

12 November 2019

The Manager
Tasman District Council
Private Bag 4
RICHMOND

Gary Rae Consulting Limited
PO Box 57
Motueka
gary@rae-consulting.nz

Attention: Jennifer Lancashire

Dear Jennifer

RM190790 Integrity Care Group - Olive Estate Response to RFI

Introduction

This is a response to your request for further information (RFI) dated 6 August 2019, on the above application for resource consent.

It also takes account of your e-mail dated 12 September 2019, in which the issue of the activity classification was discussed in light of Council's decision on the Oakwoods application. This is addressed further below under Issue 1.

Issue 1: Activity

(a) Letter of 6 August 2019:

The activity meets the definition of a Comprehensive Residential Development as acknowledged in s5.8 of the AEE. However, the AEE only considers the activity against the Community Activity standards of the TRMP. It is acknowledged that RM190928 did not include an assessment against the Comprehensive Residential Development standards of the TRMP. However, that is not to say that the same approach should be applied to this application.

Please amend the AEE to include an assessment of the activity against the Comprehensive Residential Development rule in the TRMP (17.1.3.4) and provide an assessment of the matters of discretion listed under 17.1.3.4 (1) – (39).

(b) E-mail of 12 September 2019:

...as the definitions for CDs and CRDs are similar and the applicable rules somewhat convoluted there is often some ambiguity as to whether CD or CRD applies to a particular development. However, the main issue here is that self-contained units in retirement villages are classed as one or other of them.

So either rule 17.1.3.4A or 17.1.4.B applies (as well as the community activity rule for the care facility aspect of the proposal). As there is no TRMP definition or assistance from TDC in respect

of what is considered a compact density SD ... I am happy for you to address this in your s92 response

Response:

There is clearly some ambiguity around how a retirement village should be treated in terms of the definitions in the TRMP.

The first point to note is that the Applicant in this case is simply relying on the way the application was assessed for the original establishment of this retirement village, and this current application is essentially to make changes to that existing consented activity and to also extend the same activity onto an adjoining Residential zoned parcel of land. I have responded to you by separate e-mails that that is a reasonable position for Integrity Care Group to take, for reasons of consistency, and also as the residents all place reliance of varying degrees on care provided by Olive Estate.

Having regard to the advice you have given in your e-mail dated 12 September 2019, it is clear that Council wishes the application to also be processed as having a residential component, whether that be a compact density development (CDD) or a comprehensive residential development (CRD) (in addition to the Community Facility component). You have left it open for us to respond on this.

I do not consider the activity is able to be assessed as a CRD, as Rule 17.1.3.4A(a)(v) states that these developments cannot be within the Richmond South development area. To suggest it is a CRD would seem at odds with the decision of TDC to grant consent to Olive Estate when it first established on this site in the Richmond South development area.

Further it would make no sense to classify the activity as a CRD where there is another definition (CDD) that has been developed specifically for comprehensive developments within the Richmond South development area. Therefore, whilst the Applicant maintains that the entire village should be treated as a Community Facility, if that position is not accepted, I consider that the activity should be assessed as a CDD. I have therefore now also assessed the application under those rules for land use and for subdivision (see **Attachment 1**).

The way the relevant rules are framed, for the restricted discretionary rule to apply, all buildings are to be located within a title that has been approved as part of a compact density subdivision (refer to Rule 17.1.3.4B(c) below).

“Where the activity is a compact density development, all buildings are located within a title that has been approved as part of a compact density subdivision under rules 16.3.3.3, 16.3.3.4 or 16.3.3.7.

Note: Subdivision condition 16.3.3.3(a) requires that for compact density development both the land use and subdivision consents are lodged with Council at the same time and assessed together.”

We have not been able to obtain any advice from you or officers on what “a *title that has been approved as part of a compact density subdivision*” means in practice, and there is no definition of what a CDD subdivision entails.

It seems logical, however, that a CDD subdivision is any subdivision done as part of a CDD (including a boundary adjustment, which the plan classifies as a subdivision).

This is supported by the fact that the Standard Density Subdivision Rule applies to “*subdivision for standard density development.*” A “standard density development” is defined as meaning “*residential development that is not compact density development, comprehensive residential development or intensive development.*” As such, if the development is for a CDD, then the standard density subdivision rule does not apply, and the applicable rule must therefore be the CDD subdivision rule 16.3.3.3.

I consider that 17.1.3.4B(c) is complied with as the Council will be approving the subdivision as part of the CDD application. The Note to this rule makes it clear that the TRMP anticipates that the subdivision and land use applications will be applied for at the same time, as has been done here, by Integrity Care Group. This is consistent with the whole rule framework for CDDs. See for example rule 16.3.3.3(a)i)(b) which states that “... *for the avoidance of doubt, this means that both land use and subdivision consents must be applied for and processed at the same time. Note: Council will ensure this standard can be complied with by requiring the lodgement of all land use consent applications at the same time as the subdivision consent application.*”

It would therefore be contrary to this to require the subdivision to be “approved and titles issued” before the land use consent is applied for. Rule 17.1.3.4B(c) must be read as meaning the buildings **will ultimately once the subdivision consent is granted** be within a title that has been approved as part of a CD subdivision.

My assessment, based on the Tables in ***Attachment 1***, is that the application for subdivision, if treated as a CDD subdivision, is overall for a Discretionary Activity. I also consider, based on Table 2A that the land use application (if treated as a CDD) is for a Restricted Discretionary Activity

Firstly, under the subdivision rules – the proposal if assessed under Rule 16.3.3.3 as a Compact Density Subdivision (as shown by my Table 4A) fails to comply with some performance standards as Controlled Activity.

It therefore falls to be determined by Rule 16.3.3.4(b) as discretionary activity if EITHER:

- (i) The subdivision has a net area of 350 square metres for each allotment; OR
- (ii) the subdivision is a compact density subdivision proposal and complies with rule 16.3.3.3(a)(iii)(a), (a)(iii)(c) to (a)(iii)(i), (a)(iv) and (a)(v).

The proposal clearly complies with the minimum lot size requirement in (i) above. Clauses (i) and (ii) are disjunctive and provide two separate pathways, clearly alternatives, and the plan therefore affords a choice between meeting 16.3.3.4(b)(i) and (ii). As (i) is met there is no need to go to (ii).

Secondly, under the land use rules, my Table 2A shows that the proposal fails to meet a performance standard for CDD in relation to fences. This means it falls to be determined as a restricted discretionary activity under Rule 17.1.3.4B, provided the activity complies with condition 17.1.3.4 (g) relating to garages and 17.1.3.4(i) relating to stormwater.

Our response to Item 6 of the RFI has been addressed in the Transportation letter attached. It confirms that the proposal does meet the rule relating to garages being set back from roads (by at least 2 metres or 5.5 metres if the garage door faces the road), and the Applicant is willing to accept a condition of consent to this effect. My Table 2A attached shows the proposal meets the requirements for storm water (noting I have addressed this aspect in more detail in this letter under Items 21 and 22). Therefore, this proposal is able to be assessed as a restricted discretionary activity under Rule 17.1.3.4B.

As requested, I have also provided an amended assessment of effects, based on those new provisions in the TRMP that would be applicable (refer **Attachment 2**). Those provisions are the relevant assessment matters in Rule 16.3.3.4 (CDD subdivision). Please note that the application as lodged has already provided an assessment of the proposal against Rule 17.1.3.4B, at paragraphs 6.6 – 6.9 (which applies to both standard density and CDD).

Issue 2:

Resource consent may be required under rule 17.1.2.1 (h) of the TRMP owing to the number of dwellings on the 'site'. Please update Table 1 of the AEE accordingly and provide a brief assessment of effects which includes details about how the number of animals per household are managed in the Olive Estate.

Response:

This request contains an incorrect reference. It is in fact Rule 17.1.3.1(h) which refers to the number of dwellings on the site.

The AEE, at Table 2, already acknowledged this non-compliance and so no changes to the application are required. The AEE already provides a thorough assessment of the effects of built development on the site, including the dwellings which incidentally comply fully with all relevant performance standards and density/coverage controls.

In terms of Rule 17.1.2.1(h) there is a limit of two dogs. I have been informed by Olive Estate that it generally allows only one small to medium size dog per unit, and usually like to meet the resident's dog before agreeing to them coming to the site. Olive Estate has a document which states under key obligations of the resident:

"Residents are not to keep pets in the Unit: except with the prior written consent of the Village Owner. The Resident acknowledges that the Village Owner may withdraw its consent at any time if in its opinion the pet has become a nuisance. The Village Owner will not be obligated to explain

the reasons for any such withdrawal and in the event of disagreement the Resident may make a complaint in accordance with the procedure set out in clause 24”.

It is not clear whether the rule relates to dogs per unit or per site. If the latter then the activity will breach this performance standard because the rule is not tailored to a development such as this. If that is the case, the land use consent remains as a restricted discretionary activity under 12.1.2.5, and it is submitted that no further assessment of effects is warranted on pets, in light of the information provided above.

Issues 3 and 4: Reserves

3. *It is acknowledged that the application will provide residents with high quality open space and facilities within the development and the open space amenity evident in the existing development is very high. It is also acknowledged that the applicant recognises the need to meet public open space requirements and has stated that they are open to options to provide that. The question that community development staff would like clarified is where the public open space and connectivity is provided and how it will be protected for use by the wider community in perpetuity. Paragraph 4.2 (e) of the AEE refers to green spaces, parks and gardens linked by a pedestrian pathway, and states that the parks will not be vested as public reserves but will be available for public use. Paragraph 4.41 of the AEE states that the park spaces are/will be readily available for public use.*

Please clarify which areas are public parks/greenways, paths and which areas are private open spaces and how any public parks will be protected for public use in perpetuity if they are not vested in Council.

Response

Attached is a plan showing the areas the Applicant proposes to make available for public use. These areas result in a combined total of 2,500 m² of publicly available open space (refer **Attachment 3**).

The mechanism proposed by the Applicant for ensuring this land is available for public use is by way of a volunteered condition (or *Augier* condition) on the land use consent. It is proposed that such a condition provide that the land referred to above will be available for public use. The Applicant is happy to liaise with the Council over the detail of the wording of such a condition.

However, we see the key points to be covered in a condition as being the following:

- (a) the design, construction and maintenance is the responsibility of Olive Estate;
- (b) in recognition of the close proximity of the spaces to the villas and care facility there would need to be some ability for Olive Estate to ask individuals to leave if they are behaving anti-socially and causing a nuisance to residents.
- (c) the timing of when public access is to be made available so that it is consistent with the construction and operational schedule.

Olive Estate advises it is also happy to liaise with the Council over appropriate signage to identify the location of the green spaces available for public use.

We understand the Council's wish to ensure that this land is made available for public use into the future and this is consistent with the intention of the Applicant. In addition to the fact that the condition on the land use consent must be complied with on a continuing basis, the condition could also be included in a covenant in favour of the Council registered against the title (in accordance with s 108(2)(d) of the RMA).

We note that such a condition is only volunteered on the basis that there is no reserve vested in the Council and that it is given an appropriate offset when calculating the reserve fund contributions payable.

A Heads of Agreement could also be entered into with respect to this space (similar to the heads of agreement relating to maintenance within the road reserve areas for the original development) if that would be useful.

4. *Table 4 of the AEE makes reference to Rule 16.3.3.1 (o) (iii) and the financial contribution rules. However, Rule 16.5.4.1 Permitted Activities (Financial Contribution on Building Development) requires payment of a reserve financial contribution on built development and Rule 16.5.4.4 states that the financial contribution will be offset where land is set aside at the request of the Council and vested for reserve purposes. The market value of such land shall be assessed prior to the approval of the proposed development.*

Also Rule 16.5.5.1 Requirement for Financial Contribution on Resource Consent (Other than for Subdivision or Building) states that Subject to subsection 16.5.1, the Council may require, as a condition on any land use consent that a financial contribution of money or land, or a combination of these, be made for the following purposes:

(a) To avoid, remedy or mitigate any identified adverse effect on the environment that is attributable to the activity that is the subject of the consent.

(b) To attain any defined positive effect on the environment, in order to offset any identified adverse effect attributable to the activity that is the subject of the consent.

Rule 16.5.6.1 Financial Contribution (Limitations) states that where works, services or land are not available, nor likely to be available within a reasonable time scale that are considered necessary to meet the needs of a proposed subdivision or development in order to avoid, remedy or mitigate actual or potential adverse effects on the environment, and the applicant will not accept the responsibility of providing such works, services or land, nor the money needed for Council to undertake them, the Council may refuse to grant resource consent.

Council has indicated via a policy framework, an indicative reserve notation on the planning maps in the TRMP and during pre-application consultation that a public reserve measuring at a minimum 2500m² is required to meet its level of service for both the proposed development and existing development within 500 metres of the site.

Please clarify how this is provided for in terms of Rules 16.5.4.1 and 16.5.5.1 and 16.5.6.1 of the TRMP.

Response

Your letter states that: “*Table 4 of the AEE makes reference to Rule 16.3.3.1(o)(iii) and the financial contribution rules. However, Rule 16.5.4.1 Permitted Activities (Financial Contribution on Building Development) requires payment of financial contribution on built development and Rule 16.5.4.4 states that the financial contribution will be offset where land is set aside at the request of the Council and vested for reserve purposes.*”

We comment as follows:

- (a) **Rule 16.3.3.1(o)(iii)** is a subdivision rule, and it only refers to 16.5.2.4 (reserves and community services component of financial contribution on subdivision). There are no financial contributions payable with respect to the subdivision. As such rule 16.3.3.1(o)(iii) cannot require the reserve to vest.
- (b) It is accepted that financial contributions are payable on the building development under **16.5.4.1**. This is quite separate to rules 16.3.3.1(o)(iii) and 16.5.2.4.
- (c) Section 108(10) RMA states that the consent authority must not include a condition in a resource consent requiring a financial contribution unless (a) the condition is imposed in accordance with the purposes specified in the plan and (b) the level of contribution is determined in the manner described in the plan.
- (d) Rule 16.5.4.1 only provides for the taking of money, rather than land (refer to Figure 15.5C for the amounts and 16.5.4.3 regarding calculation of financial contributions).
- (e) It is correct that 16.5.4.4 states that financial contributions will be offset where land is set aside at the request of the council and vested for reserve purposes. This does not authorise the Council to require the vesting of the reserve as a condition of a consent, but rather this is simply a circumstance listed of when there will be a reduction, waiver or offset of the financial contribution. It is accepted that the Council is entitled to make a request for a reserve. But the primary responsibility to discount the level of the financial contribution is only implemented where the landowner takes up that request and sets aside the land.
- (f) With respect to rule **16.5.5.1** this applies to resource consents (other than for subdivision or building). This is not relevant as this proposal is for subdivision and buildings.
- (g) With respect to **16.5.6.1** (financial contributions – limitations) this relates in part to carrying out work or services on or off site – we do not see the relevance of this here. It also provides for the Council to refuse to grant resource consent where the applicant will not accept the responsibility of providing works, services, land or money.
- (h) However, to be clear the applicant is not refusing to provide money. Rather its position is that financial contributions must be by way of money rather than land. The applicant has signalled that it will make a separate application with respect to the assessment of financial contributions so that any monetary sum required reflects the demand likely to be placed on reserves from this development.

- (i) The indicative reserve land cannot be taken as reserve under rules 16.5.4.1, 16.5.5.1 or 16.5.6.1. However, the applicant has proposed an alternative for meeting the policy thrust, namely by providing generous open space areas for the Olive Estate community and by making certain areas available for wider public use also. As set out in the application some 8,600m² of open space is to be provided on the Hill Street block, in addition to 8,500m² of open green space on the existing Olive Estate site. A key philosophy is ensuring integration with the surrounding community and encouraging people to move both on and off the site.

Issues 5 – 13, Transportation

Response:

Please refer to **Attachment 4** - the specialist response by Gary Clark, in a separate letter dated 22 August 2019. This is adopted as the applicant's response to these questions on transportation in the RFI.

Issue 14 - Buildings

Please demonstrate compliance, or otherwise, with all set-back and daylight admission rules of the TRMP in respect of units v09, v10, v21, v22 and v25 and the boundary with the dwellings on Fawdan Way, and update the AEE as required. Particularly I note on dwg no. sk 2a (villa # 21) that the gable end of the dwelling breaches the daylight admission angle on the eastern boundary.

Response:

I can confirm that these villas, and indeed all residential dwellings, will fully comply with all set-back and daylight admission rules of the TRMP.

To confirm this, I have attached new plans sk2a and sk5a with the yard set-backs and daylight planes marked on them for Villas No.'s 21, 22 and 25 which are the buildings sited closest to the boundary stated above (refer **Attachment 5**). Those plans show complying villas, and it follows that all of the other villas which are the same height but are set back further from the boundary, are also fully complying.

Please also be aware that the Rule 17.1.1.1(n) provides: *"For any roof with a slope of 15 degrees or greater and the roof ridge generally at right angles to the boundary, the end of the ridge may be up to 1.5 metres above the indicator plane and the end area up to 2.5 square metres when viewed in elevation"*.

The gable intrusions are all within scope of the above rule, as shown in diagrammatic form on the attached plans.

Issue 15 – 17 Pond, Dewatering

15. *There is a requirement under the Freshwater Fisheries Regulations (administered by the Department of Conservation) to manage the transfer of eels using a licenced contractor.*

It is likely that the pond (which is to be de-watered and filled) will contain eels. Please confirm that the requirements of the Freshwater Fisheries Regulations will be met and provide details of the licenced contractor that will be used to transfer eels from the pond.

16. *Please provide further details about how the existing pond will be de-watered and decommissioned including details of the measures to be used to avoid sediment discharges into any waterway (including the Councils reticulated stormwater system). Typically, any sediment laden water can either be pumped onto adjacent land in long grass or filtration, geobags or other methods can be used to ensure there is no sediment discharge to waterways. Please clarify.*
17. *The taking of water from the pond will not comply with permitted activity rule 31.1.2.1(n) of the TRMP, and consent will be required for this. Please update the AEE accordingly.*

Response:

In relation to Item 15, the applicant has engaged Tom Kroos, from Fish and Wildlife Services to do this work when required. The applicant is happy for a condition to be placed on the consent in this regard. It is understood from your e-mailed response on 13 August 2019 that an assessment from Mr Kroos is not required.

In relation to Item 16, the process to be followed will be to empty the top portion of clean water using a floating intake system into the nearby stormwater pipe at an agreed controlled rate.

In earlier discussions with officers, Mike Verrall (surveyor for the applicant) was also told that the pond could either be pumped or potentially gravity siphoned out onto the grassy paddock areas. So, for the bottom portion, the pond sludge will be removed (by either method) and spread out on open ground/long grass area to dry, then removed from the site.

In addition, the applicant will make provision to permanently decommission the two pond feed pipes where they cross the application site boundary.

For Item 17, it is noted that permitted activity rule 31.1.2.1(n) states:

The taking and use of water from a dam impoundment or a pond or reservoir is not limited, provided:

- (i) the take is from a constructed dam impoundment, pond or reservoir, but not including a take from an impoundment created by a weir;*
- (ii) fish and eels are prevented from entering the reticulation system;*
- (iii) water to a depth of 1 metre is retained over 5 percent of the impoundment area to provide for eel survival.*
- (iv) the dam impoundment, pond or reservoir was existing as at 31 March 2012.*
- (v) the take and use of the water is for irrigation, and information is provided to Council on request to show the area irrigated, and that the application rate is appropriate for the soil type being irrigated including as specified in Figure 31.1D in rule 31.1.2.2.*
- (vi) the person taking and using the water is the legal owner of the dam impoundment, pond or reservoir or has a legal access easement.*

(vii) where a take from the dam exceeds the quantities specified in Figure 31.1A, there is an applicable permit either to take and use, or to dam the water.

The 'take' of water is to empty the pond, as described above.

Whilst it is considered that most of the above performance standards can be met, Ms Jenna Wolter from TDC has advised that, in an e-mail dated 16 October 2019, that:

"Technically you will not be meeting point iii of that rule. It is likely this point is there to trigger a consent where ponds are being filled so we can ensure eel populations are managed appropriately. This rule is therefore triggered regardless of the method of dewatering."

On that basis, the applicant also makes application for a water take with respect to Rule 31.2.1(n). Ms Wolter also advised that she is happy for the applicant to focus the assessment on the component that breaches the above rule.

Attached is an assessment of the effects of the water take aspect of the proposal (refer **Attachment 6**).

Item 18 - Wastewater

Please provide details from a suitably qualified waste water engineer that show how wastewater flows will be held-back in storm events. Wastewater currently overflows at the Beach Road pump station (see rule 17.1.3.1 (y)).

Response:

Mike Verrall, the applicant's surveyor, has been in discussion with Alex Grigg from TDC on this issue. Mr Grigg has confirmed in an e-mail dated 23 August 2019, that the Engineering Services department has decided regarding wastewater in the Waimea area, that:

- *All other or local constraints still need to be dealt with, as per usual. E.g. Brightwater.*
- *Zoned land can continue as per usual – includes SHAs and land that is deferred we have already agreed can be serviced (such as some sites off lower queen street). We should agree these sites now so there are no surprises.*
- *Land not zoned business or residential will not be serviced.*
- *Further deferred land will need to wait a bit longer.*

In answer to a follow up question, asking that because this proposal is on zoned land then the issue raised in Item 18 will not be an issue for Olive Estate, Mr Grigg replied that this is correct.

Please confirm your acceptance of Mr Verrall as “appropriately qualified” for the purpose.

Therefore, no further response is considered necessary.

Items 19 – 20, Noise

19. *Please update the AES noise report to include details of the mechanical plant (i.e. type, number and location) to be used in association with the care facility and provide a noise modelling assessment for any mechanical plant that is to be used (such as heat pump units, extractor units, cooling equipment etc). The AES report states that this assessment is to be provided in due course however it is considered appropriate to consider the cumulative noise effects at this stage.*
20. *There is no information in the AES noise report relating to staff shift changes (i.e. frequency, time of day/night etc) and this may result in noise that exceeds the current noise performance standard. The AES noise report identifies one potential non-compliance with the existing noise performance standard for the area. That is in relation to the residential property at 3 Brenda Lawson Way as a consequence of vehicle movements on Sunday (and presumably public holidays, although that is not stated) when the TRMP standard of 40 dB LAeq(15 minutes) could be breached. This breach could be further exacerbated by the arrival / departure of staff. Please address.*

Response:

Please refer to the attached letter from Acoustic Engineering Services (**Attachment 7**), the applicant’s noise consultant.

It directly addresses and responds to Items 19 and 20 above, and the applicant adopts this letter as part of its response to the RFI.

Items 21 – 22, Stormwater

- 21 *Please provide a peer review of the stormwater for the Olive Estate from an appropriately qualified and experienced storm water engineer. There is very limited information provided as part of the application and the information which has been provided is based on the initial report undertaken prior to construction of the first stage of the development. Envirolink provide a report dated 2013 submitted as part of RM13034V1. The Council is concerned that the run-off co-efficient used in this report is lower than the co-efficient used in more recent stormwater reports in this area.
The built environment (aerial photographs) from the initial stage looks like it has more hard-stand than envisaged by the report. The weighted C of 0.56-0.60 looks low.*
- 22 *Please provide a contour map showing the secondary flows across the site and show that these will be in the roadways prior to leaving the site. This is needed to demonstrate that the secondary flows can be adequately controlled, and that the stormwater can be discharged to the Council-maintained road drainage network (see rules 36.4.2.1 & 17.1.3.1 (z) which require the Councils system to have the capacity to receive the additional*

stormwater). Depending on the outcome of the stormwater peer review Table 5 of the AEE may need to be updated.

Response:

Please refer to the separate report from Verrall and Partners Limited (**Attachment 8**), which is adopted as part of the Applicant's response to this RFI.

Item 23, Financial Contributions

The applicant appreciates that this item was included in the RFI for advice only, and no response is required.

Approvals

Arrangements are being made to provide the written approval of the owners of 376 Hill Street (Mr and Mrs Nicoll), noting that they are obliged to provide this approval in terms of the Sale and Purchase Agreement for the sale of their property to the Applicant.

Public Meeting and Minor Changes to the Application

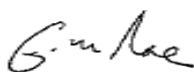
As a result of a public meeting with adjacent residents, Olive Estate is currently making some minor changes to the application, all within scope of the application as lodged.

I will shortly advise you of those changes so that the application may continue to be processed.

In the meantime, if you have any questions regarding this response to the RFI, please contact me directly.

Yours sincerely

Gary Rae Consulting Limited



Gary Rae, Director

Attachment 1

Table 2A – Compact Density Development Rules

Rule	Comment	Proposed Activity
17.1.3.3(a) Multiple Consents	The rule requires buildings to be located within the site as approved as part of compact density subdivision under rules 16.3.3.3, 16.3.3.4, or 16.3.3.7.	Complies – Olive Estate involves a subdivision, for boundary adjustment. This has been applied for at the same time as the land use consent, as directed by Rule 16.3.3.3(a).
17.1.3.3(b) Dwellings	More than one dwelling may be constructed on any site.	Complies – There will be multiple dwellings on the sites.
17.1.3.3(c) Site Coverage 17.1.3(ca)	Maximum site coverage is 70 percent. Maximum building coverage is 50%.	Complies – The proposed building coverage is approximately 31% and it follows that the total site coverage with buildings and other features will be less than 70%.
17.1.3.3(d) Stormwater	The stormwater generated from an individual site or development approved as part of any subdivision after 11 March 2006 in the Richmond South Development Area must comply with Rule 16.3.3.1(mc).	Complies - No changes are proposed to the existing stormwater system at Olive Estate (all stormwater will be managed on site through the detention pond, with the piped discharge to Hart Stream as per the existing resource consent (RM120928)). For the Hill Street block, this site has three stormwater outfall points which in combination allows reticulation to all parts of the land irrespective of contour (refer Infrastructure Report in <i>Annexure E</i>).
17.1.3.3(e) Internal boundaries	Buildings are to be set back 2 metres from the front boundary, and, and no more than 5 metres, except that: (i) all garages and carports are set back at least 5.5 metres from road front boundaries if the vehicle entrance of the garage or carport faces the road; (ii) there is no side boundary setback where there is vehicular access to the rear of the site from a legal road or approved access; (iii) where there is no vehicular access to the rear of the site, a side boundary setback of at least 1.5 metres on at least one side is provided, enabling access to the rear of the site; (iv) there is at least a 5-metre setback from the rear boundary.	Complies – The proposed development provides multiple dwellings on very large sites. Buildings are all set back by more than 2m from the front boundaries, and all garages are set back at least 5.5 metres from road front boundaries (the Applicant volunteers a condition to require this).

17.1.3.3(f) Building envelopes	Buildings must be contained within an envelope from a vertical line 6m above the boundary then at 45 degrees inwards (for 50% of the boundary length).	Complies – All buildings are sufficiently spaced from internal boundaries such that they fit within the building envelope for compact density development (the Applicant volunteers a condition to require this).
17.1.3.3(g) External boundaries	Buildings must comply with building envelope and setback rules in 17.1.3.1 where adjoining land is not part of the development.	Complies – All buildings are sufficiently spaced from side and rear boundaries such that they will comply with the daylight admission lines (the Applicant volunteers a condition to require this).
17.1.3.3(ga) Fences	Any fence, wall or screen erected in the front yard shall be no higher than 0.8m.	Does not Comply – the proposed fence along the Hill Street frontage, in front of the Care Facility will be 1.2 metres high
17.1.3.3(h)-(l) Outdoor living space	Dwellings are required to have 20 square metres of outdoor living space at ground floor level, and apartments above ground floor are required to have balconies of 7 square metres and 1.5m minimum width. They must be more than 4m to internal boundaries. They must meet the Urban Design Guide.	Complies – All of the villas and terrace houses have outdoor living areas exceeding 20m ² (plus shared use of community spaces and activities). For the apartment blocks the units each have balconies of the required minimum dimensions, plus shared use of community spaces and activities. All balconies are more than 4m from boundaries. All other requirements are met, and they meet the Urban Design Guide.
17.1.3.3(m) Stormwater	All stormwater is required to be discharged to a Council-maintained stormwater drainage network that has sufficient capacity; or it complies with Rule 36.4 of the TRMP.	Complies - No changes are proposed to the existing stormwater system at Olive Estate (all stormwater will be managed on site through the detention pond, with the piped discharge to Hart Stream as per the existing resource consent (RM120928)). For the Hill Street block, this site has three stormwater outfall points which in combination allows reticulation to all parts of the land irrespective of contour (refer Infrastructure Report in <i>Annexure E</i>).

Table 4A – Subdivision Rules – Compact Density in Richmond		
Rule	Comment	Proposed Activity
16.3.3.3(a) (i) (ii)(a)	Land area to be at least 1,500 square metres. No minimum allotment areas.	Complies – the subject land involves existing sites well in excess of 1,500m ² (refer Table 4), and no minimum allotment areas are required.
(ii)(b)	Allotment layout determined by reference to siting of dwellings on each allotment	Complies – The subdivision application is accompanied by a land use consent application showing dwellings and buildings on the allotments (as required by this rule).
(ii)(c)	Frontage – no more than 5% of allotments shall be rear sites with no frontage to roads or reserves.	Complies - All lots have frontage to roads.
(iii)	Allotment access and road network	Does not Comply – refer to AEE and Transportation Assessment Report
(iv)	(a) Land that is subject to a notation on the planning maps as indicative reserve is set aside as reserve and vested in the Council upon subdivision in general alignment with the indicative reserve areas shown on the maps. (b) Indicative reserve areas are to be vested in the Council as Local Purpose Reserve (walkway/recreation) and Local Purpose Reserve (drainage) and the part of the area vested as Local Purpose Reserve (walkway/recreation) will form part of the financial contribution for reserves and community services in accordance with rule 16.5.2.4.	Does not Comply – (see response to Questions 3 and 4 in RFI).
16.3.3.3(f) Stormwater	All stormwater is required to be discharged to a Council-maintained stormwater drainage network that has sufficient capacity; or it complies with Rule 36.4 of the TRMP.	Complies - No changes are proposed to the existing stormwater system at Olive Estate (all stormwater will be managed on site through the detention pond, with the piped discharge to Hart Stream as per the existing resource consent (RM120928)). For the Hill Street block, this site has three stormwater outfall points which in combination allows reticulation to all parts of the land irrespective of contour (refer Infrastructure Report in <i>Annexure E</i>).

Attachment 2

Subdivision Consent as a Compact Density Subdivision

The matters for assessment of discretionary activity subdivision in the Residential Zone are set out in Rule 16.3.3.4(b). These matters are:

- (1) ***The degree of non-compliance with the applicable conditions of Rules 16.3.3.1, 16.3.3.1A, 16.3.3.2, 16.3.3.2A, 16.3.3.2B and 16.3.3.3; and***
- (2) ***The reasons for non-compliance with those rules which have not been met.***

The AEE submitted with the application has already assessed the proposed subdivision with respect to the conditions in rules 16.3.3.1 that do not comply (refer Table 4 of AEE “Subdivision rules – Richmond South Development Area”, and the assessment of Subdivision Consent, paragraphs 6.13 – 6.23.

Attachment 1 of this response to the RFI includes Table 4A which assesses the proposed subdivision against Rule 16.3.3.3a, i.e. the rules for compact density subdivision in Richmond.

The only two conditions that are breached are rules 16.3.3.3a(iii) allotment access and network, and 16.3.3.3(a)(iv) indicative reserves.

Both of those matters are assessed in the AEE specifically at:

- Access and network: paragraphs 6.15 – 6.17, and
- Indicative reserves: paragraphs 6.18 – 6.23.

The applicant relies upon those assessments for the purposes of assessment of the subdivision as a compact density subdivision.

- (3) ***The extent to which the matters in Schedules 16.3A and 16.3B have been met.***

These matters are transportation matters, and are fully addressed in the Transportation Impact Report attached to the AEE.

- (4) ***Consistency with the Urban Design Guide (Part II, Appendix 2).***

The application includes an Urban Design Assessment Report which specifically addresses these matters (refer Urban Design Guideline Assessment (TRMP), pages 5 – 11).

Attachment 3

3.0 MASTERPLAN

3.10 OPEN SPACE PLAN - OVERALL SITE

Original Consented Development Open Green Space = 8,500m²

Proposed Development Open Green Space = 6,100m²
 Olive Estate Open Green Space with public access allowed = 2,500m²
TOTAL = 8,600m²

Plan as provided with s92 replaced by later revision



LEGEND

ORIGINAL CONSENTED OPEN GREEN SPACE ACTIVITY NODE	HILL STREET BLOCK SITE BOUNDARY	PLANTING	RAISED THRESHOLD	7.0m ROAD (FAIROSE DRIVE)
PROPOSED OPEN GREEN SPACE ACTIVITY NODE	ORIGINAL DEVELOPMENT SITE BOUNDARY	PRIVATE OUTDOOR LIVING SPACE	1.4m PEDESTRIAN PATH	6.0m ROAD
PROPOSED OPEN GREEN ALLOCATED FOR PUBLIC USE (2600m ²)	PROPOSED DEVELOPMENT SITE BOUNDARY	SWALES	CYCLE / WALKING TRAIL	5.0m ACCESS ROAD
PEDESTRIAN CONNECTION BETWEEN ACTIVITY NODES	OPEN SPACE	DETENTION POND	TREES	4.0m ACCESS PLACE
SHARED CYCLE AND PEDESTRIAN PATHWAY	PRIMARY TRAFFIC MOVEMENT (COLLECTOR ROAD)			

Attachment 4



PO Box 3737
Richmond 7050
Tasman District
M +64 (0) 21 243 1233
E+gary.clark@trafficconcepts.co.nz

RM190790 Applicant-s92 further info reply 12 Nov 2019 p19

22 August 2019

Ref: 0642

Gary Rae
Gary Rae Consulting Ltd
PO Box 57
MOTUEKA 7143

Dear Gary

Olive Estate Development – Hill Street – Tasman District Section 92 Response

Following from your instructions, site visits and design considerations, I have now completed my assessment of the matters raised in Council's Section 92 request for further information. As requested, I have reviewed the matters raised by Council and provide my assessment below.

1. Introduction

Tasman District Council have received a consent to extend the Olive Estate Village to the east and connect with Hill Street. Council have considered the proposal and have responded to the applicant with a request for further information on a number of specific transportation related matters in their Section 92 Letter dated 6 August 2019. These matters have been assessed with analysis provided for each relevant item below.

2. Transport Matter 5

Council's Section 92 seeks further information on the following:

- 5 Please amend the plans to remove the 90-degree car parking spaces from Fairose Drive as this parking layout is not supported by the Council from a traffic / pedestrian safety point of view. Parallel car parking spaces may instead be considered. Please also update the parking calculations accordingly.

Council have asked for the 90° angle parking to be changed to parallel parking as it has concerns with traffic and pedestrian safety. The purpose of the angle parking is to provide more side friction to the moving traffic lane to achieve the target speed environment of speeds than 40km/h. The angle parking also provides the spaces near where the expected

demand will occur. The angle car parks are located on the straight portion of the road and vehicle approaching along Fairose Drive are coming around bend which provides excellent sight distance of any parking manoeuvres. This is also the case for drivers moving out of these car parks.

In regards to the pedestrian safety concerns, the proposed angle parking will allow drivers and passengers to enter and exit the vehicle with needing to stand within the moving traffic lane. This is a safer method of providing for pedestrians than parallel parking.

There are a number of roads in New Zealand where angle parking is provided on much busier roads than the flows expected on Fairose Drive extension which operate safely and efficiently. The proposed angle parking was carefully considered against the context of the road design, its layout and the needs of the different users in this area of the development.

The applicant wishes to retain the angle parking layout which provides a safer and more efficient outcome than parallel parking would. Any effects of angle parking over parallel are indiscernible with angle parking in this particular road environment being more appropriate.

3. Transport Matter 6

Council's Section 92 seeks further information on the following:

- 6 The distance between the garage doors of some of the residential units and the back of the footpath is not sufficient for larger vehicles (as demonstrated below in the existing Olive estate development):

Council has expressed concerns about the distance between the front of the garage and the back of the footpaths. The design has provided sufficient space to enable a car to park clear of the footpath.

In order to address this matter, the applicant is happy to offer a condition requiring that there is at least 5.5 metres from the front of the garage to the back of the footpath. This is consistent with the TRMP requirements and will address council's concerns being 0.5 metres more than requested in the Section 92 Request.

4. Transport Matter 7

Council's Section 92 seeks further information on the following:

- 7 Please update the Transportation Impact report to assess the potential demand and provision of RV parking within the development. From my site visit I noted a relatively high number of RVs (approx. 10) parked on a temporary demarcated portion of the construction site. Whilst it is not a TRMP requirement to provide RV parking, from my observations, the demand for RV parking might be higher in this development than in others and there is limited space to the front of the villas to accommodate RV parking. Approximately 10 RV parking spaces are shown in the Hill Street Block Development, seemingly to cater for the entire Olive Estate development. It is not clear that this will be sufficient.

Council has requested parking for RV's that are currently parked within the existing Olive Estate development. There is no requirement in the TRMP for the applicant to provide RV parking and there has been no requirement for any other similar developments.

Currently residents with RV's are allowed to park on site as it moves through the construction process. This arrangement by the management of Olive Estate is temporary and at their discretion. As Olive Estate nears completion the owners of these vehicles will be required to take them off the site.

Cocunil have commented that the demand for RV parking might be higher in Olive Estate than others. As noted above the demand is related to the fact that there is a place to park on the site, but this was always temporary and will not be provided for upon the completion of the development in the same way as other developments.

5. Transport Matter 8

Council's Section 92 seeks further information on the following:

- 8 Please update the Transportation Impact report to provide an assessment of the suitability / safety of the intersection to the residential units v28-v36 and Hill Street.

Council would like the Transportation Impact Report updated with an assessment of the access for Villas 28 to 36. Appropriately we are responded to the Section 92 Request for further information below within this letter.

The concern appears to relate to the proximity of the access to these villas and Hill Street. As noted above the target speed environment along Fairrose Drive is 40 km/h which is consistent with the expected road classification of the road. It should be noted that Fairrose Drive (Indicative Road - Map 129) was not to be connected to Hill Street and has been done at council's request. The through road (sub collector) is shown as Pine Crest Drive.

The intersection of the access to Villas 28 to 36 is around 30 metres from Hill Street which is more than the 20 metres required under the TRMP. The access location complies with the separation requirements of the TRMP. It should also be noted that due to the location of intersection the vehicle speeds will be low and the sight distance is excellent. Motorists are also alert as they make the turn or move from the access.

There are no adverse effects of this access location.

6. Transport Matter 12

Council's Section 92 seeks further information on the following:

- 12 The extension to Fairrose Drive will need to maintain the same formation standards throughout the development and this road will need to vest with Council as road. Please confirm the same formation standards (widths, provision of footpaths on both sides of the carriageway etc) will be provided.

The matter around the formation standards for Fairrose Drive has been discussed with Council in the pre-application meeting as well as a separate meeting with engineering services staff. In both these meetings the philosophy around the road widths and other requirements for the extension of Fairrose Drive was explained carefully. As presented and consistent with the overall philosophy of the Olive Estate development the design has been developed to encourage more appropriate speeds for this intensive residential environment. As noted above the target operating speed is around 40 km/h. The width of the road has been deliberately set at seven metres. This width along with the inclusion of the angle parking will make it clear to motorists using the section of Fairrose Drive that lower speeds are more appropriate.

The original design has been amended following the two meetings with Council staff to include footpath on both sides and a reduced berm on the south eastern side of Fairrose Drive as agreed. In the meetings the location of entrance thresholds was also discussed. These have been included in the new design at the locations suggested with one of these being that the interface of the existing section of Fairrose Drive and its extension. Other minor changes have also been made following the meeting with Council staff.

At these meetings the proposed road width of seven metres was discussed with Council staff who saw no major issue with the change in width for the extension of Fairrose Drive. It is surprising to now see in the section 92 request that Council now seek to require major change from what was previously been understood and accepted.

In terms of the impacts of changing the road formation standards from the existing section of Fairrose Drive to the new extension these are considered to have no material difference with any effects are considered to be positive. This is due to the narrowing of the new section of Fairrose Drive providing an environment that will encourage lower speeds, changing the character of the road as it moves through the Olive Estate development and encouraging motorists to use the identified sub collector road being Pine Crest Drive.

It is also noted that the new Nelson Tasman Land Development Manual (NTLDM) would have this road being classified as an access road or possibly a sub collector (noting that the TRMP does not have Fairrose Drive linking to Hill Street). Even if extension of Fairrose Drive was considered to be a sub collector, then it only needs to be 5.6 metres wide for the moving traffic lane with inset parking. We have provided 7.0 metres to assist with some continuity with existing section of Fairrose Drive and angle parking to assist in providing some side friction to reduce speeds. This design meets the needs of the residents and the nature of the residential environment the road will go through. It is not a highway and providing an eight metre wide road is inconsistent with the philosophy of development, inconsistent with the NTLDM, leads to poor residential outcomes and is unsafe.

Accordingly, there are no adverse effects from the proposed formation standards of the extension of Fairrose Drive.

7. Transport Matter 12

Council's Section 92 seeks further information on the following:

- 13 Please update the parking assessment in Table 2 of the Transportation Impact Report to provide a clearer determination of the total number of car parking spaces that are required by the TRMP for the entire development versus the total number that will be provided (noting the limitations identified in nos. 5 & 6 of this letter).

The parking assessment in Table 2 appears to focus on the car parking spaces needed for the care facility rather than the development as a whole and concludes that the development 'can comply' (as opposed to 'will comply'). Table 16.2C of the TRMP requires two spaces per dwelling and on pg. 23 of the Transportation Impact Report 'TRMP parking requirements' it infers that the TRMP only requires one car parking space per dwelling and it is stated that 'most' of the units will be able to accommodate a second car parking space in front of the garage.

As noted in the Transportation Impact Report (TIA) the main focus of the assessment in Table 2 is on the care facility and associated apartments. There is also an assessment of the independent units so far as to show compliance. The TIA also assessed the independent units as being treated as a Comprehensive Residential Development. Under the TRMP rules these developments only require one carpark per unit. As noted in the TIA all units have at least one on-site car park with most units also been able to stack a second vehicle in front of the garage.

The parking assessment is only required to consider the new villas to be constructed as part of this application as the existing villas have already been approved and no changes are being made to those units.

The use of the term "will comply" for the assessment of car parking compliance was reflecting that detailed design still needs to be completed and tweaks will be made to ensure all villas have two off street car parks (stacked). Any changes that may be required

to achieve the second car park will be minor through a slight repositioning of the individual villas. In carrying out a careful review of the concept plan for the development, it is only townhouses 1 through to 11 and Villa 18 that may require some minor adjustment.

As noted above all garages will be at least 5.5 metres clear of the back of the footpath to meet the TRMP requirements in Council's request to have at least 5.0 metres.

Accordingly, in terms of the parking analysis for compliance we can confirm that there are 74 new units that will provide 156 (148 residential plus eight visitor car parks). This easily meets the requirement of two spaces per unit requiring a total of 148 spaces as set out in the TRMP (non-comprehensive residential developments).

It should also be noted that the TIA provides a very robust analysis of the parking needs for the development which clearly shows overall the extension of Olive Estate, as proposed, is easily able to meet expected parking demands. The expected parking demands of the individual units is around 74 spaces with the parking provision being 156 parks. There are no adverse effects from the proposed parking provisions.

We are happy to provide any further clarification if required.

Regards

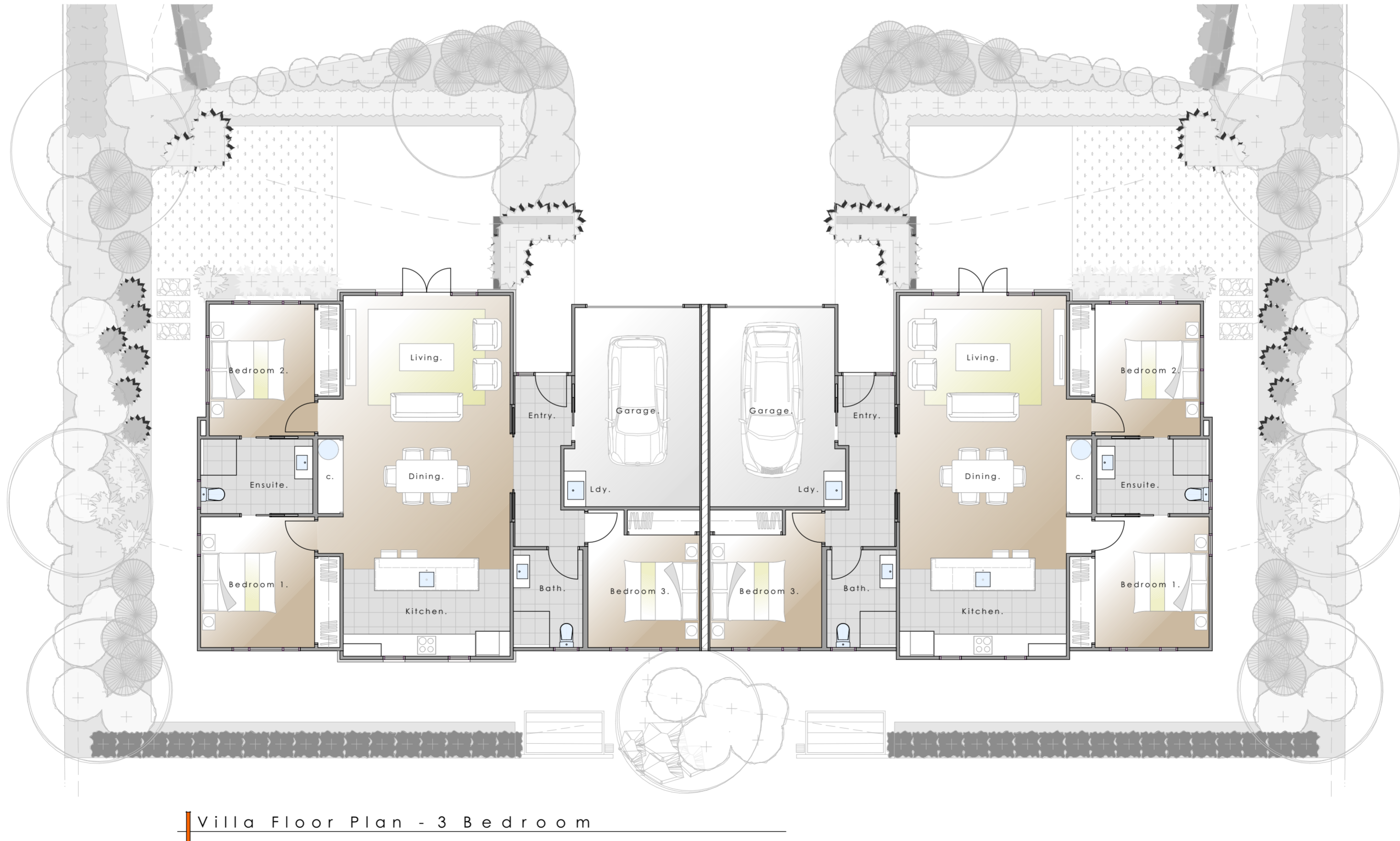
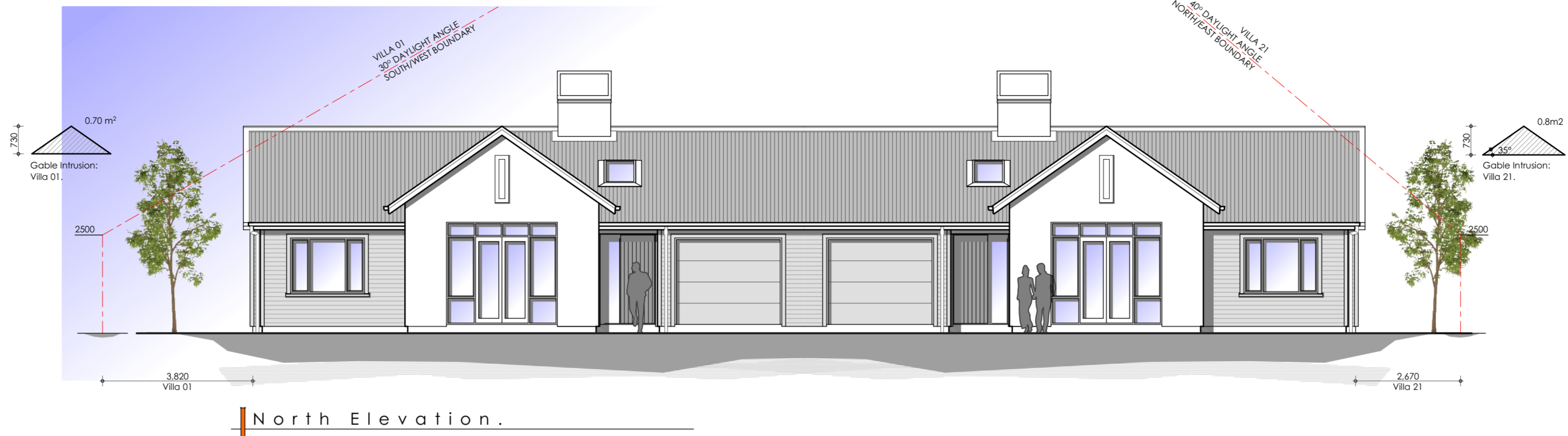


Gary Clark

Director

NZCE (Civil), REA, MIPENZ, CPEng

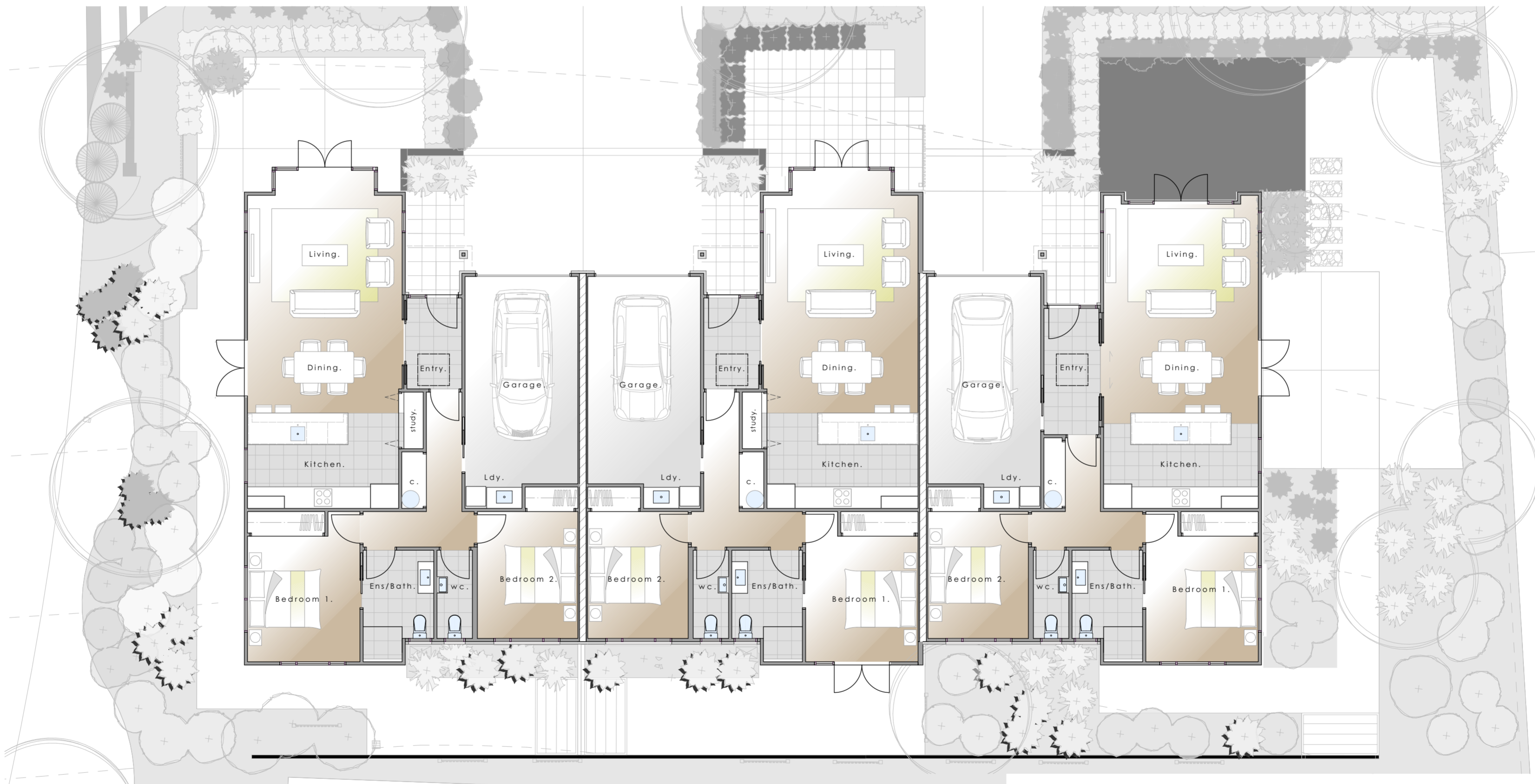
Attachment 5



RM190790 Applicants s92 further info req'd 12 Nov 2019 p24



North Elevation.



Villa Floor Plan - 2 Bedroom.



Attachment 6

Attachment 6: Water Take Assessment

Introduction

A water take consent has been deemed to be required by TDC officer (refer discussion in Item 17 of s92A response letter).

This relates only to the filling of the pond on the Hill Street Block.

It has been established that Rule 31.1.2.1(n) is not able to be met, and accordingly the Applicant needs to address this rule breach specifically in its application for water take.

This triggers a water take in terms of Rule 31.1.2.4 (Take from Storage), as a Controlled Activity. This is the relevant rule because the take is from a constructed pond (redundant irrigation pond); the pond is owned by the Applicant; and eels will be removed from the pond and thereby will be prevented from entering the reticulation system (as addressed in the assessment below)

Description of Works

The water takes relates to the filling of a redundant pond on the Hill Street Block.

The application contains a full description of how the pond will be filled (refer Infrastructure Report and report by TCE).

As explained in the response to Item 16 of the RFI, the process to be followed will be to empty the top portion of clean water using a floating intake system into the nearby stormwater pipe at an agreed controlled rate.

In earlier discussions with officers, Mike Verrall (surveyor for the applicant) was also told that the pond could either be pumped or potentially gravity syphoned out onto the grassy paddock areas. So, for the bottom portion, the pond sludge will be removed (by either method) and spread out on open ground/long grass area to dry, then removed from the site.

In addition, the applicant will make provision to permanently decommission the two pond feed pipes where they cross the application site boundary.

Assessment Matters

The matters of assessment are addressed below:

(1) Effects of the take on aquatic and riparian ecosystems, including in the impoundment, and upstream and downstream of the dam.

Comment: *The pond is quite separate from any other stream or water courses and its dewatering and filling will therefore have no effect on aquatic and riparian ecosystems, other than the eels which are to be removed and relocated into other aquatic ecosystems.*

(2) Effects of the take on other uses and values, including those given in Schedule 30A of the water body and those of connected water bodies such as groundwater, springs or wetlands.

Comment: *Not Applicable – the pond will be emptied and filled.*

(3) Effects on other water users including security of supply for existing water users, and impacts on existing downstream storage.

Comment: *Not Applicable – the pond will be emptied and filled*

(4) Measures to ensure efficient use of stored water, including soil based application rates.

Comment: *Not Applicable – the pond will be emptied and filled*

(5) Effects on fish and eels, including entrainment in pipes.

Comment: *The applicant has engaged Tom Kroos, from Fish and Wildlife Services to relocate the do this work when required. The applicant is happy for a condition to be placed on the consent in this regard.*

(6) Information to be supplied and monitoring, including water meters required.

Comment: *Not Applicable – the pond will be emptied and filled*

(7) The quantity, rate and timing of the take.

Comment: *refer to description of process for taking water*

(8) Efficient use of water, including application rates for irrigation appropriate to the soil type.

Comment: *Not Applicable – the pond will be emptied and filled*

(9) The duration of the consent as provided for in Schedule 31A (Section 123 of the Act), timing of reviews, and the purposes of reviews (Section 128 of the Act).

Comment: *Not Applicable – the pond will be emptied and filled*

(10) Financial contributions, bonds and covenants in respect of the performance of conditions and administration charges (Section 108 of the Act).

Comment: *Not Applicable – the pond will be emptied and filled.*

Conclusion

It is considered the proposed take of water, involving the foiling of an old redundant irrigation pond, will be conducted so as to meet all relevant considerations in terms of the above assessment matters.

File Ref: AC19155 – 04 – R1

16 September 2019

Mr L. Porter
Canopy NZ Ltd
Level 1 B2
51 Halifax Street
NELSON 7010

Email: luke@canopy.co.nz

Dear Luke,

**Re: Proposed Care Facility, Olive Estate Lifestyle Village, Richmond
Response to RFI**

As requested, we have reviewed the acoustic related comments outlined within the Request for Further Information titled *Further Information Request for Resource Consent Application Nos RM190790, AM190789, RM190791 & RM120928V2 – Integrity Care Group – Olive Estate*, as prepared by the Tasman District Council, and dated the 6th of August 2019.

We understand that the following information / clarifications are required:

- 19. Please update the AES noise report to include details of the mechanical plant (i.e. type, number and location) to be used in association with the care facility and provide a noise modelling assessment for any mechanical plant that is to be used (such as heat pump units, extractor units, cooling equipment etc). The AES report states that this assessment is to be provided in due course however it is considered appropriate to consider the cumulative noise effects at this stage.**

As outlined in our acoustic report, there is currently no information available on the proposed plant selections or final locations. We have been advised that it is likely that the main pieces of plant will be located centrally on the roof. When plant is located on the roof it is common for there to be some form of screening provided to reduce both noise to the boundary and break-in noise to internal spaces.

In this situation, based on the layout of the building on the site, we expect it is realistic for the mechanical plant to fully comply with the District Plan noise limits. In addition, if the noise levels complied with the District Plan noise limits we would not expect the noise from the mechanical plant to increase the maximum noise level which we have predicted at 3 Brenda Lawson Way – 43 dB L_{Aeq} when a car travels on the northern driveway during the night-time period.

However, if further assurance is required to ensure that the cumulative activities from all activities on the site do not exceed those outlined in our original report then a condition of consent such as the following may be appropriate:

- The operation of the care facility (including the mechanical plant) shall not exceed the noise limits in the Tasman Resource Management Plan for the Residential Zone, at the boundary of the site unless a subsequent resource consent is obtained that authorises an exceedance of the noise limit.

20. There is no information in the AES noise report relating to staff shift changes (i.e. frequency, time of day / night etc) and this may result in noise that exceeds the current noise performance standard. The AES noise report identifies one potential non-compliance with the existing noise performance standard for the area. That is in relation to the residential property at 3 Brenda Lawson Way as a consequence of vehicle movements on Sunday (and presumably public holidays, although that is not stated) when the TRMP standard of 40 dB L_{Aeq} (15 minutes) could be breached. This breach could be further exacerbated by the arrival / departure of staff. Please address.

We have been advised that all staff will access the site from Fairrose Drive. The noise from staff arriving / departing the site will therefore not affect the worst-case noise levels predicted at 3 Brenda Lawson Way.

We understand that the timing for the shift changes is still being worked through. However, we have been advised that they will likely be within the following times:

- 0600 – 0715 hours
- 1400 – 1530 hours (main shift)
- 2200 – 2315 hours

Based on the site layout, and the likely number of vehicle movements from a shift change within a 15-minute period using the carpark off Fairrose Drive, we expect full compliance with the District Plan noise limit of 40 dB L_{Aeq} will be achieved at all properties which have not provided affected parties approval.

We trust this is of some assistance. Please do not hesitate to contact us to discuss further as required.

Kind Regards



Clare Dykes
MBS, MASNZ
Senior Acoustic Engineer
Acoustic Engineering Services Ltd

7th November 2019

Ref: 12039

Gary Rae
Gary Rae Consulting Ltd
PO Box 57
MOTUEKA 7143

Dear Gary

Olive Estate Development – Hill Street – Tasman District
Section 92 Response

Following from your instructions, site visits and design considerations, I have now completed my assessment of the matters raised in Council's Section 92 request for further information. As requested, I have reviewed the matters raised by Council and provide my assessment below.

1. Introduction

Tasman District Council has received a consent to extend the Olive Estate Village to the east and connect with Hill Street. Council officers have considered the proposal and have responded to the applicant with a request for further information on a number of drainage related matters in their Section 92 Letter dated 6 August 2019. These matters have been assessed with analysis provided for each relevant item below as informed also by additional documentation appended to this response.

2. Wastewater Matter 18

Council's Section 92 seeks further information on the following:

Please provide details from a suitably qualified waste water engineer that shows how wastewater flows will be held back in storm events. Wastewater currently overflows at the beach road pump station (se rule 17.1.3.1(y)).

This matter is now resolved following and email from Alex Grigg, Council's Development Engineering Officer dated 23rd August 2019 in which he responded to this question and confirmed that "Zoned land can continue as per usual....." Alex Grigg further confirmed that Olive Estates site is "zoned land" and accordingly is not affected by this requirement.

3. Storm water Matter 21

Councils Section 92 letter seeks further information/confirmation as follows:

2.

Olive sec 92 response Oct 2019

Verrall & Partners Ltd

Please provide a peer review of the storm water for the Olive estate from an appropriately qualified and experienced engineer. There is very limited information provided as part of the application and the information which has been provided is based on the initial report undertaken prior to construction of the first stage of development.

Envirolink provide a report dated 2013 submitted as part of RM 13034V1. The Council is concerned that the run-off coefficient used in this report is lower than the coefficient used in more recent storm water reports in this area.

The built environment (aerial photographs) from the initial stages looks like it has more hard standing than envisaged by the report. The weighted C of 0.56-0.60 looks low.

The first point to make is that aerial photos can be deceptive in assessing coverage. Accordingly Canopy have undertaken measurements and calculations for the actual coverage areas of hard standing, roofs, hard and soft landscaping over not only over the proposed development but also over the existing consented Olive Estates site (please refer Attachment 1 Canopy plan of areas). From these areas; runoff coefficients have been calculated by us and storm water flows verified and tabulated (please refer to attachment 2 for our separate report on storm water flows). Our storm water report figures have been peer reviewed by TCEL and accordingly TCEL also reviewed their original pond report and confirmed that all storm water from the proposed development can be drained using a combination of the 300mm pipe to Wilkinson Pl, the 600 pipe in Fairose Dr or the future connection via the existing Olive Estate site (please refer to Attachment 3 for TCEL pond report dated 2/10/2019).

In passing the figures derived in our appended storm water calculations agree reasonably well with the Envirolink Report of April 2013 (submitted as part of the engineering report already) once allowance was made for more of the subject land having to drain via the existing main Olive Estate block pond than originally anticipated but that is primarily due to the restriction on the Wilkinson Place pipe line of only pre developed flows at Councils bequest. On the main Olive Estate site the 2013 Envirolink Report had a runoff coefficient of 0.60 and by including hard landscaping that figure is now 0.609 for the existing development and so this represents only a very minor change.

No detention will be needed and it will just be necessary to use the three outfalls according to their capacities.

4. Storm Water Matter 22

Council's Section 92 seeks further information on the following

Please provide a contour map showing the secondary flows across the site and show that these will be in the roadways prior to leaving the site. This is needed to demonstrate that the secondary flows can be adequately controlled, and that the storm water can be discharged to the Council maintained road drainage network (see rules 36.4.2.1 & 17.1.3.1(z) which require the Councils system to have the capacity to receive the additional storm water). Depending on the outcome of the storm water peer review Table 5 of the AEE may need to be updated.


Verrall & Partners Ltd

We had discussions with Leif Pigott, Coordinator Natural Resource Consents at Tasman District Council on this aspect. We discussed the complex iterative design process for final levels and in particular how for the Olives Estate proposal (unlike a normal green field development), the road does not come first but is the result of considering building type and placement, suitable access to same then that all trickled down to final earthworks and roading. Accordingly this particular Council request should be seen in that light and that any plans we might produce now showing secondary flow paths would not be based on final contours.

Further we also confirmed that that iterative design process always deals with overland flow paths which had predominantly been made to follow the roading corridors. He accepted this and ask that we reiterate what we have already mentioned in the services report that roading will predominantly form the secondary flow path routes.

An option for secondary flows from the NE part of proposed lot 6 in behind Fawden Way, is an overland flows path/channel to take any surface water from that area out towards Farose Dr adjacent to the lot 5/6 boundary line on the north side of the care unit apartments.

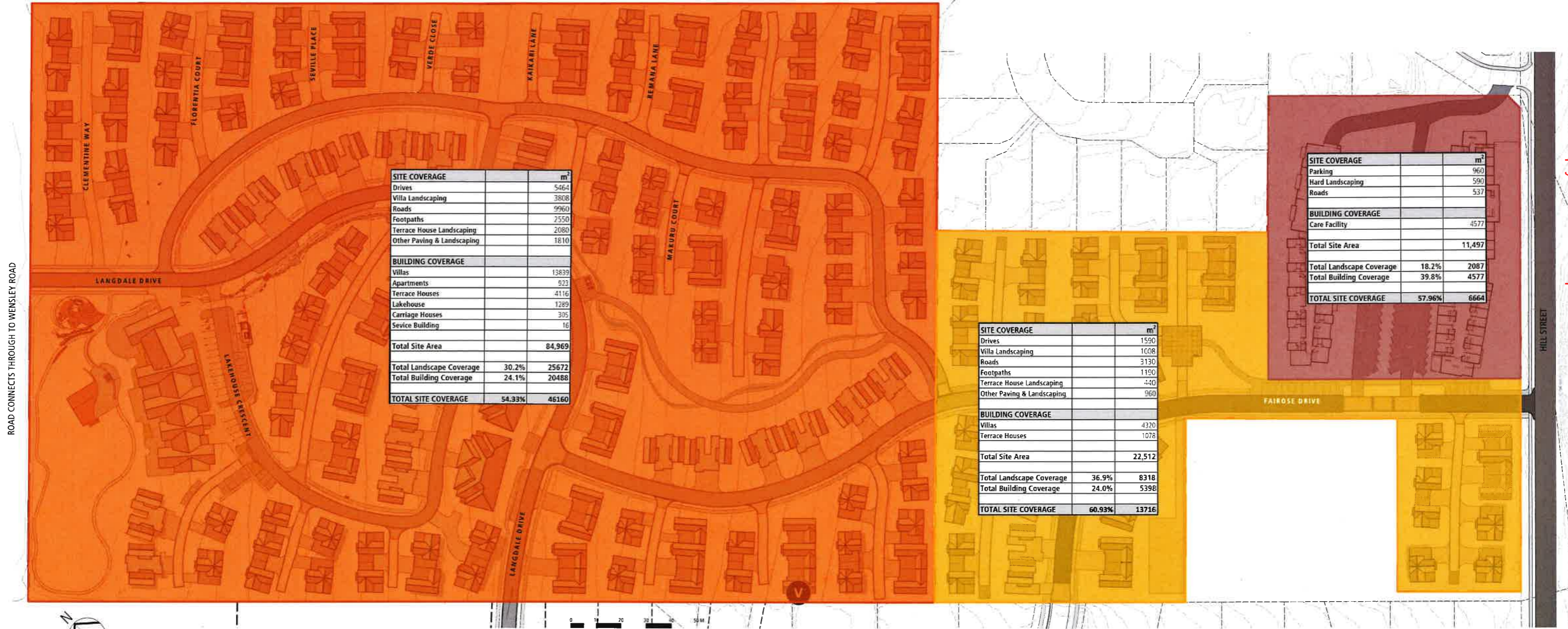
We believe this response and the associated computation should more than alleviate any concerns on the matters raised that Council previously had.

Yours faithfully



MIKE VERRALL
(Director)
Verrall & Partners Ltd

Attachment 1 – Canopy plan of catchment areas
Attachment 2 – V&P Storm Water Run Off Calculations
Attachment 3 – TCEL Olive pond capacity dated 2/10/2019



SITE COVERAGE		m ²
Drives		5464
Villa Landscaping		3808
Roads		9960
Footpaths		2550
Terrace House Landscaping		2080
Other Paving & Landscaping		1810
BUILDING COVERAGE		
Villas		13839
Apartments		923
Terrace Houses		4116
Lakehouse		1289
Carriage Houses		305
Service Building		16
Total Site Area	84,969	
Total Landscape Coverage	30.2%	25672
Total Building Coverage	24.1%	20488
TOTAL SITE COVERAGE	54.33%	46160

SITE COVERAGE		m ²
Drives		1590
Villa Landscaping		1008
Roads		3130
Footpaths		1190
Terrace House Landscaping		440
Other Paving & Landscaping		960
BUILDING COVERAGE		
Villas		4320
Terrace Houses		1078
Total Site Area	22,512	
Total Landscape Coverage	36.9%	8318
Total Building Coverage	24.0%	5398
TOTAL SITE COVERAGE	60.93%	13716

SITE COVERAGE		m ²
Parking		960
Hard Landscaping		590
Roads		537
BUILDING COVERAGE		
Care Facility		4577
Total Site Area	11,497	
Total Landscape Coverage	18.2%	2087
Total Building Coverage	39.8%	4577
TOTAL SITE COVERAGE	57.96%	6664

ORIGINAL CONSENTED DEVELOPMENT - REFER P13	
	TOTAL
VILLAS	119
TOWNHOUSES	32
APARTMENTS	02 (16 UNITS)
CARRIAGE-HOUSES	04
CARE FACILITY UNIT	01

EXISTING OLIVE ESTATE SITE			
	ORIGINAL CONSENTED DEVELOPMENT BUILDINGS TO BE RETAINED	CHANGES TO ORIGINAL CONSENTED DEVELOPMENT BUILDINGS	TOTAL
VILLAS	V 111	V 25	136
TOWNHOUSES	TH 30	TH 12	42
APARTMENTS	AP 02 (16 UNITS)	-	02
CARRIAGE-HOUSES	CH 04	-	04
CARE FACILITY UNIT	-	-	-

PROPOSED HILL STREET BLOCK BUILDINGS		
		TOTAL
VILLAS	V	36
TOWNHOUSES	TH	11
APARTMENTS		-
CARRIAGE-HOUSES		-
CARE FACILITY UNIT	CF	01

30th October 2019

Tasman District Council
Private Bag
RICHMOND

Attention: Leif Piggott

OLIVE ESTATE STORM WATER RUN OFF CALCULATIONS

These calculations have been prepared to demonstrate the extent of proposed run off from the existing and proposed Olive Estate Life Style Development to drain storm water via three available out let points and should be read in conjunction with the TCEL revised Olive Pond Attenuation Report dated 2nd October 2019, the original Envirolink Report of 17 April 2013 and reference to the plan prepared by Canopy that derived the extent of hard and soft surfacing.

From the plan provided by Canopy breaking down the actual areas on the latest layout that has the care unit moved onto the Hill block (as attached) we have reworked the weighted mean runoff coefficients inclusive of hard landscaping that Leif Piggott had concerns about as follows (Read very last paragraph to get our conclusion):

Main Olive Block subject to existing consent(s) to be varied

- Total title development area = 8.4969 ha
- Building coverage = 2.0488 ha (24.1%)
- Roads paths, drives and hard landscaping = 2.5672 ha (30%)
- Soft green landscaping = 3.8809 ha (45.7%)

Runoff coefficient from table 7.4 (TDC stds 2013)

Buildings 24.1% @ 0.90 = 0.217

Roads, paths drives and hard landscaping 30% @ 0.85 = 0.255

Soft landscaping (lawns gardens) 45.7% @ 0.30 = 0.137

Weighted mean coefficient = 0.609 which compares very well to Tony Hewitt's original report at 0.60 on prior building areas so basically no real change !!

The detention volumes, attenuated max out flows, pond free board etc was derived by TCEL with a design certification prepared by Ron O'Hara reviewed by Dave King accepted by Council in both the original consent AND variation(s) thereto. The pond is actually capable of +Q100 volumes with min freeboard before spilling which is greater than the consent(s) actually required AND Ron O'Hara has reviewed this again in light of the additional runoff as a result of this new consent.

Verrall & Partners Ltd

Hill Block Villas

- Total title development area = 2.2515 ha
- Building coverage = 0.5398ha (24%)
- Roads paths, drives and hard landscaping = 0.8318 ha (37%)
- Soft green landscaping = 0.8796 ha (39.1%)

Runoff coefficient from table 7.4 (TDC stds 2013)

Buildings 24% @ 0.90 = 0.216

Roads, paths drives and hard landscaping 37% @ 0.85 = 0.315

Soft landscaping (lawns gardens) 39.1% @ 0.30 = 0.117

Weighted mean coefficient = 0.648, this is higher than for the main Olive block due to the proportionate scale and area of the Fairrose Dr connection relatively speaking to the overall title area.

Hill Block Care Unit

- Total title development area = 1.1497 ha
- Building coverage = 0.4577ha (39.8%)
- Roads paths, drives, parking and hard landscaping = 0.2087 ha (18.2%)
- Soft green landscaping = 0.4833 ha (42%)

Runoff coefficient from table 7.4 (TDC stds 2013)

Buildings 39.8% @ 0.90 = 0.358

Roads, paths, drives, parking and hard landscaping 18.2% @ 0.85 = 0.155

Soft landscaping (lawns gardens) 42% @ 0.30 = 0.126

Weighted mean coefficient = 0.639

Nicol House Lot

- Total title future development area = 0.6579 ha

SAY allow the Olive main block coefficient 0.609 for the purposes of runoff which is still higher than TDC stds for normal residential of say 0.56 to 0.57.

RUNOFF VOLUMES

1. Main Olive Blk TC =17 minutes (per Tony H report)

$A = 8.4996 - 0.5172 = 7.9824$, $C = 0.609$, i for Q 20 (5% AEP) = 90mm & i for Q50 (2% AEP) = 105

Verrall & Partners Ltd

Q20 = 1216.3 l/s & for Q50 = 1419 l/s system capacity for pond

Note: Part of Main Olives (stage 1) catchment into WRDL reticulation so -0.5172 ha for "A" as shown above but also allowed for + 2 ha of Hill Block below Fairrose Dr into this catchment system which is part of below figure(s) for Hill block !

2. Hill Villas TC = 17 minutes (per Olive original assessment as an extension to current catchment)

A= 2.2515, C = 0.648, i for Q 20 (5% AEP) = 90mm & i for Q50 (2% AEP) = 105

Q20 = 365.0 l/s & for Q50 = 425.9.0 l/s

3. Hill Care Unit TC = 17 minutes (per Olive original assessment as an extension to current catchment)

A= 1.1497, C = 0.639, i for Q 20 (5% AEP) = 90mm & i for Q50 (2% AEP) = 105

Q20 = 183.8 l/s & for Q50 = 214.4 l/s

4. Nicol Home lot future TC = 15 minutes (per trek holding accepted assessment)

A= 0.6579, C = 0.609, i for Q 20 (5% AEP) = 95 & i for Q50 (2% AEP) = 112

Q20 = 105.8 l/s & for Q50 = 124.7 l/s

5. Existing SW capacities

- a) Olive main Pond System:

Per Ron O'Hara's attached assessment of the Revised enlarged pond design dated 2nd Oct 2019 shows the pond designed/built to cater for inflow Q20 1477 l/s, Q50 1760 l/s (figures from TCEL 16 July 2014 on supplied to Alex Grigg). Note the outfall is restricted to attenuated outfall of 344 l/s but up to 400 l/s consented to.

- b) Fairrose Drive (Trek) 600 pipe:

Limited to Q20 296 l/s & Q50 346 l/s based on TDC documentation supplied by Phil Doole of TDC and accepted by TDC for that adjoining proposal.

- c) Wilkinson Place 300 pipe:

0.668 ha at 0.3 coefficient limited to existing undeveloped runoff 98 l/s Q20 & 120 l/s Q50 based on existing catchment area of 0.818 ha including 0.150 ha of pond at 0.85 coefficient and 10minute TC 10 minutes

Total run off Existing Olives & New Hill St proposal plus future Nicol house lot = Q20 = 1870.9 l/s & for Q50 = 2196.0 l/s


Verrall & Partners Ltd

Total system capacity = Q20 1871 l/s & Q50 2226 l/s thus both acceptable.

We comment that adding in the hard landscaping (terraces and decks) which generally are not directly reticulated but tend to run off into softer land scape areas adjacent has the effect of increasing the run off co-efficient and thus also the overall SW volumes when in reality that is not necessarily the true case but in this instance Council asked what the effect would/could be if it was included!

So basically all flows can be accommodated it is just how it is divided up between the 3 outfalls. Obviously there is a max volume that can go to both the Wilkinson place 300 pipe and the Fairose Dr 600 pipe and on that basis the balance would be directed into the future Main Olive reticulation as already planned for and that would predominantly be the villas on proposed lot 5 and any surplus pre post development for lot 6 the care unit with pipe work running cross county through lot 5 while the Fairose Dr reticulation would be within the new Fairose Dr extension itself.

Should there be any questions regarding these calculation or the proposed reticulation, please do not hesitate to ask.

Yours faithfully



MIKE VERRALL
(Director)
Verrall & Partners Ltd

Date: 2nd October 2019

Tasman District Council
Private Bag
Richmond
NELSON 7050

Dear Sir / Madam,

STORMWATER ATTENUATION FOR HILL ST BLOCK – THROUGH THE EXISTING DETENTION POND

Tasman Consulting Engineers Ltd (TCEL) has been engaged by Olive Estates to assess the impact of additional stormwater flows from the new Hill Street Block passing through the existing stormwater pond and detention system.

Design Inputs

An assessment of runoff from the new Hill Street Block shows that a 5% AEP (Q_{20}) rainfall event will result in a slight excess of runoff above that permitted for entry to the the 300mm dia Wilkinson Pl stormwater pipe plus the 600mm dia Fairose Dr (Trek) pipe.

Stormwater Flows (Q_{20})

- Stormwater flows (NEW) – Hill St Villas (Q_{20}) = 365 l/s, Hill St Care Unit (Q_{20}) = 184 l/s plus Nicol Home Future development (Q_{20}) = 106 l/s. Total (Q_{20}) = **655 l/s**.
- Stormwater flows (EXISTING) – Main Block Olive Estate Development (Q_{20}) = **1216 l/s**
- Stormwater flow (EXISTING + NEW) (Q_{20}) = **1860 l/s**

Outflow to Existing Pipe Systems (accepted by TDC)

- Available outflow Fairose (Trek) 600mm dia pipe(Q_{20}) = 296 l/s
- Wilkinson Pl 300mm dia pipe (Q_{20}) = 98 l/s
- Hart Stream entry from main Olive Estate Pond (Q_{20}) = 344 l/s
- Total permitted outflow (Q_{20}) = **734 l/s**.



Summary of Stormwater Disposal

Of the **655 l/s** new stormwater flow (Q_{20}) from the new Hill Street Block area, **394 l/s** will be piped directly (without attenuation) into the Wilkinson St and Fairrose (Trek) piped systems.

This leaves a balance of **261 l/s** which is proposed to be directed into the main Olive Estate detention pond.

The total flow entering the pond will be $1216 \text{ l/s} + 261 \text{ l/s} = 1477 \text{ l/s}$.

Current Stormwater Attenuation in the Main Pond.

The original stormwater calculations carried out in 2014 was based on an inflow volume (Q_{20}) of **1440 l/s**. This was based on stormwater from the main block plus 2.0 Ha of catchment in what is now referred to as the Hill St Block.

The attenuated outflow from the pond outlet structure with two 300mm diameter orifice holes was calculated to be **297 l/s**.

Revised Stormwater Attenuation in the Main Pond.

The effect of the increased inflow to the ponds has been reviewed using the original spreadsheet model. The only change to the model is the increased peak inflow rate. Storm duration, orifice size and the pond volumes remain as for the original analysis.

The revised stormwater inflow volume (Q_{20}) is now **1477 l/s**.

The revised attenuated outflow from the pond outlet structure with two 300mm diameter orifice holes was calculated to be **302 l/s**.

Thus, the inflow volume increased by 2.6% and the attenuated outflow increased by 1.7%.

The total attenuated outflow for Olive Estate including flows from the new Hill Street Block (Q_{20}) is still less than the permitted flow into Hart Stream from main Olive Estate Pond (Q_{20}) of **344 l/s**. The revised outflow is **88%** of the permitted flow.

The revised stormwater calculation spreadsheet is attached.

Summary

The developed flow for a 5% AEP (Q_{20}) rainfall event for the new Hill Street Block at Olive Estates is 655 l/s. Of this volume 394 l/s is able to be directed to existing pipes in Wilkinson St and Fairrose Dr. The balance of flow will be directed to the Olive Estates pond.

The total inflow(Q_{20}) to the pond resulting from development of the Hill St Block will increase from **1,440** l/s to **1,477** l/s (2.6%).

The modelling for the attenuation through the two 300mm orifices at the pond has been reviewed to determine the effect of the increased inflow.

The attenuated outflow through the dual outlet orifices (into Hart Stream) rises from **297** l/s to **302** l/s (1.6%).

The attenuated maximum flow is still well below the maximum flow rate of **344** l/s as advised by the TDC.

Yours faithfully

Tasman Consulting Engineers Limited

per:



Ron O'Hara
BE (Civil), CMEngNZ
Senior Engineer

Reviewed:



David King
ME(Civil) CMEngNZ CPEng IntPE
Senior Engineer

DETENTION DESIGN

Client: OLIVE ESTATES

Comments WENSLEY RD

DETENTION POND/AMENITY AREA
ORIFICE FLOW INTO INTAKE STRUCTURE
REVISED Q20 DEVELOPED FLOW

Input Data

Catchment	A	B	
Peak Stormwater Flow	1477.0	0.0 litres/sec	2036.06753
Time Of Concentration	17	0 minutes	
Ratio of Rising:Falling - Hydrograph	3.0 Rising &	5.0 Falling	
Underlying inflow (seepage etc)	10.0 Litres/sec		
Number of Orifices	2		
Orifice Dia	0.300 m		
Orifice Coefficient K	0.62		

Detention Pond Characteristics	Depth	Volume	X^4	X^3	X^3	X^1	C
			Coeff >				
1	0.10	177	-1.38E-14	6.67E-11	-1.39E-07	5.89E-04	-1.16E-04
2	0.20	366					
3	0.30	567					
4	0.40	778					
5	0.50	994					
6	0.60	1215					
7	0.70	1440					
8	0.80	1671					
9	0.90	1912					
10	1.00	2170					

Output Data

Storm Length = A B
45.3 0.0 minutes

Inflow Volume = 2036 cu.m

Max depth in Detention Pond = 0.753 m
Max Flow in Pipe = 301.6 litres/sec

DETENTION DESIGN

Time Period	FinInFlow-A	FinInFlow-B	StartInFlow	FinInFlow	AveInFlow	DepthStart	StartOutFlow	ResidFlow	StartVol	ResidVol	FinVol	DepthFin	Inflow_Vol
min	l/sec	l/sec	l/sec	l/sec	l/sec	m	l/sec	l/sec	cu.m	cu.m	cu.m	m	m ³
1	96.9	0.0	0.0	96.9	48.4	0.000	0.0	48.4	0.0	2.9	2.9	0.002	5.8
2	183.8	0.0	96.9	183.8	140.3	0.002	0.8	139.5	2.9	8.4	11.3	0.007	11.0
3	270.6	0.0	183.8	270.6	227.2	0.007	3.3	223.9	11.3	13.4	24.7	0.014	16.2
4	357.5	0.0	270.6	357.5	314.1	0.014	7.2	306.9	24.7	18.4	43.1	0.025	21.5
5	444.4	0.0	357.5	444.4	401.0	0.025	12.5	388.4	43.1	23.3	66.4	0.038	26.7
6	531.3	0.0	444.4	531.3	487.9	0.038	19.3	468.6	66.4	28.1	94.6	0.054	31.9
7	618.2	0.0	531.3	618.2	574.7	0.054	27.3	547.5	94.6	32.8	127.4	0.073	37.1
8	705.1	0.0	618.2	705.1	661.6	0.073	36.5	625.1	127.4	37.5	164.9	0.093	42.3
9	791.9	0.0	705.1	791.9	748.5	0.093	46.9	701.6	164.9	42.1	207.0	0.116	47.5
10	878.8	0.0	791.9	878.8	835.4	0.116	58.3	777.0	207.0	46.6	253.6	0.141	52.7
11	965.7	0.0	878.8	965.7	922.3	0.141	70.8	851.4	253.6	51.1	304.7	0.168	57.9
12	1052.6	0.0	965.7	1052.6	1009.1	0.168	84.3	924.9	304.7	55.5	360.2	0.197	63.2
13	1139.5	0.0	1052.6	1139.5	1096.0	0.197	98.7	997.4	360.2	59.8	420.0	0.227	68.4
14	1226.4	0.0	1139.5	1226.4	1182.9	0.227	113.9	1069.0	420.0	64.1	484.2	0.259	73.6
15	1313.2	0.0	1226.4	1313.2	1269.8	0.259	129.9	1139.9	484.2	68.4	552.6	0.293	78.8
16	1400.1	0.0	1313.2	1400.1	1356.7	0.293	146.8	1209.9	552.6	72.6	625.2	0.328	84.0
17	1487.0	0.0	1400.1	1487.0	1443.6	0.328	163.8	1279.8	625.2	76.8	702.0	0.365	89.2
18	1434.9	0.0	1487.0	1434.9	1460.9	0.365	179.8	1281.1	702.0	76.9	778.8	0.401	86.1
19	1382.7	0.0	1434.9	1382.7	1408.8	0.401	194.4	1214.4	778.8	72.9	851.7	0.435	83.0
20	1330.6	0.0	1382.7	1330.6	1356.7	0.435	207.1	1149.5	851.7	69.0	920.7	0.466	79.8
21	1278.5	0.0	1330.6	1278.5	1304.5	0.466	218.4	1086.1	920.7	65.2	985.8	0.496	76.7
22	1226.4	0.0	1278.5	1226.4	1252.4	0.496	228.5	1023.9	985.8	61.4	1047.3	0.524	73.6
23	1174.2	0.0	1226.4	1174.2	1200.3	0.524	237.5	962.8	1047.3	57.8	1105.0	0.550	70.5
24	1122.1	0.0	1174.2	1122.1	1148.2	0.550	245.7	902.5	1105.0	54.1	1159.2	0.575	67.3
25	1070.0	0.0	1122.1	1070.0	1096.0	0.575	253.1	843.0	1159.2	50.6	1209.8	0.598	64.2
26	1017.8	0.0	1070.0	1017.8	1043.9	0.598	259.7	784.2	1209.8	47.0	1256.8	0.619	61.1
27	965.7	0.0	1017.8	965.7	991.8	0.619	265.8	726.0	1256.8	43.6	1300.4	0.638	57.9
28	913.6	0.0	965.7	913.6	939.6	0.638	271.2	668.4	1300.4	40.1	1340.5	0.656	54.8
29	861.4	0.0	913.6	861.4	887.5	0.656	276.1	611.4	1340.5	36.7	1377.2	0.672	51.7
30	809.3	0.0	861.4	809.3	835.4	0.672	280.5	554.8	1377.2	33.3	1410.4	0.687	48.6
31	757.2	0.0	809.3	757.2	783.3	0.687	284.5	498.8	1410.4	29.9	1440.4	0.700	45.4
32	705.1	0.0	757.2	705.1	731.1	0.700	287.9	443.2	1440.4	26.6	1467.0	0.712	42.3
33	652.9	0.0	705.1	652.9	679.0	0.712	291.0	388.0	1467.0	23.3	1490.2	0.722	39.2
34	600.8	0.0	652.9	600.8	626.9	0.722	293.6	333.3	1490.2	20.0	1510.2	0.731	36.0
35	548.7	0.0	600.8	548.7	574.7	0.731	295.8	278.9	1510.2	16.7	1527.0	0.738	32.9
36	496.5	0.0	548.7	496.5	522.6	0.738	297.7	224.9	1527.0	13.5	1540.5	0.744	29.8
37	444.4	0.0	496.5	444.4	470.5	0.744	299.2	171.3	1540.5	10.3	1550.8	0.748	26.7
38	392.3	0.0	444.4	392.3	418.3	0.748	300.3	118.1	1550.8	7.1	1557.8	0.751	23.5

DETENTION DESIGN

39	340.2	0.0	392.3	340.2	366.2	0.751	301.0	65.2	1557.8	3.9	1561.7	0.753	20.4
40	288.0	0.0	340.2	288.0	314.1	0.753	301.5	12.6	1561.7	0.8	1562.5	0.753	17.3
41	235.9	0.0	288.0	235.9	262.0	0.753	301.6	-39.6	1562.5	-2.4	1560.1	0.752	14.2
42	183.8	0.0	235.9	183.8	209.8	0.752	301.3	-91.5	1560.1	-5.5	1554.6	0.750	11.0
43	131.6	0.0	183.8	131.6	157.7	0.750	300.7	-143.0	1554.6	-8.6	1546.1	0.746	7.9
44	79.5	0.0	131.6	79.5	105.6	0.746	299.8	-194.2	1546.1	-11.7	1534.4	0.741	4.8
45	27.4	0.0	79.5	27.4	53.4	0.741	298.5	-245.0	1534.4	-14.7	1519.7	0.735	
46	10.0	0.0	27.4	10.0	18.7	0.735	296.9	-278.2	1519.7	-16.7	1503.0	0.727	
47	10.0	0.0	10.0	10.0	10.0	0.727	295.0	-285.0	1503.0	-17.1	1485.9	0.720	
48	10.0	0.0	10.0	10.0	10.0	0.720	293.1	-283.1	1485.9	-17.0	1468.9	0.713	
49	10.0	0.0	10.0	10.0	10.0	0.713	291.2	-281.2	1468.9	-16.9	1452.1	0.705	
50	10.0	0.0	10.0	10.0	10.0	0.705	289.3	-279.3	1452.1	-16.8	1435.3	0.698	
51	10.0	0.0	10.0	10.0	10.0	0.698	287.3	-277.3	1435.3	-16.6	1418.7	0.690	
52	10.0	0.0	10.0	10.0	10.0	0.690	285.4	-275.4	1418.7	-16.5	1402.1	0.683	
53	10.0	0.0	10.0	10.0	10.0	0.683	283.5	-273.5	1402.1	-16.4	1385.7	0.676	
54	10.0	0.0	10.0	10.0	10.0	0.676	281.6	-271.6	1385.7	-16.3	1369.4	0.669	
55	10.0	0.0	10.0	10.0	10.0	0.669	279.6	-269.6	1369.4	-16.2	1353.3	0.662	
56	10.0	0.0	10.0	10.0	10.0	0.662	277.7	-267.7	1353.3	-16.1	1337.2	0.654	
57	10.0	0.0	10.0	10.0	10.0	0.654	275.7	-265.7	1337.2	-15.9	1321.3	0.647	
58	10.0	0.0	10.0	10.0	10.0	0.647	273.8	-263.8	1321.3	-15.8	1305.4	0.640	
59	10.0	0.0	10.0	10.0	10.0	0.640	271.9	-261.9	1305.4	-15.7	1289.7	0.633	
60	10.0	0.0	10.0	10.0	10.0	0.633	269.9	-259.9	1289.7	-15.6	1274.1	0.626	
61	10.0	0.0	10.0	10.0	10.0	0.626	268.0	-258.0	1274.1	-15.5	1258.6	0.619	
62	10.0	0.0	10.0	10.0	10.0	0.619	266.0	-256.0	1258.6	-15.4	1243.3	0.613	
63	10.0	0.0	10.0	10.0	10.0	0.613	264.1	-254.1	1243.3	-15.2	1228.0	0.606	
64	10.0	0.0	10.0	10.0	10.0	0.606	262.1	-252.1	1228.0	-15.1	1212.9	0.599	
65	10.0	0.0	10.0	10.0	10.0	0.599	260.2	-250.2	1212.9	-15.0	1197.9	0.592	
66	10.0	0.0	10.0	10.0	10.0	0.592	258.2	-248.2	1197.9	-14.9	1183.0	0.586	
67	10.0	0.0	10.0	10.0	10.0	0.586	256.2	-246.2	1183.0	-14.8	1168.2	0.579	
68	10.0	0.0	10.0	10.0	10.0	0.579	254.3	-244.3	1168.2	-14.7	1153.6	0.572	
69	10.0	0.0	10.0	10.0	10.0	0.572	252.3	-242.3	1153.6	-14.5	1139.0	0.566	
70	10.0	0.0	10.0	10.0	10.0	0.566	250.4	-240.4	1139.0	-14.4	1124.6	0.559	
71	10.0	0.0	10.0	10.0	10.0	0.559	248.4	-238.4	1124.6	-14.3	1110.3	0.553	
72	10.0	0.0	10.0	10.0	10.0	0.553	246.4	-236.4	1110.3	-14.2	1096.1	0.546	
73	10.0	0.0	10.0	10.0	10.0	0.546	244.5	-234.5	1096.1	-14.1	1082.1	0.540	
74	10.0	0.0	10.0	10.0	10.0	0.540	242.5	-232.5	1082.1	-13.9	1068.1	0.534	
75	10.0	0.0	10.0	10.0	10.0	0.534	240.5	-230.5	1068.1	-13.8	1054.3	0.527	
76	10.0	0.0	10.0	10.0	10.0	0.527	238.5	-228.5	1054.3	-13.7	1040.6	0.521	

DETENTION DESIGN

77	10.0	0.0	10.0	10.0	10.0	0.521	236.6	-226.6	1040.6	-13.6	1027.0	0.515
78	10.0	0.0	10.0	10.0	10.0	0.515	234.6	-224.6	1027.0	-13.5	1013.5	0.509
79	10.0	0.0	10.0	10.0	10.0	0.509	232.6	-222.6	1013.5	-13.4	1000.1	0.503
80	10.0	0.0	10.0	10.0	10.0	0.503	230.6	-220.6	1000.1	-13.2	986.9	0.497