

One Tasman Pukeahu Park

Civil Resource Consent Report

**One Tasman Development
Limited Partnership**

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2023-01-25

aurecon

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to life*

Document control record

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1 Introduction

1.1 Consent Amendment

Aurecon NZ Ltd (Aurecon) prepared an assessment dated 07th September 2021 on the applicant's proposal to construct a new multi-building, multi-storey residential development at 1 - 23 Tasman Street, Mt Cook. That assessment proceeded on basis that the proposal involved the construction of:

- Northern Apartments: a 10-storey base-isolated building at the northern end of the site with 104 apartments;
- Southern Apartments: a 9-storey base-isolated building at the southern end of the site with 92 apartments;
- Terrace Houses: 3-storey terrace houses, five fronting Old Buckle Street and four on the corner of Old Buckle Street and Tasman Street; and
- Courtyard Terraces: eight 2-storey terrace houses situated above the central carpark.

In that 07th September 2021 report, Aurecon assessed the civil engineering effects as less than minor.

The applicant subsequently modified the proposal to reduce the height of the Northern and Southern Apartments to 8 and 5-storeys respectively, among other minor amendments. Aurecon's assessment of that modified proposal was that the civil engineering effects remained less than minor.

The current proposal is the same as the original proposal assessed in the 07th September 2021 report in all respects that are material to Aurecon's assessment.

Aurecon's assessment is that the civil engineering effects of the current proposal are less than minor when considered against the environment including the consented 8 and 5-storey development. For completeness, and consistent with Aurecon's 07th September 2021 report, Aurecon's assessment is that the civil engineering effects of the current proposal are also less than minor when considered against the current, physical characteristics of the site.

During the consent assessment period, consultation with Wellington Water and Wellington City Council continued (provided in Appendix B), culminating in several conditions on the approved consent. The amendments to the consented proposal, creating this current proposal, do not affect the Aurecon civil engineering documentation as submitted in the 07 September 2021. However, for completeness, this documentation has been updated to reflect the conditions of the approved consent. The same civil engineering layouts (covering water, wastewater and stormwater) described in this report would also be proposed for the consented scheme.

The consent conditions obtained through the original consent application (SR 500876) which are applicable to the stormwater, wastewater and water supply layouts and addressed in this documentation are shown below.

- *The consent holder must provide:*
 - *Each residential dwelling in Blocks B and C with separate and individual 20 mm ID water supply connections to the public water supply main in Old Buckle Street, each with a manifold at the property boundary.*

Alternatively, single 32 mm ID connection can be provided to service groups of 2 Lots splitting to individual tobies at the property boundary.
 - *the Café within Block B with a separate appropriately sized metered water supply connection to the public water supply main in Old Buckle Street, with a manifold at the property boundary. An RPZ – type backflow preventer is required if the connection is greater than 20 mm ID.*
 - *Blocks A, D and E with an appropriately sized separate and individual water supply connection to a public water supply main for domestic water supply, with an appropriately located manifold. An RPZ – type backflow preventer is required if the connection is greater than 20 mm ID.*

- *The consent holder may construct a new public water main within the site to service Blocks A, D and E.*
- *The consent holder shall provide each dwelling/unit within Block A, D and E with a separate water supply shut-off valve. The shut-off valve shall be located such that each dwelling or unit can be independently isolated, if required.*
- *The consent holder shall provide Blocks A and E with separate and individual firefighting connections in accordance with the NZ Fire Service Code of Practice for Firefighting Water Supplies NZS PAS 4509:2008 [and the Code of Practice for Land Development], and:*
 - *a separate application for the fire connection must be submitted to Council, along with detailed calculations as per condition (d) and a layout plan showing the proposed connection. The design of the fire service connection and sprinkler system shall allow for any head loss incurred by the required backflow prevention containment device*
 - *The consent holder shall provide all fire connections/sprinkler connections with a double check detector check backflow prevention containment device.*

Note: A backflow device of a commercial or industrial site is required to be added to the building warrant of fitness (BWOF) compliance schedule for the property.

- *No water supply pipe(s) for Blocks B or C can pass through a new lot, or cross a proposed boundary between lots, to serve another lot being created by the subdivision, except where it is within an associated right of way or access lot.*

A Surveyor must certify in writing that, at the time of certification, this has been achieved.

- *The development of this site will require the public stormwater and wastewater mains to be extended to serve the proposed lots. All newly constructed wastewater and stormwater mains to be vested in Council shall be approved by Wellington Water Land Development Team based on a [video or] closed circuit television (CCTV) inspection carried out by the consent holder in accordance with the New Zealand Pipe Inspection Manual Fourth Edition. A pan tilt camera shall be used, and lateral connections shall be inspected from inside the main.*

Note: It is anticipated that public stormwater and wastewater mains will be extended from Old Buckle Street into the site to service the apartments and fee simple lots.

- *The consent holder must provide:*
 - *each residential dwelling in Blocks B,*
 - *the Café within Block B, and*
 - *Blocks A, D and E,*

with appropriately sized separate and direct, wastewater and stormwater connections to a public wastewater and stormwater network.

Note: It is anticipated that the above condition will be achieved by providing each dwelling / block with a connection to the public main extended under condition (50), alternatively Block E may be provided with separate and direct connections to the public mains in Tasman Street or the existing public main within the site itself.

- *The consent holder may create common shared private stormwater and wastewater drains to serve Blocks B and / or Block C (separately), and*
 - *A shared services plan in accordance with Wellington Regional Specification for As-built Water Services is required that identifies the shared services and the respective ownership.*
 - *Each Lot must be provided with suitably sized, separate and direct lateral connections to the shared private drain.*

Note: The shared private drain must be located in an accessible location for ongoing operation and maintenance. The creation of a common shared private drain within the basement at the rear of Block B will not be accepted by WWL.

- All stormwater and wastewater lateral connections and / or shared drains are to in accordance with the Wellington City Council Code of Practice for Land Development and must be at locations approved in writing by the Wellington Water Land Development Team.

1.2 General

One Tasman Development Limited Partnership are proposing a new residential development at 1 Tasman St, Mt Cook. Aurecon has been engaged by One Tasman Development Partnership Limited to provide a high-level assessment of the three waters civil engineering services, power, telecommunications and gas ducting in support of the resource consent for this development.

This study includes:

- Confirmation of Wellington Water design requirements for the proposed development.
- High level assessment of stormwater drainage and stormwater management requirements for the proposed development, including flooding impacts.
- High level assessment of new potable water and wastewater services for the proposed development (onsite and connections to existing network).
- High level assessment of power, telecommunications and gas ducting for the proposed development

1.3 Site description

The site is located in Mount Cook on the corner of Tasman St and Old Buckle St. It includes the 1 Tasman St and 23 Tasman St land parcels. The site with existing buildings is shown in Figure 1.



Figure 1. Site location with existing buildings (retrieved from ArcGIS Online, 27 August 2021)

Tasman St and Old Buckle St run along the western and northern edges of the site, respectively. The other site boundaries are shared with other residential areas. The site is already developed with multiple multistorey buildings and a carpark. The site is in close proximity to SH1, the Basin Reserve and the War Memorial Tunnel.

1.4 Proposed development

The proposed development consists of five new buildings. There are 204 apartments and 17 townhouses in the current plan, totalling 221 dwelling units. The ground floor plan is shown in Figure 2.

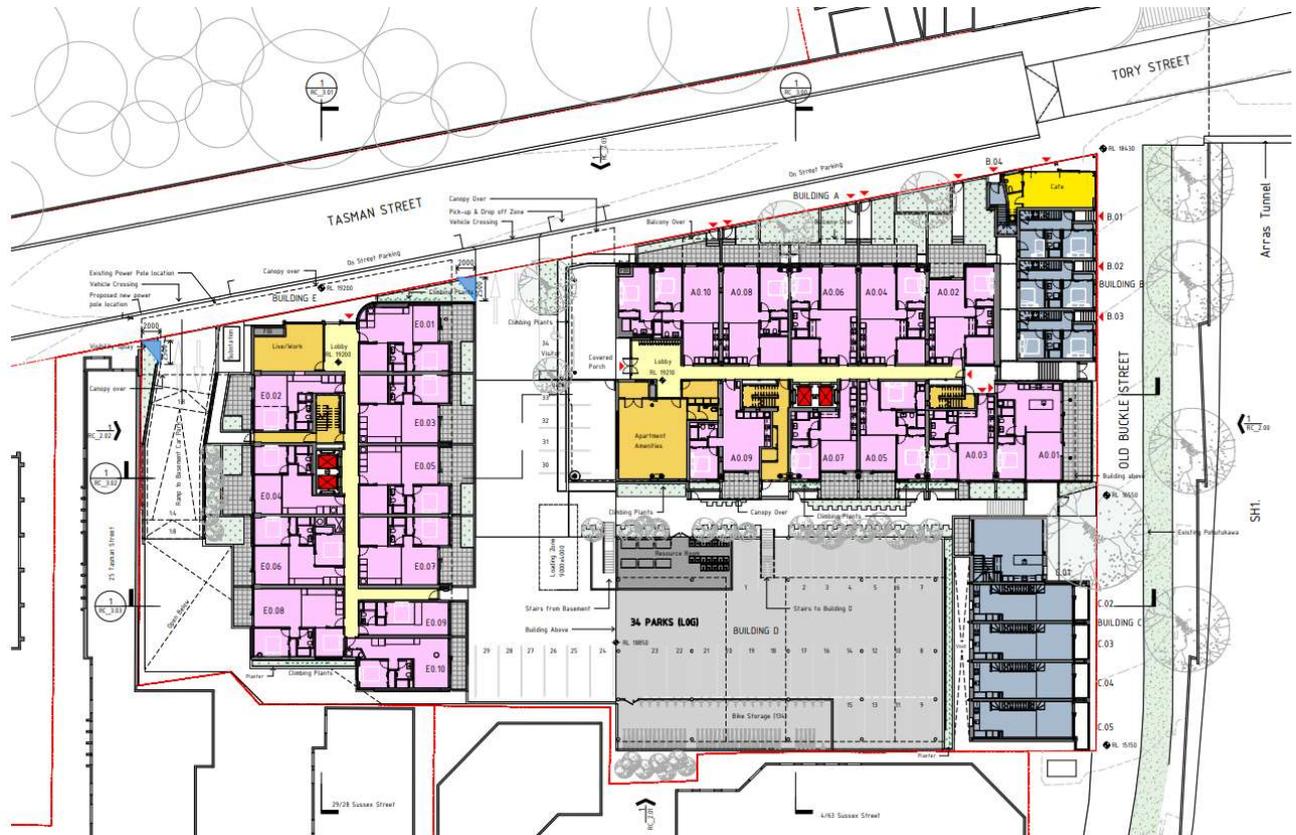


Figure 2. Architect's ground floor plan (received from Athfield Architects, 20 December 2022)

The development is to be completed in two construction phases:

- Stage 1
 - North Apartments (Building A)
 - Pukeahu Terrace Houses (Building B)
 - Buckle St Terrace Houses (Building C)
 - Courtyard Terraces (Building D)
- Stage 2
 - Southern Apartments (Building E)

Although the project is separated into two stages, the three waters service corridors within the site and public connections will be installed in Stage 1. The private drainage and other services for the Southern Apartments will be installed to a predetermined demarcation point (likely 1m from the proposed building footprint) and capped until the time of connection during Stage 2.

The new development will be accessed at two points on Tasman St. The southern access point leads to the basement carpark. The basement plan is shown in Figure 3. There is a second level to the basement, which is shown in Figure 4.

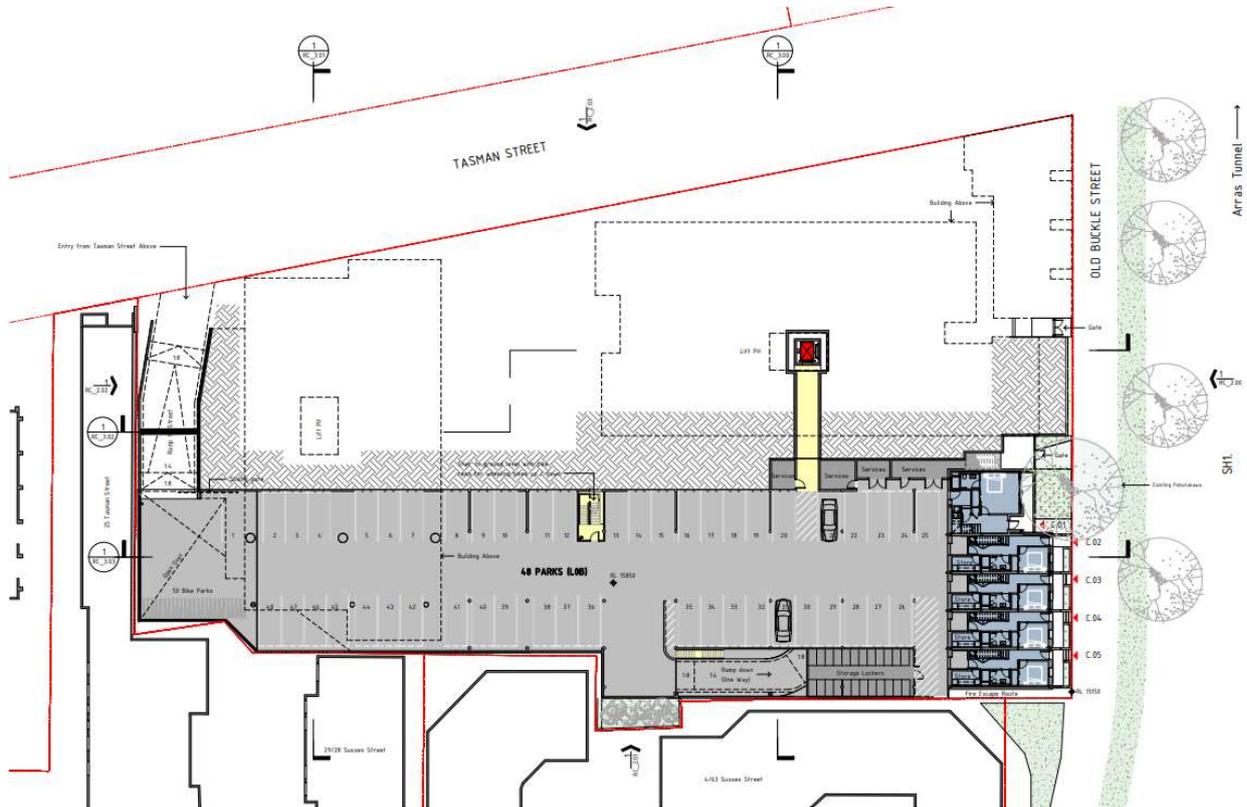


Figure 3. Architect's basement plan (received from Athfield Architects, 20 December 2022)

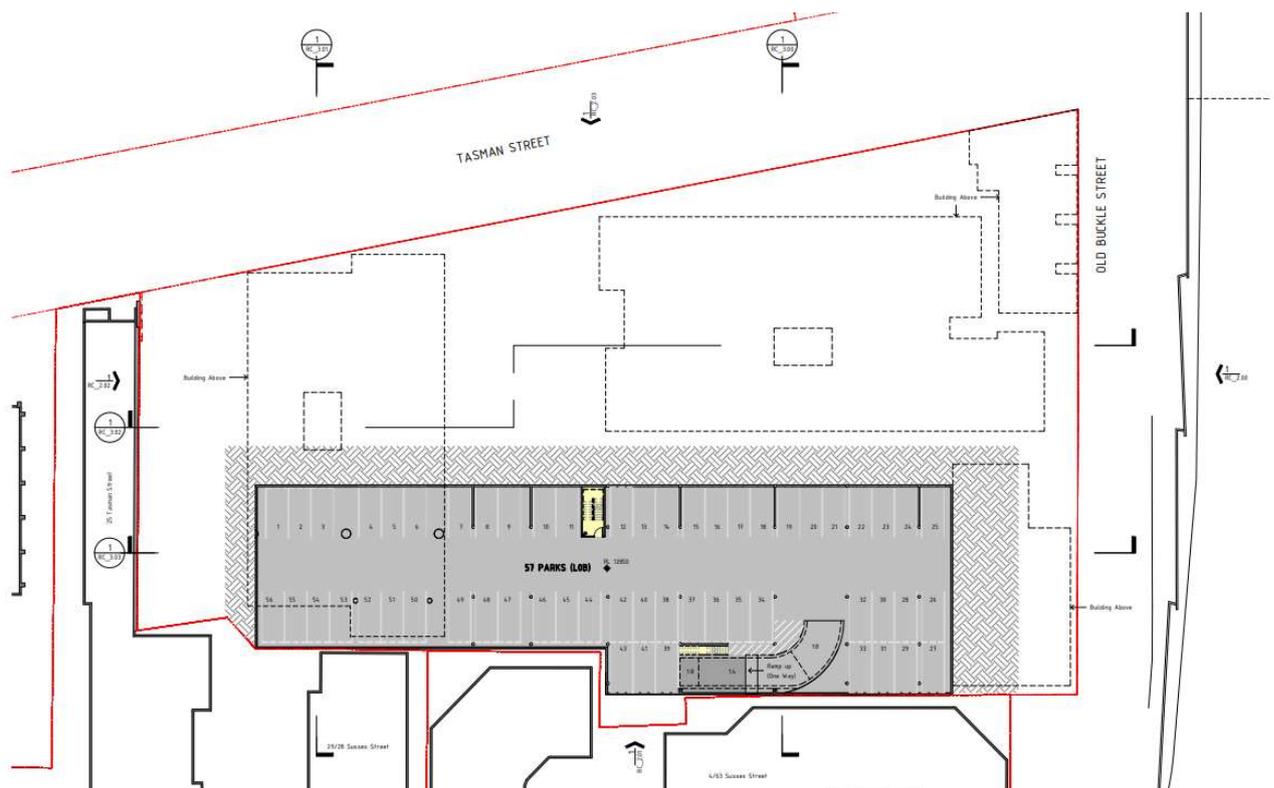


Figure 4. Architect's lower basement plan (received from Athfield Architects, 20 December 2022)

The proposed ground levels across all buildings is 19.200 m RL, with the exception of the café at the northwest corner of the site which is at 18.600 m RL. These levels are consistent with the received topographic survey information along Tasman St, indicating that tie into existing levels will be achieved.

The site will be built up from existing levels at the northern, southern and eastern boundaries. The site levels and interface with the basement and buildings structures, including any retaining structures, is being specified by the structural and geotechnical engineers and is not discussed in any detail within this report.

2 Wastewater

2.1 Existing infrastructure

Wellington Water's GIS online shows a DN160 PE100 wastewater main that drains along Old Buckle St and a DN150 earthenware main which transitions to a DN150 PE100 line that drains through the southern boundary of the site to a DN225 concrete main on Sussex St (SH1). A DN200 earthenware main drains southward along Tasman St. There is also a 600mm by 900mm oval brick trunk main which runs along Old Buckle St. These wastewater pipes are shown in Figure 5 below.

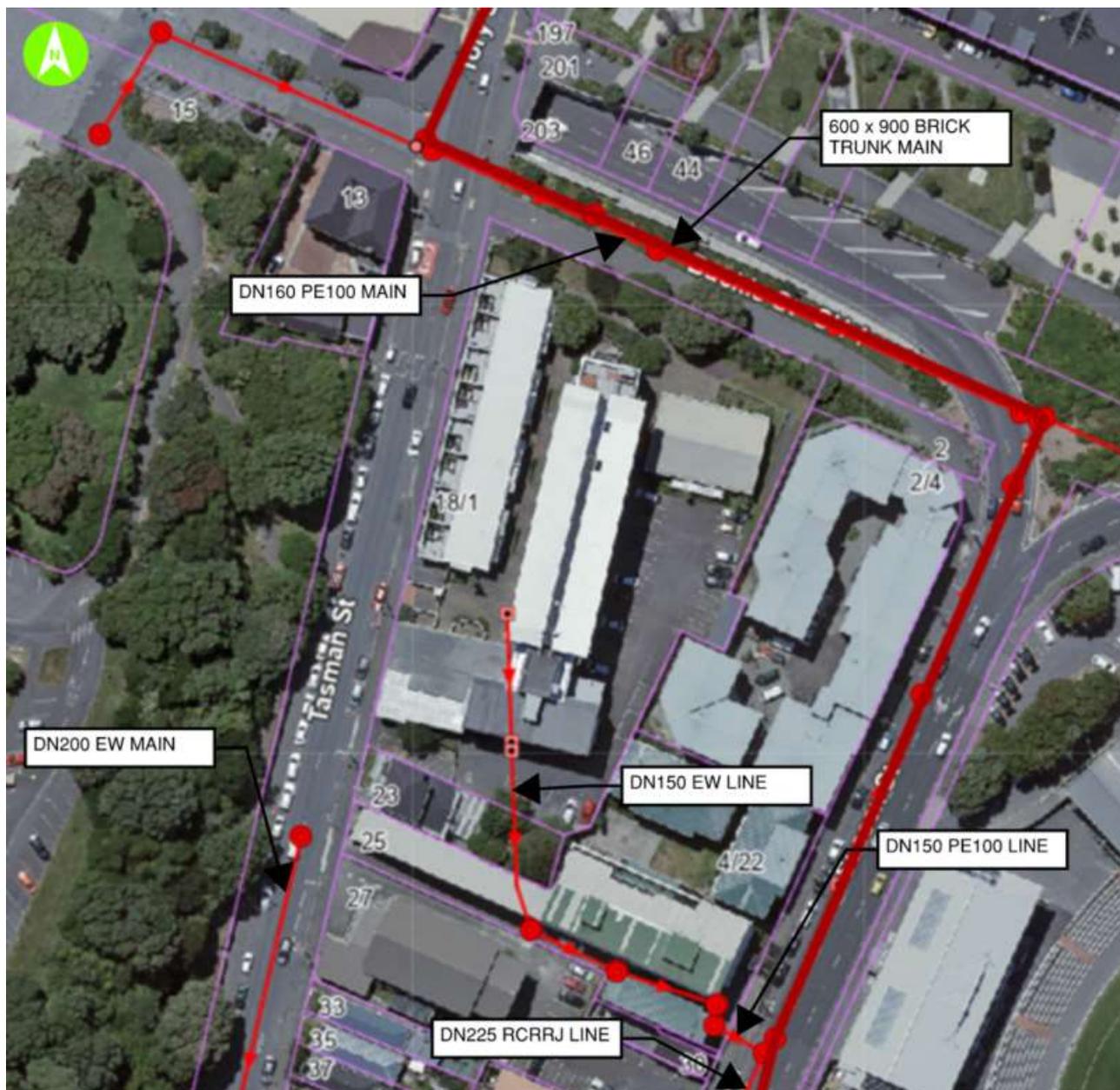


Figure 5. Wastewater network at the site (retrieved from Wellington Water Online GIS, 25 August 2021)

The survey confirmed inverts at manholes on the DN160 PE100 line and DN150 PE100 line draining toward the main on Sussex St. The invert of the public main at the existing connection on Old Buckle St is 15.04 m RL.

2.2 Proposed wastewater infrastructure

The existing lateral connection for the site to the north is old and of unknown condition and is not recommended to be reused; a new connection is proposed. A new connection to the DN160 PE100 main along Old Buckle St is proposed as shown in the Civil Drawings in Appendix A.

A new public wastewater service, consisting of a pipeline connection to a DN1050 manhole on the existing 160 OD HDPE main, will be brought within the site boundary with an easement to be agreed with Wellington Water. Each building will connect to the public main as follows:

- Building A: Single outgoing lateral connection to the new public main within the site
- Building B: Each townhouse to have an individual lateral connection to a new private collector in Old Buckle St (location to be agreed with WCC), which is to be connected to the public main
- Building C: Each townhouse to have an individual lateral connection to a new private collector in Old Buckle St (location to be agreed with WCC), which is to be connected to the public main
- Building D: Single outgoing lateral connection to the new public main within the site
- Building E: Single outgoing lateral connection to the new public main within the site

The exact alignment of the connecting drain will be confirmed on site to ensure there is minimal disturbance to the existing tree near the connection location.

Due to the elevated nature of the site, achieving sufficient pipe grades for gravity-reticulated wastewater and self-cleansing velocity requirements does not pose an issue. The surveyed inverts drop steeply in the DN160 PE100 line indicating that the lateral gravity connection will be achievable. However, this will be confirmed in later stages, with chasing the main downstream to be avoided if possible. Nearby service crossings on Old Buckle St indicate that the proposed connection is feasible. Details of the drainage within the site to be confirmed in future design stages.

It is recommended that further investigation in future design phases is undertaken to ensure no clashes will arise with the service crossing. Hydro-excavation or other non-destructive methods will be required to provide accurate depth information at the crossing locations of the water and electrical services.

The current connection to the DN150 earthenware main is not proposed to be maintained because reticulation through the basement is more difficult to achieve. It is proposed to abandon this line, avoiding the need to reinstall the pipe outside of the building footprint. However, this connection could be used as an alternative to the Old Buckle St connection for Building E if it is found that there is no viable internal route for the service to connect to the new public main at the north. The existing earthenware main would need to be investigated by CCTV to review its condition. If it is in poor condition options would need to be worked through with Wellington Water such as pipe bursting or lining.

A preliminary peak wet weather flow (PWWF) demand of 10.4 L/s has been estimated using the method nominated by the Wellington Water Regional Standard. The advice from Wellington Water, shown in Appendix B, indicates that the surrounding network has sufficient capacity for this development, so no wastewater mitigation will be required.

3 Stormwater

3.1 Existing infrastructure

Wellington Water's GIS online shows there is a DN300 concrete stormwater main which drains eastward along Old Buckle St. A DN225 concrete main runs from the southeast corner of the site, transitioning to a DN300 concrete main at Sussex St (SH1). There is also a 350mm ovoid brick stormwater main which drains southward along Tasman St. The stormwater network is shown in Figure 6 below.

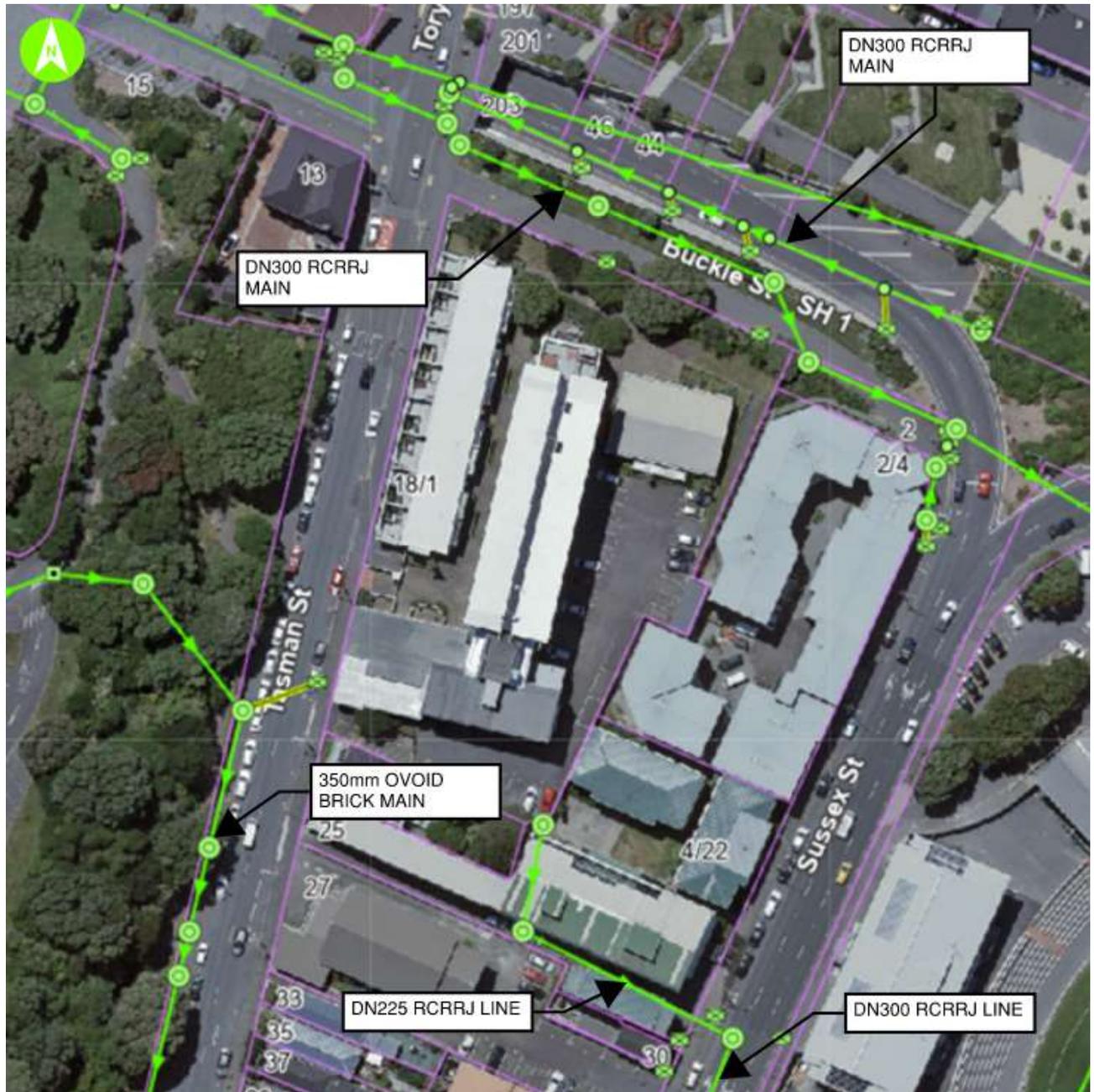


Figure 6. Stormwater network at the site (retrieved from Wellington Water Online GIS, 25 August 2021)

The survey confirmed inverts in the existing private network, which is not shown on the GIS (refer to plan in Appendix A). This line runs southward along the eastern boundary of the site and connects to the DN225 main at the southeast corner of site.

3.2 Flood risks

Examination of the flood map supplied as part of the Wellington Water advice, provided in Appendix B, shows the road intersection by the northwest corner of the site is currently at risk of flooding in the 100-year flood event including climate change effects. Climate change is incorporated by increasing rainfall by 20% and allowing for 1m of sea level rise. The calculated flood depths at this intersection are between 50 and 250 mm. Wellington Water have already advised that the risk of the floodwater affecting the site is low, provided the Building Code requirements are satisfied.

The Building Code for surface water, NZBC E1, requires that the floor levels of buildings are at least 150mm above the lowest point on the site boundary, given that this site sits lower than the level of the crown of Tasman St (refer to clause 1.0.3, E1/AS2). The floor levels, which are 19.200 m RL for the upper ground floor of the residential buildings and 18.600 m RL for the café, are higher than the adjacent existing ground level on Old Buckle St of 18.430 m RL. For a site above Old Buckle St, the floor levels have more than 150 mm elevation above road, so the proposed floor levels are code compliant.

The site does not sit within an existing overland flow path. Overland flow generated within the site will be allowed for within the design, the requirements for this will be incorporated in later project stages in conjunction with the landscape architect.

3.3 Proposed stormwater infrastructure

The existing and proposed developments are both largely impervious, and the advice from Wellington Water, shown in Appendix B, confirms that the development will not have attenuation requirements since stormwater neutrality is already achieved. It is noted that green areas are to be kept where possible, and the latest plans from the architect show that the green areas are being included where possible. Requirements for stormwater treatment will be considered in future design stages.

Due to the age of the site, the proposed stormwater infrastructure will need to be constructed new, as required by Wellington Water's Regional Standard for Water Services, December 2021. A new public stormwater pipe is proposed to connect to the existing DN300 concrete main on Old Buckle St via a DN1050 manhole. This will be brought within the site boundary with an easement to be agreed with Wellington Water. Each building will connect to the public main as follows:

- Building A: Single outgoing lateral connection to the new public main within the site
- Building B: Each townhouse to have an individual lateral connection to a new private collector in Old Buckle St (location to be agreed with WCC), which is to be connected to the public main
- Building C: Each townhouse to have an individual lateral connection to a new private collector in Old Buckle St (location to be agreed with WCC), which is to be connected to the public main
- Building D: Single outgoing lateral connection to the new public main within the site
- Building E: Single outgoing lateral connection to the new public main within the site

Threshold drainage will be required for the basement access ramp. Further to this, any stormwater in the basement and lower basement will be managed with threshold drainage within the basement. This stormwater will need to be pumped to high level for drainage to Old Buckle St – all details of this will be confirmed in future design stages by the hydraulics engineer.

Surface drainage has not been detailed in this proposal and will be examined in future design stages in coordination with the Architect. Some areas of the site may require additional connections to the public network. Correspondence with WWL has not covered surface drainage collection by the public system and will be coordinated in future design stages.

4 Water Supply

4.1 Existing infrastructure and network capacity

Wellington Water's GIS online shows a DN200 ductile iron concrete lined (DICL) main running along Old Buckle St, a DN150 DICL main on Sussex St and a DN150 mPVC main running along Tasman St. There is also a DN900 STCL transmission main running along Tasman St, which has DN375 STCL transmission main which branches off along Old Buckle St. Existing fire hydrants are located on Tasman Street, Buckle Street and Sussex Street.

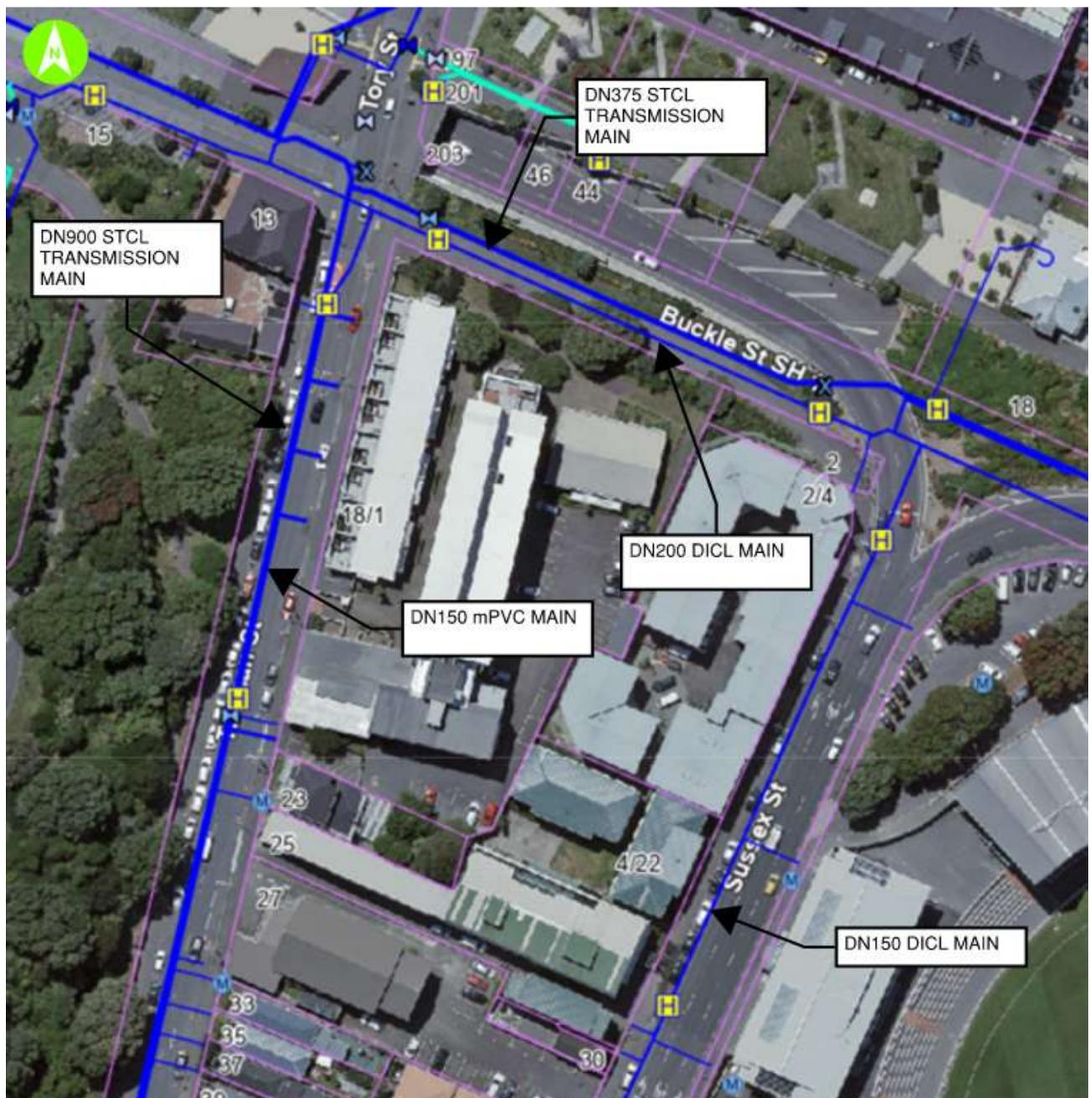


Figure 7. Water supply network at the site (retrieved from Wellington Water Online GIS, 25 August 2021)

Survey has been undertaken to locate the DN200 main and lateral connections to the DN150 mPVC main.

Hydrant testing has also been undertaken for the surrounding network at the nearest hydrants. Seven-day pressure logging demonstrated existing network pressures between 65 m and 74 m head, which meets the requirements under the Regional Standards for Water Services (December, 2021). Although a flow test was undertaken, the achievable flow rate was restricted by parked cars and for health and safety reasons.

However at the time of the test, a flow rate of 38.5 L/s was still achieved with a minimal 1-2% pressure reduction. The testing report, which can be found in Appendix C, indicates there is still likely further capacity within the pipe. Required building fire requirements and flow rates in line with SNZ PAS 4509:2008 will be confirmed during later project stages by the project Fire Engineer.

4.2 Proposed water infrastructure

A public water main will be required for water supply to be brought into the site, and it is proposed that this is taken off the DN150 mPVC main on Tasman St. This will avoid congesting the service corridor between Buildings A and C, where the main laterals for stormwater and wastewater are proposed. The water main will have five laterals as follows:

- Building A: one domestic and one fire protection water supply connection
- Building D: one domestic water supply connection
- Building E: one domestic and one fire protection water supply connection

Backflow prevention devices in accordance with the Regional Specification for Water Services (December 2021) and the Wellington City Council Backflow Containment policy are required on each of the five laterals off the rider main. The exact type and location of these, including whether these can be housed within the buildings, is to be confirmed in future design stages.

Easements in favour of Wellington City Council will be required over the proposed public water main to ensure that it is accessible for Wellington Water to undertake maintenance responsibilities. Extents of this easement will need to be agreed with Wellington City Council.

The townhouses in Buildings B and C will each have individual connections to the public main on Old Buckle St with manifolds at the boundary. The café has an individual metered connection to the public main with RPZ backflow prevention device.

For each fire protection water supply, Holmes Fire will manage the sprinkler reticulation beyond backflow prevention. For the townhouses, there are currently hydrants within the required proximity to be compliant with SNZ PAS 4509:2008, as shown in Figure 7.

Any existing water connections to the property must be disconnected from the public main and capped at the main. An application is to be made to Wellington City Council for these works.

Sizing of all water supply mains shall be confirmed during future design stages.

5 Power, Telecommunications and Gas

5.1 Power and telecommunications

There are existing Chorus, CityLink and Vodafone telecommunications in the area, with cables running along Tasman St. Communications ducting to the developments will likely be from Tasman St but are to be confirmed. Indicatively, the location of cables pulled through to the site will be manageable with plenty of space within the service corridor to Tasman St, but exact cabling routes will be confirmed in further design phases. Cabling will run to the central services room, and then be distributed to the buildings.

Wellington Electricity own 400 V, 11 kV, and strategic pilot cables within Old Buckle St and Tasman St, and there are 33 kV cables in Old Buckle St. There is an existing substation on the site which is mainly dedicated to servicing the existing apartments at the site but is understood to also be connected to the street feed.

A new substation will have to be installed as part of the development, with the current under-capacity substation being decommissioned. The new above-ground substation will be constructed at the southwest corner of the site next to the basement access ramp prior to demolition works, allowing transfer of electrical feeds to the new substation. The high voltage (HV) and low voltage (LV) ducting routes are still being confirmed by the electrical engineers. One option for this is feeding the cables back around Tasman St and through the central access point to the site. Allowance for this ducting route will be made throughout the development of other service layouts.

5.2 Gas

The current condition of the existing laterals is unknown, and no assessment of capacity has been made to date. Engagement with PowerCo would be required if gas were to be required for the development.

6 Safety in Design

Safety in design will need to be considered in future design stages. The following is a list of safety in design items that are relevant to the development.

- Car and pedestrian access to the site will be considered to minimise accident potential.
- Access grades are to be made compliant to ensure safe access in and out of site.
- Services are to be positively identified prior to any ground penetration works, with hand dig as required. There are quite a lot of existing services on this site.
- Hazards associated with installing services on the proposed alignments will be considered, e.g. deep trench excavations avoided where possible and safe clearances to other services maintained.

Note that these will be coordinated with other consultants and this list will be further developed in later design stages.

Appendix A – Civil Drawings



NOTES

- EXISTING SERVICES LAYOUTS ARE A COMBINATION OF B4UDIG INFORMATION AND SPENCER HOLMES SURVEY, RECEIVED 01/03/2021. AURECON TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE SERVICES INFORMATION DISPLAYED.
- GROUND FLOOR BASEPLAN RECEIVED FROM ATHFIELD ARCHITECTS DECEMBER 2022
- PROPOSED SERVICE CONNECTIONS AND LAYOUTS SHOWN ARE PREPARED TO MEET THE CONDITIONS OF THE APPROVED LAND USE CONSENT FOR THE MODIFIED PROPOSAL
- STORMWATER QUALITY OUTCOMES TO BE FURTHER COORDINATED WITH THE ARCHITECT IN FUTURE DESIGN STAGES.
- SURFACE DRAINAGE, INCLUDING MANAGEMENT OF STORMWATER WITHIN THE BASEMENT, NOT SHOWN - TO BE COORDINATED WITH THE ARCHITECT AND HYDRAULIC ENGINEER IN FUTURE DESIGN STAGES.
- ALL TOWNHOUSES IN BUILDINGS B AND C TO HAVE INDIVIDUAL WATER SUPPLY CONNECTIONS (OR ONE CONNECTION PER TWO LOTS) WITH A MANIFOLD AT THE SITE BOUNDARY.
- RODDING POINTS, THRUST BLOCKS AND METERING NOT SHOWN FOR CLARITY.
- PIPE SIZES TO BE CONFIRMED IN FUTURE DESIGN STAGES
- ALL EXISTING WATER CONNECTIONS TO THE PROPERTY TO BE DISCONNECTED FROM THE PUBLIC MAIN.
- ALL PRIVATE LATERAL LOCATIONS ARE APPROXIMATE ONLY AND ARE TO BE COORDINATED WITH THE HYDRAULICS ENGINEER IN FUTURE DESIGN STAGES.
- POTHOLING INVESTIGATIONS TO POSITIVELY LOCATE POSITION OF EXISTING SERVICES REQUIRED TO CONFIRM FEASIBILITY OF PROPOSED CROSSING SERVICE ALIGNMENTS.
- ALL BACKFLOW PREVENTION DEVICE LOCATIONS INDICATIVE ONLY. POSSIBILITY OF LOCATING BFP DEVICES INTERNALLY TO BE EXPLORED IN FUTURE DESIGN STAGES

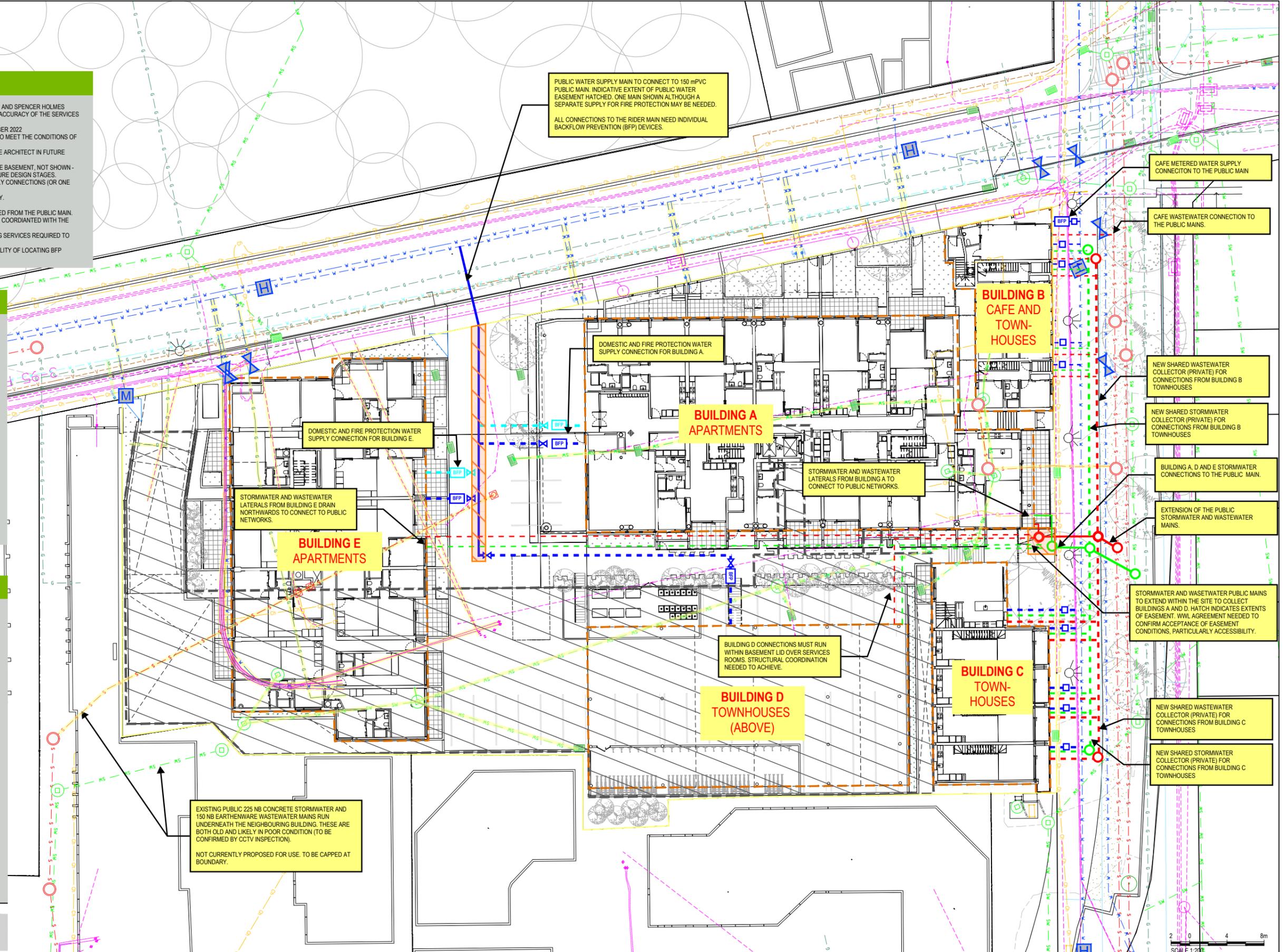
PROPOSED SERVICES LEGEND

- STORMWATER PIPE (PRIVATE)
- STORMWATER PIPE (PUBLIC)
- STORMWATER MANHOLE
- WASTEWATER PIPE (PRIVATE)
- WASTEWATER PIPE (PUBLIC)
- WASTEWATER MANHOLE
- WATER SUPPLY (PUBLIC)
- DOMESTIC WATER SUPPLY (PRIVATE)
- FIRE PROTECTION SUPPLY (PRIVATE)
- WATER TOBY BOX (MANIFOLD)
- BFP BACKFLOW PREVENTION DEVICE
- X WATER SUPPLY VALVE
- WWL EASEMENT (INDICATIVE ONLY)

EXISTING SERVICES LEGEND

- GAS PIPE
- SEWER MANHOLE
- SEWER PIPE
- STORMWATER PIPE
- STORMWATER MANHOLE
- SUMP
- WATERMAIN
- X WATER VALVE
- X HYDRANT
- X WATER METER
- POWER
- LAMP POST
- VODAFONE
- CHORUS
- CITY LINK
- VECTOR COMMS
- SITE BOUNDARY
- ABANDONED SERVICES

- BASEMENT EXTENT
- BUILDING OUTLINE



2 0 4 8m
SCALE 1:200

File Path: C:\Users\afalway\OneDrive\Documents\Development\Aurecon\Drawings\2101_0000_SKT_001.DWG
 Plot Date: 2018/02/28 17:02:00



CLIENT
ONE TASMAN DEVELOPMENT PARTNERSHIP LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	31/08/2021	ISSUE FOR INFORMATION	K.DONLAN
B	7/09/2021	ISSUE FOR INFORMATION	K.DONLAN
C	25/01/2023	ISSUE FOR INFORMATION	J.MARTINS

SCALE	SIZE
1:200	A1
DRAWN	I.HOLMES
DESIGNED	F.MCRAE
REVIEWED	S.NOVIS

PRELIMINARY	APPROVED
NOT FOR CONSTRUCTION	J.MARTINS
DATE	25/01/2023

PROJECT	TITLE
ONE TASMAN PUKEAHU PARK	PROPOSED THREE WATERS PLAN
DRAWING No.	PROJECT No.
512101	512101
AREA	TYPE
0000	SKT
DISC	NUMBER
CC	0001
REV	REV
	C

Appendix B – Wellington Water Advice

From: Nicole Heron <Nicole.Heron@wcc.govt.nz>
Sent: Friday, 27 August 2021 11:01 am
To: Finlay McRae
Subject: FW: WW Pre-app Advice - SR 484881- 1 Tasman Street - 21 May 2021
Attachments: [1 Tasman Pre-app Plans dated 30th April 2021.pdf](#)

Hi Finley,

The SR number for this pre-app is 484881.

Thanks,
Nicole

From: Land Development <Land.Development@wellingtonwater.co.nz>
Sent: 21 May 2021 11:12
To: Nicole Heron <Nicole.Heron@wcc.govt.nz>
Subject: WW Pre-app Advice - SR 484881- 1 Tasman Street - 21 May 2021

Good morning Nicole , please see comments below . Once again my sincere apologies on timing.

General

- The information provided below is not static and hence can change, hence it is advised that depending on the timing of the development the modelling information provided below be confirmed.
- All old laterals will be required to be capped at the main.
- There is a 150mm earthenware wastewater drain that runs within the boundary of the property – if the applicant is looking to demolish the section of building that is currently built over the drain , the applicant will be required to realign this drain outside of the building footprint.
- If the applicant retains the existing building over the drain, the drain will need to be CCTVed and conditioned ascertained, if in poor condition consideration should be given to abandoning the section and creating new around the building and outside of the building footprint.
- Building near drains will be required to take into consideration section 4.4.14 of the Regional standards for water services (May 2019) - <https://www.wellingtonwater.co.nz/assets/Uploads/Regional-Standard-for-Water-Services-May-2019.pdf>



Water Supply

- The model shows that minimum pressure at the point of supply on the public main is expected to be about 60-65m, which meets the level of service criteria for pressure. The model also indicates that available fire flow capacity from the existing hydrant(s) is expected to be compliant with the NZ Fire code for residential areas (FW2). However, considering the fact the proposed development is a multi-story building, It would need to be thoroughly assessed by a fire engineer and most probably would need to be sprinklered. It is recommended that a hydrant flow test is carried out to identify what the actual fire flow availability is in the field.
- This modelling assessment only represents the existing network based on WWL hydraulic model developed in 2019. The analysis takes no account of developments that have occurred since then, currently underway, or future developments. Non-hydraulic parameters like pipe age, conditions and likelihood of their failure have not been assessed. Please also note the above are just the result of WWL hydraulic model which could be impacted by day-to-day operational changes within the network and is recommended to be verified in the field through pressure logging and hydrant flow tests.

Wastewater



- The property is connected in two different places to the local network:
 1. In Buckle St between manholes WW42267 and WW4226,
 2. In the property at, or downstream of, lamphole cleaning eye WW04888
- One of the connections to the local network for the site is downstream of manhole WW42267 that discharges into the trunk network at manhole WW16992. This local network has at least 10 litres/sec of spare design capacity during a 1-year LTS design event for further development of this property
- The second connection to the local network for the site is at, or downstream of, lamphole cleaning eye WW04888 that discharges into the trunk network at manhole WW16992. This local network has at least 10 litres/sec of spare design capacity during a 1-year LTS design event for further development of this property.
- The trunk network downstream of manhole WW16992 ultimately flows to the Moa Point WWTP and contains sections that are already over capacity during a 1-year LTS design event
- Based on the above **wastewater mitigation is not required**

- This assessment is based on the results from WWL hydraulic models. It does not take into account the impact on the spare design capacity of other developments that have occurred since then, are currently underway, or possible future developments. Non-hydraulic parameters like pipe age, conditions and likelihood of their failure have not been assessed. Flow monitoring may be required to verify these results. This development may impact on the spare design capacity available for possible future developments along the downstream network.

Stormwater

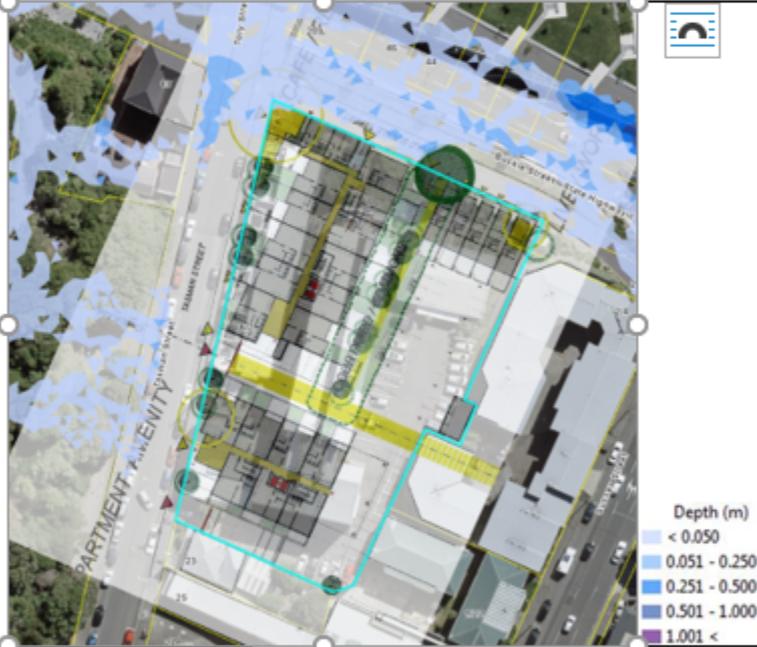
- The levels quoted are in terms of Wellington City Datum 1953.
- The site is almost 100% impermeable, SW neutrality will not be required however the applicant should look at creating as much green area as possible within the development.

DISCLAIMER

Hazard Classification and Flood Depth data is derived from Wellington Water models. Mapped flooding information may not be survey-accurate, and is bound by the model assumptions and limitations. Care should be taken that information is verified as part of any flood risk analysis, concept or detail design

FLOODING RESULTS

Software	InfoWorks ICM
Model	Southern CBD
Model Status	Validated
Flood Scenario	100 year ARI + Climate Change (assuming 2.1 C temperature increase)
Sea Water Level	2.1 m aMSL

**FLOOD IMPACT ON THE PROPERTY**

Maximum Flood Depth	<50mm
Maximum Water Level	N/A
Minimum Water Level	N/A
Overland Flow	N/A

RECOMMENDATIONS

Minimum Floor Level (including 200 mm Freeboard)	Minimum floor level should be set based on the building code.
Overland Flow	N/A

Thanks

Marlene

From: Nicole Heron <Nicole.Heron@wcc.govt.nz>

Sent: Wednesday, 19 May 2021 11:31 am

To: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: RE: WW Acknowledgement - SR 484881- 1 Tasman Street - 19 May 2021

Thanks Marlene.

From: Land Development <Land.Development@wellingtonwater.co.nz>
Sent: 19 May 2021 11:30
To: Nicole Heron <Nicole.Heron@wcc.govt.nz>
Subject: WW Acknowledgement - SR 484881- 1 Tasman Street - 19 May 2021

Hi Nicole – I must apologise for this one – I thought I had sent an email to the modellers for info only to find the email I drafted this morning still not sent.

I will try and get this as soon as possible to you.

Once again my apologies.

Thanks

Marlene

From: Nicole Heron <Nicole.Heron@wcc.govt.nz>
Sent: Wednesday, 5 May 2021 11:38 am
To: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: SR 484881- 1 Tasman Street

Good morning,

Can I please get some preliminary advice on servicing for this development? In terms of #s of units, there will be an increase from 42 to 180 units.

Thanks,

Nicole Heron

Consent Planner | City Consenting & Compliance | Wellington City Council
M 021 536 929 E nicole.heron@wcc.govt.nz | W Wellington.govt.nz |

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Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Finlay McRae

From: Zeean Brydon <zeean.brydon@e2environmental.com>
Sent: Wednesday, 21 September 2022 11:43 AM
To: Finlay McRae
Cc: Jack Martins; Katrina Donlan
Subject: 1 Tasman St - Site Servicing
Attachments: 1 Tasman St Servicing Opts.pdf

Hi Finlay
Good to talk just now.

The conditions will allow you to extend a public main into the site – this can therefore be sorted at DD stage.

As discussed:

- The ownership model was confirmed verbally yesterday by Willis Bond. (Fee Simple Block B and C, Body Corporate for A & D, Body Corporate for E).
- The plans I have are dated August 21 and predate our discussions regarding servicing, I have therefore sat down and put forward a solution based on the layout and proposed ownership.
- I have attached sketch servicing options used to guide the consent conditions – a combination of 1 and 2 would also be possible.
- In addition there are consent conditions regarding stormwater treatment – I understand RGs are proposed.

My draft assessment and conditions are with WWL for review (today), they will then be incorporated within the WCC Planners assessment and DRAFT condition set and issued to Willis Bond for review / agreement.

Willis Bond should forward the condition to you for review / comment.

I am expecting the conditions to raise some comments around the ownership model.

Sincerely

Zeean Brydon | Associate Engineer
On Behalf of the Wellington Water Land Development Team



m [022 639 2212](tel:0226392212)
e2Environmental Ltd
[181 High](#) St, Blenheim
PO Box 380, Blenheim 7201
www.e2Environmental.com

From: Finlay McRae <Finlay.McRae@aurecongroup.com>
Sent: Wednesday, 21 September 2022 10:33 AM
To: Zeean Brydon <zeean.brydon@e2environmental.com>
Cc: Jack Martins <Jack.Martins@aurecongroup.com>; Katrina Donlan <Katrina.Donlan@aurecongroup.com>
Subject: RE: Tasman - Rider Main reticulation

Hi Zeean,

Let me know when you are free to discuss this.

I think we can provide for the public rider main through the site to blocks A, D and E to a WWL compliant/adoptable standard.

With B block, the ownership model has always been somewhat vague, but with emerging clarity on this I think we can make the change which you have noted to resolve all the issues.

Thanks,

Finlay McRae
Civil Engineer, Aurecon
M +64 210 8675488

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From: Zeean Brydon <zeean.brydon@e2environmental.com>
Sent: Wednesday, 21 September 2022 9:48 AM
To: Nick Owen <nick@willisbond.co.nz>
Cc: Monique Zorn <Monique.Zorn@wcc.govt.nz>; Jack Martins <Jack.Martins@aurecongroup.com>; Finlay McRae <Finlay.McRae@aurecongroup.com>
Subject: RE: Tasman - Rider Main reticulation

Hi Nick

The layout and ownership model proposed means that the current proposal is not acceptable.

The proposed Fee Simple units have to have separate and individual connections to the public main.

In terms of Blocks A, D and E even with a unit title each block would require its own connection to a public main.

The conditions don't stipulate which public main the system needs to connect to which allow you flexibility to either connect to the ones in the road or bring one into the site (similar to the current arrangement but with reduced extent of public).

In terms of agreeing a public main within the site I would need details off the proposed planting before agreeing to an extension of the public main within a planter box – or alternatively could condition that this area is grass berm only.

Sincerely

Zeean Brydon | Associate Engineer
On Behalf of the Wellington Water Land Development Team



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[181 High St](#), Blenheim
PO Box 380, Blenheim 7201
www.e2Environmental.com

From: Nick Owen <nick@willisbond.co.nz>
Sent: Wednesday, 21 September 2022 9:07 AM

To: Zeean Brydon <zeean.brydon@e2environmental.com>
Cc: Monique Zorn <Monique.Zorn@wcc.govt.nz>; Jack Martins <Jack.Martins@aurecongroup.com>; Finlay McRae <finlay.mcrae@aurecongroup.com>
Subject: Re: Tasman - Rider Main reticulation

Hi Zeean,

Are the details provided insufficient to satisfy the reticulation as currently documented?

The proposal below (ie. individual connection for all buildings) describes a different strategy, which will need to be unpicked again once the basement configuration has been finalised (ie. removed). The purpose of providing the detail yesterday was to retain the existing reticulation which would be acceptable in any instance?

Thanks,

Nick Owen
022 048 7916
willisbond.co.nz
Wellington: Level 2 | 5 Cable Street | PO Box 24137 | Wellington 6142

From: Zeean Brydon <zeean.brydon@e2environmental.com>
Date: Wednesday, 21 September 2022 at 8:03 AM
To: Nick Owen <nick@willisbond.co.nz>
Cc: Monique Zorn <Monique.Zorn@wcc.govt.nz>
Subject: RE: Tasman - Rider Main reticulation

Thanks Nick

Provided you only want grass or maybe flowers / few limited shallow root plants then we could possibly accept a public main within a planter box – typically plants and pipes don't mix.

I have worked through the assessment and proposed conditions and drafted a set which I believe will work based on:

- Each residential dwelling in Block B and C having a separate and individual connection to a public water main, or alternatively a 32 mm ID connection for 2 dwellings splitting to individual tobies at the property boundary.
- The café having its own metered connection from the public water main

Blocks B and C will need to connect to the public main in Old Buckle St.

- Blocks A, D and E having their own separate and individual connections to a public water main.
- Blocks A and E having individual fire supplies from a public main.
- Separate shut of valves for each unit / dwelling within Blocks A, D and E
- Extension of a public main within the central access between A, D and E to service A, D and E if the details can be agreed with WWL.

If the details for the extension cannot be agreed then A, D and E will need to connect to the public main in One Tasman St.

Sincerely

Zeean Brydon | Associate Engineer
On Behalf of the Wellington Water Land Development Team



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From: Nick Owen <nick@willisbond.co.nz>
Sent: Tuesday, 20 September 2022 8:45 PM
To: zeean.brydon@e2environmental.com
Cc: Monique Zorn <Monique.Zorn@wcc.govt.nz>
Subject: Tasman - Rider Main reticulation

Good evening Zeean,

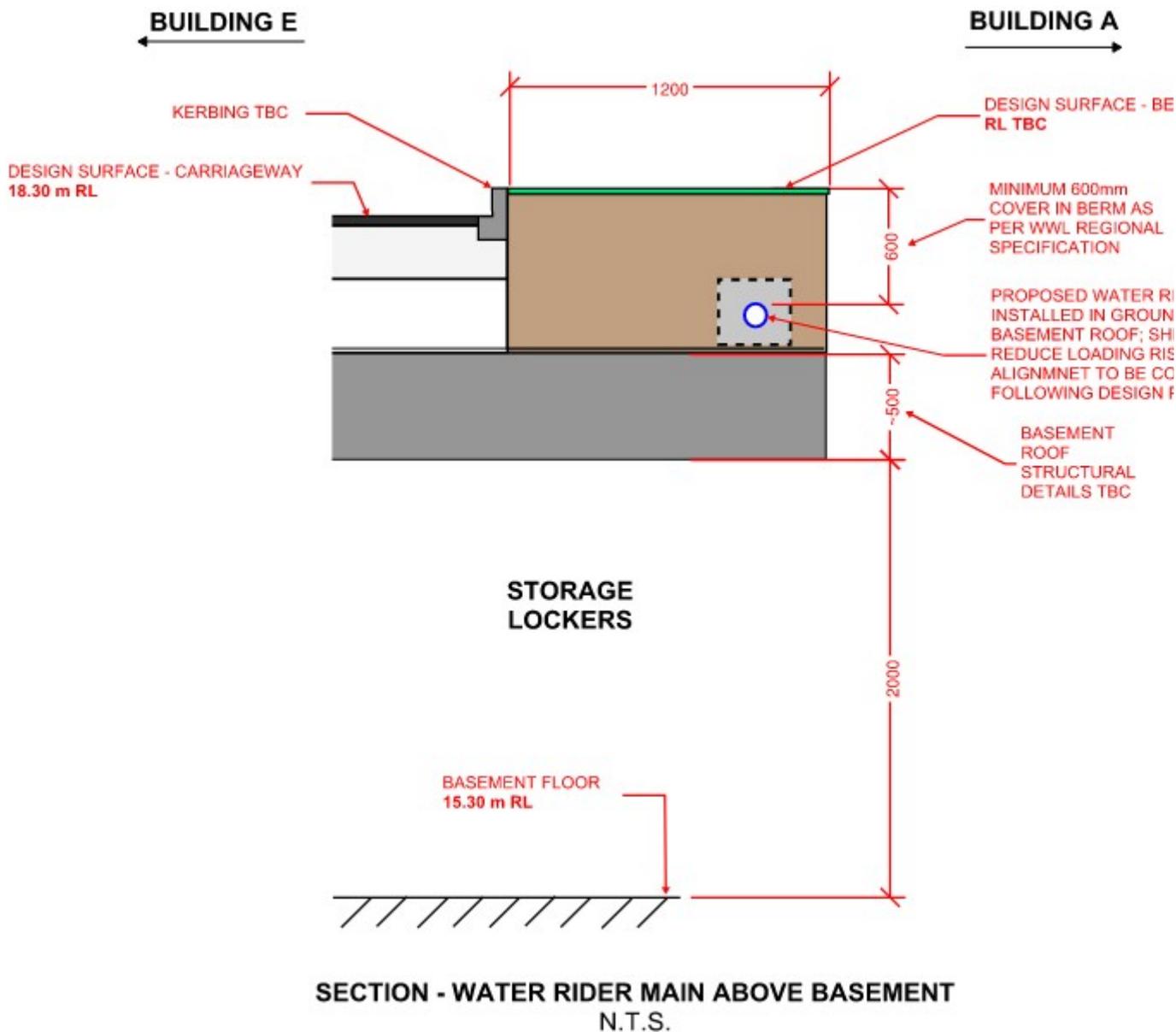
Please see below technical advice from Aurecon. I trust this should suffice based on our discussion yesterday and multiple discussions with Aurecon and Athfield Architects since.
Can you please let me know if you require any additional information in regard to this matter?

Thanks.

Hi Nick,

I have discussed the water reticulation in the driveway with the team to cover off a few points. It should be noted that the water supply has to be public to the point of supply (typically at the toby), which limits what can be done with regard to cover and protection.

The Wellington Water Regional Specification does not allow compromise on the 600mm cover to services in a berm, or 750mm in the carriageway. Given the surface levels (indicative – not detailed at RC stage), it is difficult to demonstrate that this can be achieved in the carriageway, so I have shifted the water in the below section to sit within the berm. This is a minor alignment adjustment, which will achieve compliance so long as the surface level in the berm is sufficiently high. Note that the loading profile is completely different for this planter area compared to the carriageway, so the risk of long-term damage to a pipe in this area would be low.



With this section, the dimensions demonstrate a feasible design solution that is compliant with the Wellington Water Standard/Specification.

Let me know if you need anything else or would like to discuss.

Thanks,

Finlay McRae
Civil Engineer, Aurecon
M +64 210 8675488

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DISCLAIMER

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WILLIS BOND



Ma tini ma mano ka rapa te whai

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Appendix C – Hydrant Testing Report

28 June 2021

Katrina Donlan
Associate, Land Infrastructure
Aurecon
Spark Central, Level 8, 42-52 Willis Street,
Wellington New Zealand 6011
PO Box 1591, Wellington 6140
aurecongroup.com

Tasman Street Water Main Pressure + Flow Testing

Dear Katrina

You requested pressure and flow testing to help support your client Willis Bond's redevelopment of their Tasman Street site.

I used traffic management to minimize the health and safety issues and mitigate the hazards involved, particularly during the flow testing. This work has been successfully completed without any incidents.

I installed the pressure logger in the footpath/cycleway in Buckle Street close by. This newer hydrant is connected to the water main in Tasman Street and it was much safer to work on than my other options. Pressure data was collected over a 7-day period at 30-second intervals from 16 to 22 June 2021 inclusive. The pressure test measurement unit that has been used is Meters Head 10.215 Meters = 100 KPA.

I did the flow test using the first hydrant in the road in Tasman Street (outside the east side of 13 Buckle Street). The flow testing was done between 9.50 and 9.58 am on 19 June. You were looking for a flow rate of 60 + Litres per Second. Unfortunately, I could not do a maximum flow rate test. There were cars parked where I had to direct the water, even though we put no parking cones out on Friday evening. I had to restrict the flow rate for health and safety reasons. We had a single lane one way stop/go working in this narrow space and high water flow and pressure. I could not direct the water at the parked cars. It would have stripped the paint off them.

I could only test safely at a maximum of about 38.5 litres per second. There was a good steady average flow of 38 LPS. I only opened the hydrant up a few turns. There was a lot more capacity left in the 150mm pipe. This is borne out by the very small change in pressure during the flow test when you review the data.

There was only a 1-2% drop in pressure during the flow-testing period. This confirms to me that this larger pipe had a lot more capacity, which unfortunately I could not test. I have highlighted the flow-testing period in the pressure spreadsheet provided with this report to make it easy to see it.

This should give you everything you need. Please let me know if you have any questions.

Yours faithfully

Chris Parkinson
Manager Leak Detection
ADR Wellington 04916 6211, 021 305 637

Document prepared by

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to life*

