09/10/2013 18:14

method
AD auger drilling*
AS auger screwing*
RR roller/tricone
W washbore
CT cable tool
HA hand auger
DT diatube
B blank bit
V V bit
T TC bit
* bit shown by suffix
e.g. AD/T

support
M mud N nil
C casing

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
U## undisturbed sample ##mm diameter
D disturbed sample
B bulk disturbed sample
E environmental sample
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shearpeak/remouded (uncorrected kPa)
R refusal

classification symbol & soil description
based on Unified Classification System

moisture
D dry
M moist
W wet
S saturated

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Borehole

Borehole ID.	**HA02**
sheet:	1 of 1
project no.	**GENZWELL16045AA**
client:	**Carrus Properties Ltd**
date started:	**26 Sep 2013**
principal:	
date completed:	**26 Sep 2013**
project:	**Wainuiomata Intermediate Development**
logged by:	**J. Moll**
location:	**see Test Location Plan**
checked by:	**NKC**

position: E: 1763438; N: 5430581 (NZTM) surface elevation : 81.00m (NZTM) angle from horizontal: 90°

drill model: Hand auger and DCP mounting: hole diameter : 50 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	shear vane ⊕ remoulded ⊙ peak (kPa) 50 100 150 200	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
HA, N				81				**TOPSOIL**	M	F			**TOPSOIL**
					0.5		ML	**Clayey SILT**: low liquid limit, orange brown and grey, trace fine, sub-angular to sub-rounded gravel and fine to medium sand.		St to VSt			**ALLUVIUM**
		▶		80	1.0			- becoming orange brown, clay content decreasing, gravel absent		VSt			
							CL-Cl	**Silty CLAY**: low to medium plasticity, pale orange, trace fine to medium sand.		H			
					1.5			Hand Auger HA02 terminated at 1.5 m Refusal					
				79	2.0								
					2.5								
				78	3.0								
					3.5								
				77	4.0								
					4.5								

CDF_0_9_04AQ.GLB Log COF BOREHOLE: NON CORED + DCP GENZWELL16045AA WAINUIOMATA INTERMEDIATE DEVELOPMENT LOGS.GPJ <<DrawingFile>> 09/10/2013 18:14

method
AD auger drilling*
AS auger screwing*
RR roller/tricone
W washbore
CT cable tool
HA hand auger
DT diatube
B blank bit
V V bit
T TC bit
* bit shown by suffix
e.g. AD/T

support
M mud N nil
C casing

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
U## undisturbed sample ##mm diameter
D disturbed sample
B bulk disturbed sample
E environmental sample
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear peak/remouded (uncorrected kPa)
R refusal

classification symbol & soil description
based on Unified Classification System

moisture
D dry
M moist
W wet
S saturated

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Borehole

Borehole ID.	**HA03**
sheet:	1 of 1
project no.	**GENZWELL16045AA**
client:	**Carrus Properties Ltd**
date started:	**26 Sep 2013**
principal:	
date completed:	**26 Sep 2013**
project:	**Wainuiomata Intermediate Development**
logged by:	**J. Moll**
location:	**see Test Location Plan**
checked by:	**NKC**

position: E: 1763441; N: 5430653 (NZTM) surface elevation : 81.00m (NZTM) angle from horizontal: 90°

drill model: Hand auger and DCP mounting: hole diameter : 50 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	shear vane ⊕ remoulded ⊙ peak (kPa) 50 100 150 200	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
HA N		▶		81				**TOPSOIL**	W	F			**TOPSOIL**
					0.5		ML	**FILL: Clayey SILT**: low to medium liquid limit, orange brown and grey, some fine to medium sand.	S	VSt to H	⊕		**FILL**
							ML	**FILL: Sandy SILT**: low to medium liquid limit, orange brown, some fine to medium sub-angular to sub-rounded gravel and clay.	M		SV UTP		
											SV UTP		
				80	1.0		CL-Cl	**Silty CLAY**: low to medium plasticity, blue grey mottled orange brown, some fine to coarse, sub-angular to sub-rounded gravel and fine to medium sand.		H	⊕		**ALLUVIUM**
					1.5			- predominately blue grey			SV UTP		
				79	2.0			- blue grey and brown; gravel absent					
					2.5			- trace fine to medium, sub-angular to subrounded gravel					
				78	3.0			Hand Auger HA03 terminated at 2.7 m Refusal					
					3.5								
				77	4.0								
					4.5								

CDF_0_9_04AQ.GLB Log COF BOREHOLE: NON CORED + DCP GENZWELL16045AA WAINUIOMATA INTERMEDIATE DEVELOPMENT LOGS.GPJ <<DrawingFile>> 09/10/2013 18:14

method
AD auger drilling*
AS auger screwing*
RR roller/tricone
W washbore
CT cable tool
HA hand auger
DT diatube
B blank bit
V V bit
T TC bit
* bit shown by suffix
e.g. AD/T

support
M mud N nil
C casing

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
U## undisturbed sample ##mm diameter
D disturbed sample
B bulk disturbed sample
E environmental sample
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shearpeak/remouded (uncorrected kPa)
R refusal

classification symbol & soil description
based on Unified Classification System

moisture
D dry
M moist
W wet
S saturated

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Borehole

Borehole ID.	**HA04**
sheet:	1 of 1
project no.	**GENZWELL16045AA**
client:	**Carrus Properties Ltd**
date started:	**26 Sep 2013**
principal:	
date completed:	**26 Sep 2013**
project:	**Wainuiomata Intermediate Development**
logged by:	**J. Moll**
location:	**see Test Location Plan**
checked by:	**NKC**

position: E: 1763525; N: 5430652 (NZTM) surface elevation : 83.00m (NZTM) angle from horizontal: 90°

drill model: Hand auger and DCP mounting: hole diameter : 50 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	shear vane ⊕ remoulded ⊙ peak (kPa) 50 100 150 200	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
HA N		Not Observed		83	0.0			**TOPSOIL**	M	F to St			**TOPSOIL**
							ML	**FILL: SILT**: low liquid limit, orange brown and grey, minor clay.		H			**FILL**
					0.5		ML	**Clayey SILT**: low to medium liquid limit, brown grey mottled orange.			SV UTP		**ALLUVIUM**
							ML	**SILT**: low liquid limit, orange brown and grey, minor clay.			SV UTP		
							SP	**SAND**: orange brown, some silt and clay, trace fine gravel.		D to VD	⊕ ⊙		
				82	1.0			Hand Auger HA04 terminated at 1.0 m Refusal					
					1.5								
				81	2.0								
					2.5								
				80	3.0								
					3.5								
				79	4.0								
					4.5								

CDF_0_9_04AQ.GLB Log COF BOREHOLE: NON CORED + DCP GENZWELL16045AA WAINUIOMATA INTERMEDIATE DEVELOPMENT LOGS.GPJ <<DrawingFile>> 09/10/2013 18:14

method
AD auger drilling*
AS auger screwing*
RR roller/tricone
W washbore
CT cable tool
HA hand auger
DT diatube
B blank bit
V V bit
T TC bit
* bit shown by suffix
e.g. AD/T

support
M mud N nil
C casing

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
U## undisturbed sample ##mm diameter
D disturbed sample
B bulk disturbed sample
E environmental sample
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shearpeak/remouded (uncorrected kPa)
R refusal

classification symbol & soil description
based on Unified Classification System

moisture
D dry
M moist
W wet
S saturated

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey

Engineering Log - Borehole

Borehole ID.	**HA05**
sheet:	1 of 1
project no.	**GENZWELL16045AA**
client:	**Carrus Properties Ltd**
date started:	**26 Sep 2013**
principal:	
date completed:	**26 Sep 2013**
project:	**Wainuiomata Intermediate Development**
logged by:	**J. Moll**
location:	**see Test Location Plan**
checked by:	**NKC**

position: E: 1763481; N: 5430718 (NZTM) surface elevation : 83.00m (NZTM) angle from horizontal: 90°

drill model: Hand auger and DCP mounting: hole diameter : 50 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	shear vane ⊕ remoulded ⊙ peak (kPa) 50 100 150 200	DCP (blows/ 100 mm) 2 4 6 8 10	structure and additional observations
HA N				83	0			**TOPSOIL**	M	F to St			**TOPSOIL**
							ML	**FILL: Sandy SILT**: low liquid limit, orange brown, sand is fine to coarse.	D to M	VSt			**FILL**
					0.5		SM	**FILL: Silty SAND**: fine to coarse grained, orange brown and grey, some fine to coarse, sub-angular to sub-rounded gravel.	D	D			
							ML	**FILL: Sandy SILT**: low liquid limit, orange brown and grey, some low to medium plasticity clay; sand is fine to medium.	M	VSt			
				82	1.0		CL-Cl	**Silty CLAY**: low to medium plasticity, brown.		St			**ALLUVIUM**
							ML	**Clayey SILT**: low to medium liquid limit, orange brown and grey, some fine to medium sand.		VSt			
					1.5			- predominately orange brown		St			
							ML	**Sandy SILT**: low to medium liquid limit, orange brown, sand is fine to medium.	M to W				
				81	2.0		CL-Cl	**Silty CLAY**: low to medium plasticity, brown, trace fine to medium sand.					
							CL-Cl	**Silty CLAY**: low to medium plasticity, blue grey, some fine to coarse sand.	W	S			2.2 to 3.6m no to poor recover hand auger able to be pushed through layer
					2.5								
				80	3.0								
					3.5								
								Hand Auger HA05 terminated at 3.6 m Refusal inferred to have terminated at the top of a gravel layer					
				79	4.0								
					4.5								

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e.g. AD/T

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M mud N nil
C casing

penetration
1 2 3 no resistance ranging to refusal

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water outflow

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Nc SPT with solid cone
VS vane shearpeak/remouded (uncorrected kPa)
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