Northpoint Planning

hello@northpointplanning.com.au
(07) 4440 5282
613 Flinders St. / PO Box 4
Townsville Q 4810
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Our Reference: NP24.131
TCC Reference: MCU25/0035
RB.MM

15 January 2026

Assessment Manager
Townsville City Council
PO Box 1268
TOWNSVILLE QLD 4810

Via email: *lachlan.pether@townsville.qld.gov.au*

Attention: Planning and Development – Lachlan Pether

Dear Lachlan,

Response to Information Request
Development Application for Material Change of Use – Health Care Services (Medical Centre)
369 Mount Low Parkway, Bushland Beach and formally identified as Lot 2 on RP744351

Northpoint Planning act on behalf of the applicant, with respect to the abovementioned development application, and refer to the Information Request issued by Townsville City Council on 09 July 2025 (refer **Attachment 1**). The information included in this correspondence is provided as the Applicant's full response to the Information Request.

Response to Information Request

The Information Request provided for four request items. In response to these items, please refer to Table 1 below.

Table 1 – Response to Information Request

Request Item 1 – Noise Impact Assessment
This item requires the applicant to provide a site-specific noise impact assessment. The noise assessment is to be prepared by a suitably qualified person, and must, but not be limited to, include the following: (a) identification of nearby sensitive receptors; (b) identification of noise generating components from the proposed use (i.e. car starts, car door open/closes, deliveries, waste collection); (c) details of proposed days and hours of operation; (d) details of service vehicle activity and refuse collection regime; and (e) details of any noise mitigation measures that have been outlined by a suitably qualified person that will be implemented onsite to reduce noise impacts on sensitive noise receptors.

Response

In response to this item, it is considered a Noise Impact Assessment is not required for the proposed development given:

- the low impact nature and scale of the proposed development being for a single-storey medical centre, with a gross floor area of 460m², accommodating up to 4 medical practitioners;
- the proposed building is appropriately setback from adjoining residential properties, thereby reducing the potential for off-site noise impacts; and
- landscape buffers are provided along the site boundaries, with a minimum width of 1.02m, further mitigating any potential noise impacts.

Notwithstanding the above, any residual noise impacts can be appropriately managed through reasonable and relevant conditions of approval, including the requirement for acoustic fencing and landscaping as necessary.

Request Item 2 – Pedestrian Connectivity

This request item requires the applicant to provide amended plans detailing improved pedestrian and cyclist connectivity between the proposed development and the existing pedestrian footpath on Mount Low Parkway. Pedestrian and cyclist pathways are to be separated from any areas traversable by motor vehicles.

Response

In response to this item, amended plans have been provided (refer **Attachment 2**) demonstrating improved pedestrian and cyclist connectivity between the proposed development and the existing pedestrian footpath along Mount Low Parkway.

Specifically, a new pathway is provided connecting the proposed building to the existing footpath network along the Mount Low Parkway road frontage.

The proposed bike rack has been relocated to the western side of the building and is accessible via the proposed pathway, ensuring separation from on-site vehicle movements and avoiding potential conflicts.

In accordance with Council's request, the proposed pathway is suitably separated from all areas traversable by motor vehicles.

Request Item 3 – Traffic Impact Assessment

This request item requires the applicant to provide a Traffic Impact Assessment (TIA) certified by an appropriately qualified RPEQ.

The TIA must:

- Address trip generation rate, access and sight line distance, conflict of access arrangement with existing on street parking and council bus zone bay and potential impact on the nearby roundabout and access improvement recommendations, as required.
- Demonstrate safe forward entry and exit for commercial vehicles with adequate sight distances, avoiding reverse movements.
- Confirm sufficient queuing capacity at the roundabout access to on-site parking, in line with the RTA's Guide to Traffic Generating Developments.
- Demonstrate consideration for situations where both PWD parking spaces are occupied, and an emergency ambulance is present at the site.

Response

In response to this item and further to the discussions had with Council, a Traffic Assessment has been prepared by Lekker Urban (refer **Attachment 3**).

The Traffic Assessment confirms that the proposed medical centre will generate low traffic volumes, being fewer than 20 in peak hour trips, and that the surrounding road network will continue to operate at a similar level of service to existing traffic conditions, with no adverse traffic impacts anticipated.

To ensure appropriate access arrangements and to improve road safety outcomes, the development plans have been amended to remove 1 on-street parking space, currently located to the property frontage. Further, it's proposed that the existing bus stop currently impeding on the site's frontage be relocated to the north of the roundabout.

Safe forward ingress and egress for all vehicles, including service and commercial vehicles, has been demonstrated through swept path analysis included within the Traffic Assessment. Waste collection by vehicles up to and including a 9.8m refuse vehicle can be accommodated, with collection proposed to occur outside normal operational periods to maintain forward vehicle movements.

A dedicated on-site ambulance bay is provided to the northern side of the car park and does not rely on or conflict with people with disabilities (PWD) parking spaces. The plans have been amended to remove one surplus PWD space, resulting in compliance with the relevant Australian Standards (AS2890).

The development provides a total of 18 on-site car parking spaces, which exceeds the minimum requirements of the planning scheme.

Request Item 4 – Engineering Statement/s and Report/s

This request item requires the applicant to provide the following:

- Statement on the stormwater management regime and how compliance will be achieved.
- Provision of anticipated water and sewer demands.

Response

In response to this item, a Stormwater Management Plan (SWMP) has been prepared by Lekker Urban (refer **Attachment 4**).

Stormwater management measures include:

- New internal stormwater network to manage runoff from new roof areas and utilisation of existing open channel drainage system.
- Landscaping for detention and infiltration.
- 5000L rainwater tank to return post development flow rates to pre development conditions.

The SWMP confirms that the proposed development can be suitably serviced by Council's reticulated sewer and water network. The SWMP confirms minimal increase to the water and sewer demands that currently service the subject site and does not impact on Council's reticulated network.

Proceeding

We trust the attached information is sufficient for Council to continue its assessment of the application and look forward to the receipt of Council's draft conditions. We welcome the opportunity to discuss the application with Council further, should any additional clarification or information be required.

Please do not hesitate to contact the undersigned should you have any queries in relation to this application.

Yours faithfully,

Mary McCarthy

SENIOR PLANNER
Northpoint Planning

Attachment 1 – TCC Information Request
Attachment 2 – Amended Plans
Attachment 3 – Traffic Impact Assessment
Attachment 4 – Stormwater Management Plan

Attachment 1

Date >> 09 July 2025

PO BOX 1268, Townsville
Queensland 4810

13 48 10

enquiries@townsville.qld.gov.au
townsville.qld.gov.au

ABN: 44 741 992 072

Hepturn Pty Ltd
C/- Northpoint Planning
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Email >> hello@northpointplanning.com.au

Dear Sir/Madam

Information Request

Planning Act 2016

As per our telephone conversation on 9 July 2025 please be advised that, upon review of the below mentioned development application, further information is required to undertake a comprehensive assessment. In accordance with section 12 of Development Assessment Rules under the *Planning Act 2016* the following information is requested.

Application Details

Application no:	MCU25/0035
Assessment no:	11075017
Proposal:	Health Care Services
Street address:	369 Mount Low Parkway BUSHLAND BEACH QLD 4818
Real property description:	Lot 2 RP 744351
Applicant's reference:	NP24.131

The information requested is set out below >>

Request Item 1 – Noise Impact Assessment

The applicant is requested to provide a site-specific noise impact assessment. The noise assessment is to be prepared by a suitably qualified person, and must, but not be limited to, include the following:

a) identification of nearby sensitive receptors;
b) identification of noise generating components from the proposed use (i.e. car starts, car door open/closes, deliveries, waste collection);
c) details of proposed days and hours of operation;
d) details of service vehicle activity and refuse collection regime; and
e) details of any noise mitigation measures that have been outlined by a suitably qualified person that will be implemented onsite to reduce noise impacts on sensitive noise receptors.

Reason

To ensure the development and operational usage does not cause an environmental nuisance to nearby sensitive receptors in accordance with the Purpose of the Low

density residential zone code and section 440 of the *Environmental Protection Act 1994* and to control background creep of the *Environmental Protection (Noise) Policy 2009*.

Request Item 2 – Pedestrian Connectivity

The applicant is requested to provide amended plans detailing improved pedestrian and cyclist connectivity between the proposed development and the existing pedestrian footpath on Mount Low Parkway. Pedestrian and cyclist pathways are to be separated from any areas traversable by motor vehicles.

Reason

To demonstrate compliance with Part 9.3.5 Transport impact, access and parking code and Part 9.3.6 Works code of the Townsville City Plan.

Request Item 3 – Traffic Impact Assessment

The applicant is requested to provide a Traffic Impact Assessment (TIA) certified by an appropriately qualified RPEQ.

The TIA must:

- Address trip generation rate, access and sight line distance, conflict of access arrangement with existing on street parking and council bus zone bay and potential impact on the nearby roundabout and access improvement recommendations, as required.
- Demonstrate safe forward entry and exit for commercial vehicles with adequate sight distances, avoiding reverse movements.
- Confirm sufficient queuing capacity at the roundabout access to on-site parking, in line with the RTA's Guide to Traffic Generating Developments.
- Demonstrate consideration for situations where both PWD parking spaces are occupied, and an emergency ambulance is present at the site.

Reason

To demonstrate compliance with Part 9.3.5 Transport impact, access and parking code, and Part 9.3.6 Works code of the Townsville City Plan.

Request Item 4 – Engineering Statement/s and Report/s

The applicant is requested to provide the following:

- Statement on the stormwater management regime and how compliance will be achieved.
- Provision of anticipated water and sewer demands.

Reason

To demonstrate compliance with Part 9.3.2 Healthy waters code and Part 9.3.6 Works code of the Townsville City Plan.

Advice

The applicant is advised that the abovementioned statement/s and/or report/s are to be prepared by a suitably qualified professional.

End of Information Request >>

Under the provisions of the Development Assessment Rules under the *Planning Act 2016*, you have three options available in response to this Information Request. You may give the assessment manager (in this instance Council):

(a) all of the information requested; **or**
(b) part of the information requested; **or**

(c) a notice that none of the information will be provided.

For any response given in accordance with items (b) and (c) above, you may also advise Council that it must proceed with its assessment of the development application.

Please be aware that under the Development Assessment Rules under the *Planning Act 2016*, the applicant is to respond to any Information Request within **3 months** of the request. If you do not respond to the Information Request within this time period, or, within a further period agreed between the applicant and Council, it will be taken that you have decided not to provide a response. In the event of no response being received, Council will continue with the assessment of the application without the information requested.

Council prefers that all of the information requested be submitted as one package. If any additional matters arise as a result of the information submitted, or, as a result of public notification (where applicable), you will be advised accordingly.

Should any referral agency make an information request, you are reminded of your obligation to provide council with a copy of the information response provided to that referral agency.

You may wish to follow the progress of this application using PD Online on Council's website www.townsville.qld.gov.au

If you have any further queries in relation to the above, please do not hesitate to contact Lachlan Pether on telephone 07 4417 5847, or email developmentassessment@townsville.qld.gov.au.

Yours faithfully

For Assessment Manager
Planning and Development

Attachment 2

PROPOSED COMMERCIAL BUILDING

.

369 MT. LOW PARKWAY, BUSHLAND BEACH

SHEET LIST

Sheet No.	Sheet Name	Project Issue Date	Poject Revision	Current Revision	Revision Date	Current Revision Description
01	COVER PAGE	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
02	SITE PLAN	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
04	FLOOR PLAN	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
05	ELEVATIONS	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
06	PERSPECTIVES	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS

PRELIMINARY
NOT FOR CONSTRUCTION
PLANS ARE SUBJECT TO CHANGE TO COMPLY WITH RELEVANT COVENANT & BUILDING CERTIFICATION APPROVALS

GENERAL:

1. IF IN DOUBT, JUST ASK.
2. USE FIGURED DIMENSIONS, DO NOT SCALE FROM DRAWINGS.
3. CONFIRM ALL RELEVANT DIMENSIONS, LEVELS AND DETAILS ON SITE PRIOR TO COMMENCEMENT OF ALL WORK. CONFIRM SETBACKS TO ALL ALIGNMENTS.
4. THESE ARCHITECTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERING AND OTHER CONSULTANT"S DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFERRED TO THE BUILDING DESIGNERFOR DISCUSSION BEFORE PROCEEDING WITH THE WORK.
5. DESIGN AND CONSTRUCTION TO COMPLY WITH CURRENT STANDARD BUILDING BY-LAWS, BUILDING ACT, BUILDING AMENDMENT ACT, BUILDING AND OTHER LEGISLATION AMENDMENT ACT, QUUENSLAND DDEVELOPMENT CODE, BUILDING CONDE OF AUSTRALIA, CURRENT AUSTRALIAN STANDARDS, STATUTORY REQUIREMENTS, ORDINACES, LOCAL GOVERNMENT REQUIREMENTS, RELEVANT BUILDING AUTHORITIES AND ALL CONTRACT DOCUMENTATION.
6. CARRY OUT ALL WORK IN A SAFE MANNER IN ACCORDANCE WITH APPLICABLE STATUTORY REGULATIONS, BY-LAWS OR RULES. COMPLY WITH RELEVANT STATE OCCUPATIONAL HEALTH AND SAFETY ACTS INCLUDING ASSOCIATED REGULATIONS AND CODES OF PRACTISE. CONTRACTOR IS RESPONSIBLE FOR OCCUPATIONAL HEALTH AND SAFETY OF SITE PERSONNEL AND GENERAL PUBLIC IN ACCRODANCE WITH LEGISLATIVE REQUIREMENTS, INDUSTRIAL AGREEMENTS AND ACCEPTED INDUSTRY PRACTISE.
7. TIMBER CONSTRUCTION TO COMPLY WITH AS1720. DOMESTIC TIMBER CONSTRUCTION IN NON-CYCLONIC LOCATIONS SHALL BE IN ACCORDANCE WITH AS1684.
8. ALL BRICKWORK AND BLOCKWORK SHALL BE IN ACCORDANCE WITH AS3700.
9. ALL PROPRIETARY PRODUCTS AND SYSTEMS TO BE INSTALLED TO MANUFACTURER'S SPECIFICATION AND INSTRUCTIONS.
10. GARAGE DOORS TO COMPLY WITH THE ABCB HOUSING PROVISION PART 2.2. - GARAGE DOORS AND OTHER LARGE ACCESS DOORS IN OPENINGS NOT MORE THAN 3M IN HEIGHT IN EXTERNAL WALLS OF BUILDINGS DETERMINED AS BEING LOCATED IN WIND REGION C OR D IN ACCORDANCE WITH FIGURE 2.2.3 : AS/NZS 4505.
11. WHEN BUILDING IN A CORROSIVE ENVIROMENT, CORROSION PROTECTION IS TO COMPLY WITH SECTION 6.3.9 OF THE ABCB HOUSING PROVIONS
12. THESE DRAWINGS ARE THE COPYRIGHT OF THE DESIGN HOUSE NQ AND MAY NOT BE USED, RETAINED OR REPRODUCED WITHOUT WRITTEN AUTHORITY.
13. THESE DRAWINGS ARE FOR THE PURPOSE OF GAINING A BUILDING APPROVAL ONLY.

CLASS 1 & 2 BUILDINGS OR ASSESSABLE AND SELF-ASSESSABLE RENOVATIONS

LIGHTING - ENERGY EFFICIENT LIGHTING - WHICH IS A GLOBE WITH A MINIMUM OUTPUT OF 30 LUMENS/WATT INSTALLED TO A MINIMUM OF 80% OF THE TOTAL FIXED INTERNAL LIGHTING. EXCLUDING LAMPS RADIATING HEAT IN BATHROOMS.

NEW AND REPLACEMENT AIR-CONDITIONING TO HAVE ENERGY EFFICIENCY RATING TO MINIMUM 2.9

IN AREAS SERVICED BY A WATER SERVICE PROVIDER:-

**** SHOWER ROSES IN A AREA WITH A RETICULATED WATER SERVICE MUST BE MIN 3 STAR WELS RATED.***
**** ALL TOILET CISTERNS MUST HAVE A DUAL FLUSH FUNCTION AND HAVE A MIN. OF 4 STAR WELS RATING WHICH MUST BE COMPATABLE WITH THE SIZE OF THE TOILET BOWL.***
**** ALL TAPS SERVING LAUNDRY TUBS, KITCHEN SINKS AND BATHROOM BASINS MUST HAVE A 3 STARWELS RATING.***

(WELS - 'WATER EFFICIENCY LABELLING AND STANDARDS')
(QDC - QUEENSLAND DEVEOPEMENT CODE)
(MP - MANDATORY PART)
SUSTAINABLE BUILDING REQUIREMENTS @ 1 MARCH 2009 - CLASS 1 BUILDINGS

NEW WORK - HOT WATER SYSTEMS MUST BE SUPPLIED BY A:-
- SOLAR HOT WATER SYSTEM, OR HEAT PUMP HOT WATER SYSTEM OR GAS HOT WATER SYSTEM.

TANKS IF REQUIRED BY LOCAL AUTHORITY:
- 5000LTR FOR DETACHED CLASS 1, 3000LTR FOR OTHER THAN CLASS 1 DETACHED AS PER QDC MP 4.2 WATER SAVINGS TARGETS:-
- TO RECIEVE A MINIMUM ROOF AREA AT LEAST 100SQM OR ONE HALF OF THE TOTAL ROOF AREA WHICHEVER IS THE LESSER.
- BE CONNECTED TO TOILET CISTERNS, WASHING MACHINE COLD WATER TAPS (OTHER THAN GREY WATER CONNS.) AND EXTERNAL USE TAPS, REFER QDC MP 4.2 FOR VARIATIONS. PLUMBER TO REFER TO QDC MP 4.2 FOR COMPLETE TANK REQUIREMENTS

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NOTE:
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3. COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW & ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
4. THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT

Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : COVER PAGE
Date: 27.02.25 Drawn: N.H
Scale: 1 : 1 Designed: N.H

Job No: 2025-055-C
Drawing No: DD 01
Rev. 2

WIND CATEGORY C2

PRELIMINARY

NOT FOR CONSTRUCTION

PLANS ARE SUBJECT TO CHANGE TO COMPLY WITH RELEVANT COVENANT & BUILDING CERTIFICATION APPROVALS

1 SITE PLAN
1 : 250

DEVELOPMENT DETAILS

TOTAL SITE AREA: 1436m² APPROX.

CAR PARKS:

PARKING PROVIDED (ON SITE)	: 18
PARKING (ON STREET)	: -
TOTAL	: 18

AMBULANCE BAY:

PARKING PROVIDED (ON SITE)	: 1

DRIVEWAYS & CARPARKS:

NEW	: 601.4m²

SITE COVER:

GROUND FLOOR	486.6m²	: 33.9%

LANDSCAPING:

GROUND FLOOR	241.5m²	: 22.0%

REAL PROPERTY DESCRIPTION

LOT 2 ON RP 744351
AREA OF LAND: 1436m²
LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

The Design House NQ

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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : SITE PLAN
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

Job No: 2025-055-C
Drawing No: DD 02 Rev. 2

WIND CATEGORY C2

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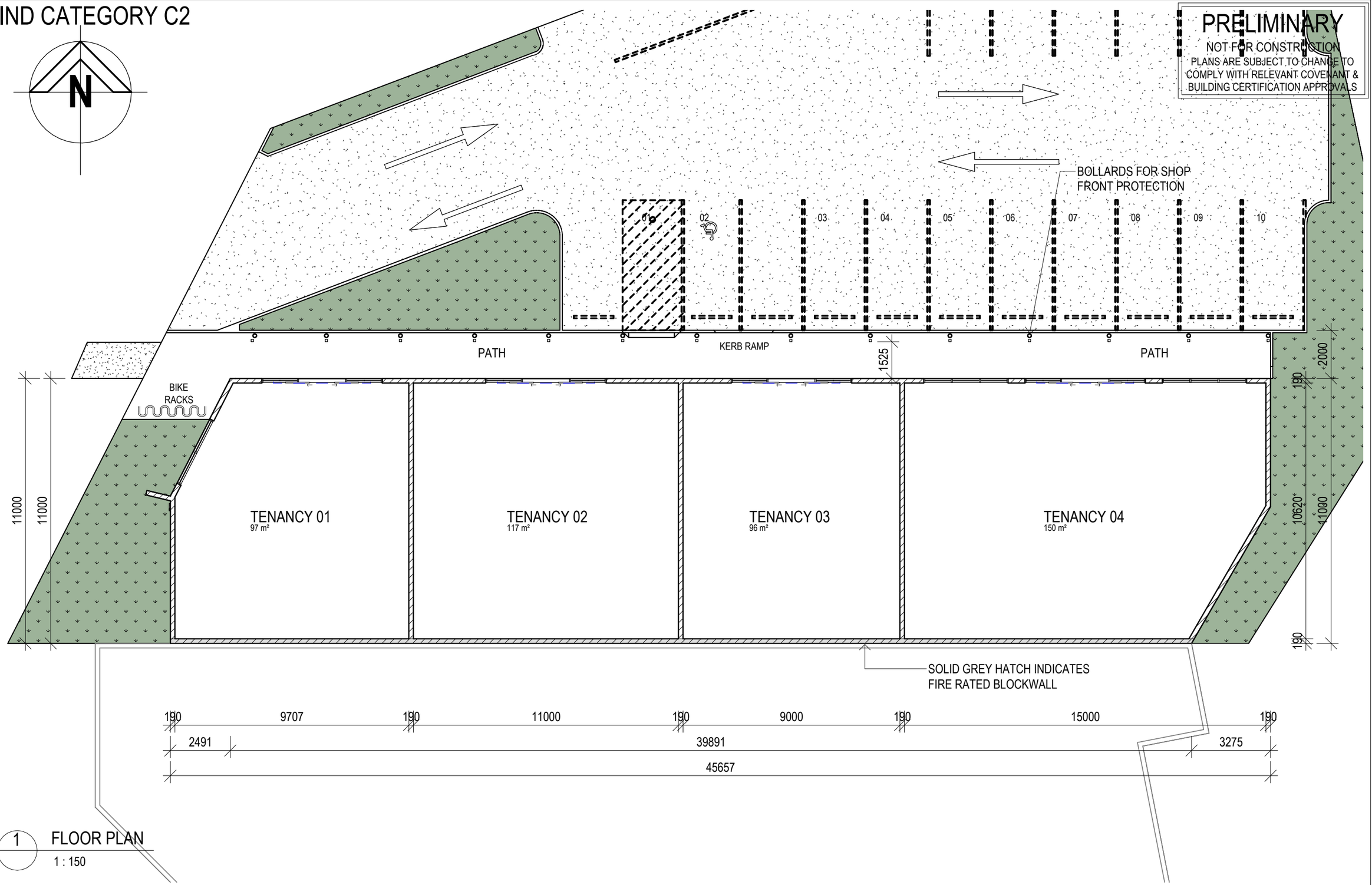

1 FLOOR PLAN
1 : 150

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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : FLOOR PLAN
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

Job No: 2025-055-C
Drawing No: DD 04
Rev. 2

PRELIMINARY
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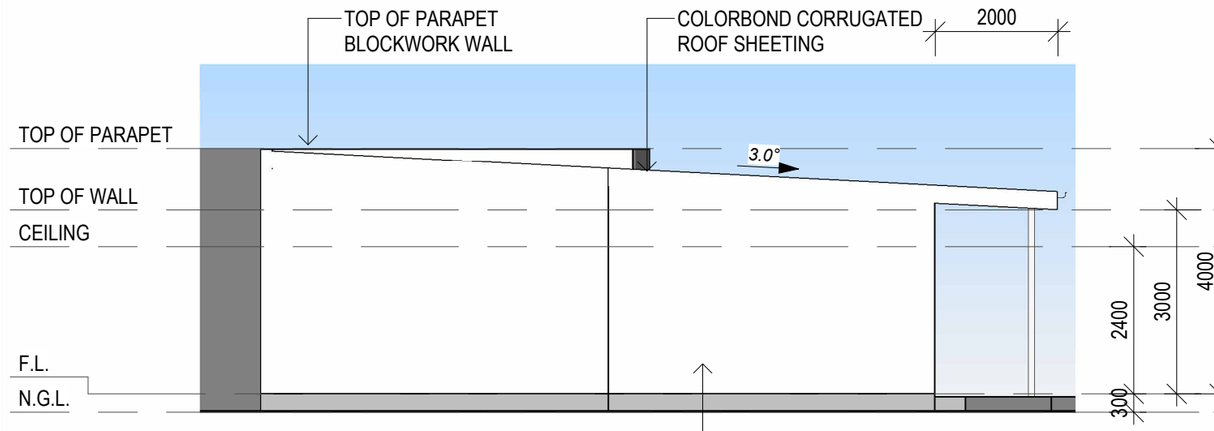

01 EASTERN ELEVATION
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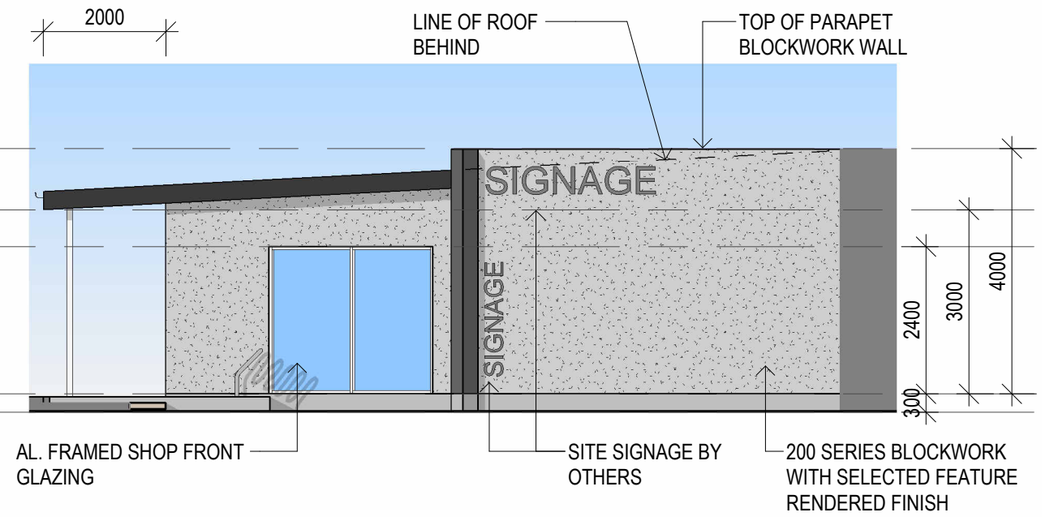

02 WESTERN ELEVATION
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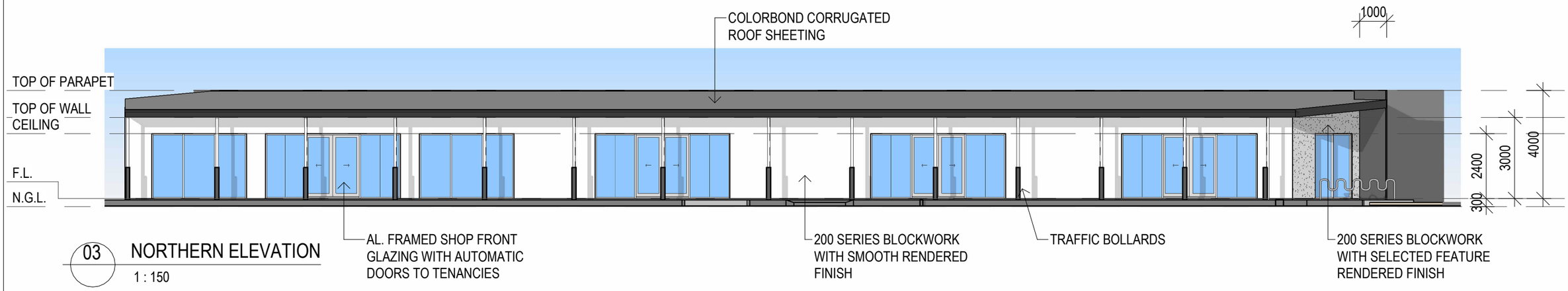

03 NORTHERN ELEVATION
1 : 150

The Design House NQ

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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : ELEVATIONS
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

Job No: 2025-055-C
Drawing No: DD 05
Rev. 2

PRELIMINARY

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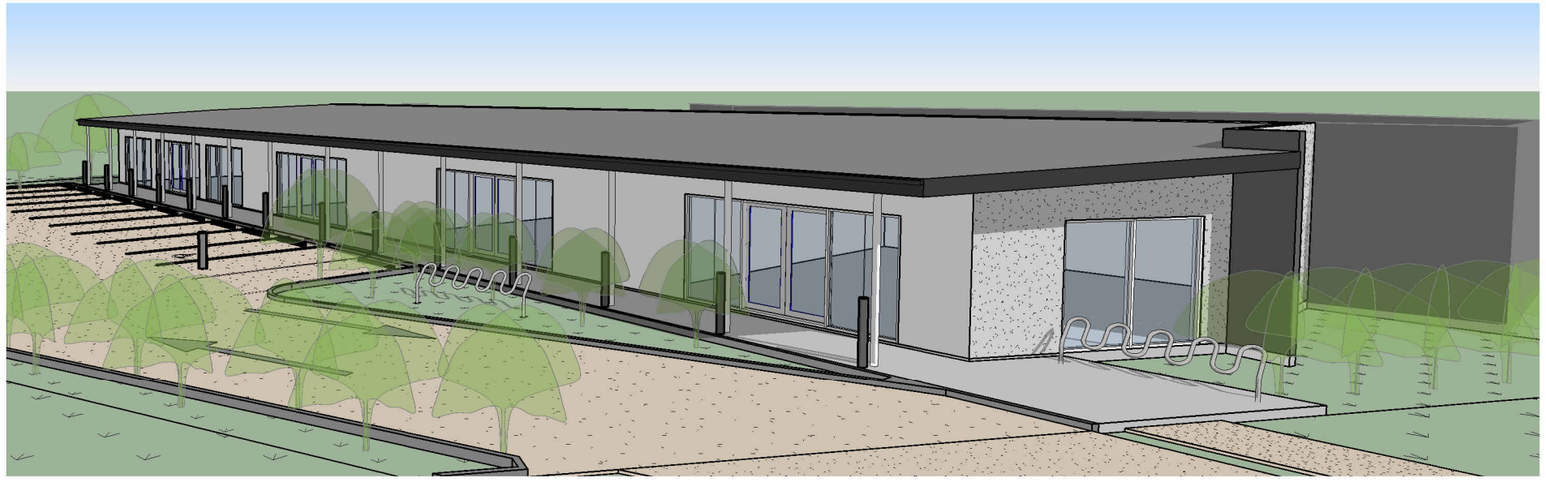
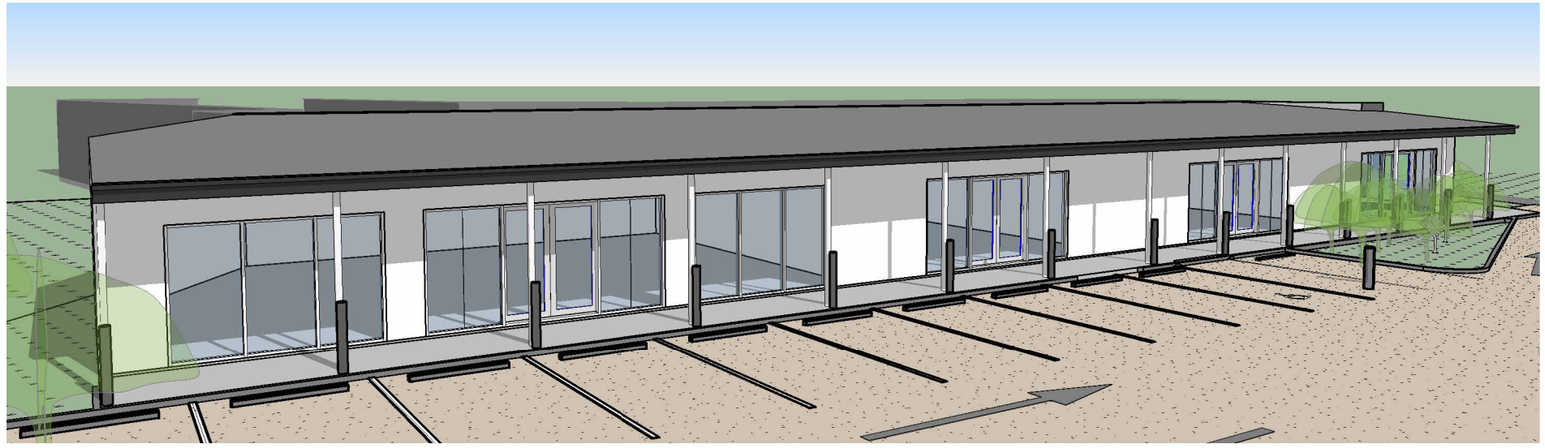


1 PERSPECTIVE VIEW 01



2 PERSPECTIVE VIEW 02

3 PERSPECTIVE VIEW 03

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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : PERSPECTIVES
Date: 27.02.25 Drawn: N.H
Scale: Designed: N.H

Job No: 2025-055-C
Drawing No: DD 06
Rev. 2

Attachment 3

Traffic Assessment (TA)

On behalf of Hepturn Pty Ltd C/- Northpoint Planning

369 Mount Low Parkway Bushland Beach QLD 4817

Lot 2 on RP744351

Lekker Urban.

5 January 2026 (Revision B)

Lekker Urban
60 – 70 Magazine Street
Stratford QLD 4870

PO Box 8
Stratford QLD 4870
www.lekkerurban.com.au
contact@lekkerurban.com.au

This report has been prepared by the office of Lekker Urban.

Cairns Office: 60-70 Magazine Street, Stratford QLD 4870
Postal: PO Box 8, Stratford QLD 4870
Email: contact@lekkerurban.com.au
Telephone: 07 4253 7023

Revision

Report Title:	Traffic Assessment for Material Change of Use, Health Care Services
Street Address	369 Mount Low Parkway, Bushland Beach QLD 4818
RP Description	Lot 2 RP744351
Prepared For:	Hepturn Pty Ltd C/- Northpoint Planning
Date:	5 January 2026
Revision No.	B
Report Status:	Issued for Approval (DA)
Prepared By:	
Name	Joshua Affleck
Qualifications	Master of Engineering Practice/Bachelor of Engineering
Company	Lekker Urban
Phone No.	0422 648 262
Certified By:	
Name	Joshua Affleck
Qualifications	Master of Engineering Practice/Bachelor of Engineering
Company	Lekker Urban
Phone No.	0422 648 262
Industry Accreditation	RPEQ No. 24039
Signature	

Document Use and Context

This report has been prepared by Lekker Urban in the context of the purposes as specified within the report. Lekker Urban do not warrant its use for any other purpose other than those outlined. Lekker Urban have prepared this report for the exclusive use of the Client in accordance with the respective Terms of Agreement of our engagement by the Client.

Lekker Urban accepts no liability or responsibility whatsoever for, or in respect of, any use, or reliance upon, this report by any third party. The report shall be read and used in its entirety to establish and understand the context of the assumptions and findings within. Lekker Urban does not accept any responsibility for use of any part of this report in any other context. Lekker Urban have established this report based on various sources of information provided by the client and project team. Lekker Urban accepts no responsibility as the accuracy of the supplied information and unless noted otherwise in the report, Lekker Urban has not attempted to verify the completeness of such information. It is assumed the information supplied is current and accurate at the time of issue. If the supplied information is found to be incomplete, false, outdated or inaccurate, then the conclusions and recommendations of the report may change.

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1 Introduction:

1.1 Background

Lekker Urban have been commissioned by Northpoint Planning on behalf of Hepturn Pty Ltd to prepare this Traffic Assessment (TA) for the proposed Material Change of Use - Health Care Services (Medical Centre) situated at 369 Mount Low Parkway, Bushland Beach QLD 4818. The site's Real Property Description is Lot 2 RP 744351.

This report has been prepared referencing the following available information:

- Townsville City Plan including Part 9.3.5 Transport impact, access and parking code and Part 9.3.6 Works code;
- The Guide to Traffic Impact Assessment, Transport and Main Roads, December 2018;
- Austroads Guide to Road Design Part 4A (AGRD4A): Unsignalised and Signalised Intersections;
- The RTA Guide to Traffic Generating Development;
- RMS Technical Direction TD13-04a - Technical Direction updating Traffic Generation Figures.
- National Construction Code (NCC) 2019 Building Code of Australia - Volume One; and
- Australian Standard AS/NZS 2890 Parking Facilities (Off-Street Park).

This TIA aims to support the Development Application being lodged with Townsville City Council.

1.2 Proposed Development

The proposed development involves the construction of a medical centre comprising a building footprint of approximately 486.6m2. The proposed development involves a single storey structure to the southern side of the lot comprising of four (4) tenancies with landscaping, providing a positive contribution to the amenity of the streetscape and surrounding locality.

Vehicular access will be facilitated to the site via new crossover and driveway to the Mount Low Parkway frontage. The proposal development contains sixteen (16) off-street car parks plus a dedicated emergency services vehicle bay and is consistent with the illustrations provided in Appendix A.

2 Existing Conditions:

2.1 Property Detail

As can be seen in the aerial photo below (Figure 1), the subject site is situated at 369 Mount Low Parkway, Bushland Beach with a total area of 1,436m2. The site's Real Property Description is Lot 2 RP 744351 and is within the Townsville City Council (TCC) region. The site is currently a vacant residential allotment and has historically remained undeveloped since the conception of the localities parent subdivision circa 1990. The site has direct access to Mount Low Parkway to the west and is bounded by residential dwellings to the north and eastern boundaries and existing commercial properties to the south.

Figure 1 – Site Location Plan (Source: QLD Globe)

2.2 Land Use and Zoning

The subject site is located within a Low-Density Residential Zone as per Townsville City Council interactive mapping. The site is impacted by the following planning overlays:

- Acid sulphate soils Figure 9.2 - 0-5 metres AHD

- Airport Environs Overlay Map OM-01.2 - Wildlife hazard buffer zones and public safety areas - Distance from airport runway - 13km
- Airport Environs Overlay Map OM-01.1 - Operational airspace – Airspace more than 90m above ground level
- Development Constraints Overlay Map OM-06.1 to OM-06.2 - Floodhazard - Low hazard area
- Development Constraints Overlay Map OM-06.1 to OM-06.2 - Floodhazard - Medium hazard area

2.3 Topography

A contour and feature survey has not been undertaken. Utilising LiDAR it has been identified that the site slightly slopes towards the road frontage, with the site generally mapped with contours ranging between 4.5m AHD and 4.0m AHD.

2.4 Road Network

Mount Low Parkway is a Council-controlled road. The road is currently posted at 60km/hr speed limit.

Mount Low Parkway comprises of a single carriageway with two (2) lanes operating in a north-south direction with sealed shoulders. The northern end of Mount Low Parking is serviced with a roundabout that provides a connection with Livistonia Close (to the west). Mount Low Parkway extends slightly beyond the roundabout to the north, although this functions as a local access road.

The roundabout is located directly at the frontage of the site and comprises of a single carriageway with two (2) lanes. An informal left-turn lane is located on the south-bound section of the roundabout, which provides access to Manuka Court, a local access road located south of the site.

The roundabout, which services the subject site, is currently outside of both the existing and future Council Road Hierarchy Maps, following further investigations with TCC. For the simplicity of assessment, this report has adopted the road hierarchy of a Major Collector Road, which is the hierarchy of the section of Mount Low Parkway at the intersection of Manuka Court, in a south-bound direction.

Kerb is present on the eastern side of the road at the frontage of the site. The roundabout itself has no kerb and drains to a central grassed open channel drain. Access to the subject site can only be gained from the roundabout in a south-bound direction only (Figure 2).

Figure 2 – Local road network segments (Source: TownsvilleMAPS)

2.5 Existing Vehicular Access

The site is currently undeveloped with no formal site access provided. Informal site access is provided only due to the layback kerb and channel allowing vehicles to traverse the verge. The current on-street parking spaces and bus stop does not support any formal point of access to the subject site and current impedes safe site access.

2.6 Pedestrian Access

Mount Low Parkway has a formed concrete footpath (1.5m wide) that services the full frontage of the site. The footpath extends to the south, to the intersection of Manuka Court and continues along Mount Low Parkway.

The path extends to the north, up to the council carpark (Figure 3). Pedestrian infrastructure is good with safe pedestrian links and servicing the adjacent public transport link.

Figure 3 – Summary of key pedestrian access points (Source: TownsvilleMAPS)

2.7 Carparking

The subject site currently contains two (2) formal on-street kerbside parking spaces along the frontage of the site with three (3) additional on-street kerbside parking spaces located to the south of the site, beyond the access crossover of the adjoining southern neighbour, approximately 20 metres from the site.

Further to the north of the site (approximately 60 metres), there is a council-owned carpark providing connectivity to the site via the concrete footpath. This carpark contains thirty-six (36) off-street car park spaces to the southern carpark and additional parking spaces to the northern carpark adjacent to the foreshore.

The adjacent development to the south of the site appears to be adequately serviced via their on-site parking spaces.

2.8 Road Safety Issues

The existing and the proposed access driveway has been assessed in accordance with Australian Standard AS/NZS 2890.1 Parking Facilities (Off-Street Parking). Section 3.2.4 provides sight distance parameters for both traffic and pedestrians interaction with traffic entering/exiting the site.

The existing access does not comply with the criteria outlined within Section 3.2.4 notably:

- Entering sight distance – inadequate intersection sight distance along the frontage road available to drivers leaving the access driveway due to the location of the bus stop and council-owned on-street parking spaces.
- Sight distance to pedestrians – Clear sight lines are provided at the property line to ensure adequate visibility between vehicles leaving the access driveway and pedestrians on the frontage road path as per AS2890.1:2004 Figure 3.3.
- Inadequate clearance to both the bus stop and council-owned on-street parking spaces.
- The existing bus stop (ID: 890562) requires relocation. When a bus is stationary at the stop picking up or dropping off passengers, the clear sight distance is obstructed temporarily. A vehicle cannot access or depart the site with the bus stop in its current location.

The current arrangement of bus stop (ID: 890562) obstructs access to the subject site. In conjunction with the existing on-street parking pays there is currently formal access point to the subject site. Upon review of the existing bus stop and the general traffic arrangement there is a public safety risk for a bus to access the current stop. Upon approach, there is no safe passage to cross from the traffic lane into the bus bay without crossing the existing chevron treatment and exit from the Bushland Beach carpark (Northern leg of Mount Low Parkway).

The relocation of the bus stop would facilitate the formalisation of the road shoulder at the frontage of the site to a single lane and the formalisation of the AUL(S) left turn lane into Manuka Court, based on AustRoads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections. With the formalisation of a three (3) metre wide carriageway from

the roundabout to Manuka Court, Mount Low Parkway can facilitate a six (6) metre wide shoulder within the existing sealed area at the frontage of the site.

The proposed relocation of the bus stop to be undertaken by TransLink is shown in Figure 4 below, with the shelter to be relocated to the northern verge of Mount Low Parkway, located between Livistonia Close and the northern leg of Mount Low Parkway at the frontage of the council-owned parking. A new pathway shall be provided to connect the relocated stop to the existing pedestrian network. This would ensure that the requirements under DTMR Walking Network Planning Guideline are maintained for walkable communities.

The proposed access would comply, through the inclusion of the above measures, with the criteria outlined within Section 3.2.4 notably:

- Entering sight distance – adequate intersection sight distance along the frontage road available to drivers leaving the access driveway.
- Sight distance to pedestrians – Clear sight lines are provided at the property line to ensure adequate visibility between vehicles leaving the access driveway and pedestrians on the frontage road path as per AS2890.1:2004 Figure 3.3.
- Separation from the existing on-street space can be achieved with 4.3m clearance between the new crossover and the removal of the existing adjoining on-street parking space. One (1) on-street space, closest to the proposed crossover, currently obstructs the proposed access crossover and is nominated to be removed as part of this MCU.

Figure 4 – Proposed relocation of Bus Stop ID:890562 (Source: TownsvilleMAPS)

2.9 Service Vehicles

Service delivery vehicles are not required to service the site in its current undeveloped state. Service vehicles accessing the existing site would park exclusively within the existing site (if needed) and have the ability to turn and drive out in a forward direction.

2.10 Public Transport

2.10.1 Bus Service

Translink services the area with Bus Stop ID No. 890562 (Mount Low Parkway at Manuka Court) located on the eastern side (south-bound) of Mount Low Parkway, with a Bus Stop located adjacent to the site to the north. This Bus Stop is serviced by Routes 233 operating daily Monday - Saturday.

Figure 5 – Locality of Bus Stops (Source: TownsvilleMAPS)

2.10.2 Taxi Service

There is an adequate internal manoeuvre and stopping parking space for taxis outside inside the Site for pick up and drop off services to the proposed facility.

The local Townsville area is serviced by 13cabs and also numerous rideshare services.

3 Post-Development Conditions:

3.1 Proposed Access

3.1.1 Vehicular Access

Vehicular access between the on-site sealed passenger vehicle parking area and Mount Low Parkway requires formalisation and widening to a commercial crossover standard.

In accordance with AS2890.1:2004, Tables 3.1 and 3.2 of AS2890.1:2004 which specify that, at minimum, a Category 1 type driveway is required, providing a minimum combined ingress / egress driveway width of 5.5m based on the Major Collector function of Mount Low Parkway, the Health Care Service land-use and the passenger vehicle parking provision of less than 25 spaces.

Vehicular swept path plans have been prepared to demonstrate the ability of passenger vehicles to enter and exit the site in combination, refer to the drawings in Appendix A.

The safety and efficiency of access/egress movements are also proposed to be assisted by the following:

- Provision of a relatively level grade within the first 6m inside the property boundary;
- Areas abutting the driveway on approach to the boundary clear of any obstruction to visibility in accordance with Clause 3.2.4(b) of AS2890.1:2004; and
- The consistent vertical and horizontal alignment of Mount Low Parkway in the immediate vicinity of the subject Site resulting in the extent of sight distance between the driveway and the frontage roadway exceeding the minimum requirements of Clause 3.2.4(a) of AS2890.1:2004 with respect to the applicable sign posted speed limit of Mount Low Parkway of 60km/h.

3.1.2 Pedestrian Access

The existing pedestrian infrastructure is good with safe pedestrian links and servicing the adjacent public transport link and functions in accordance with the Planning Scheme SC6.4.4 and the road hierarchy of Mount Low Parkway.

In conjunction with the bus stop relocation, additional path upgrades are required outside of the scope of the proposed works. No upgrades or alterations to the existing pedestrian pathways to the frontage of the site are proposed as part of this MCU. Minor rectification works as required for the installation of the commercial crossover to match to the exiting pathway alignment.

3.2 Internal Circulation and Manoeuvrability

3.2.1 Passenger Vehicular Circulation

Passenger vehicles, upon entry to the site, will travel in a forward direction along the internal driveway to form a single central parking aisle extending in the eastern direction into the site. The proposed parking area comprises of two (2) standard 90-degree angled parking rows, being serviced by the blind aisle. Noting all vehicles are required to enter and exist in a forward direction.

The passenger vehicle parking spaces have generally been designed to accord with the relevant requirements of AS2890.1:2004, AS2890.3:2015 and AS2890.6:2009, providing the following minimum dimensions (based on User Class 3 from Table 1.1):

Parking Space Description (Based on User Class 3)	Minimum Dimension (m)
Standard parking space width	2.6
People with disabilities vehicular parking space width (with adjoining 2.4m wide shared area)	2.4
Standard and shared vehicular parking space length	5.4
Vehicular parking aisle width adjoining parking spaces	5.8
Two-way access driveway	5.5

Table 3 – Parking space dimensions in accordance with AS2890.

Safe and efficient internal manoeuvring and parking space accessibility is anticipated to result, taking into consideration the compliance with the relevant AS2890.1:2004, AS2890.3:2015 and AS2890.6:2009 specifications.

The vehicular turning paths provided on the plans have been generated using Autoturn software and derived from B99 vehicle (5.2m Passenger Vehicle) and 9.8m BCC Refuse Collection Truck specifications provided within AS2890.1-2004.

Section B4.4 of AS2890.1-2004 states the following regarding the use of templates to assess vehicle manoeuvring:

'*Constant radius swept turning paths, based on the design vehicle's minimum turning circle are not suitable for determining the aisle width needed for manoeuvring into and out of parking spaces. Drivers can manoeuvre vehicles within smaller spaces than swept turning paths would suggest.*'

On this basis, it is important to note that whilst the turning movements provided within AS 2890.1 - 2004 can be utilised to provide a 'general indication' of the suitability or otherwise of internal parking and manoeuvring areas, vehicles can generally manoeuvre more efficiently than the paths indicate. With this aside, the turning movements demonstrate that passenger vehicles can manoeuvre throughout and enter and exit the all passenger vehicle parking spaces within the parking areas. On this basis, the proposed internal circulation arrangements are considered to be satisfactory.

3.2.2 Heavy Vehicle Circulation

The subject development will generate the need of weekly waste collection associated with the intended use of the building. Waste collection could occur in an informal manner via the on-site passenger vehicle parking area outside of operational periods of the development. While there is no provision of a formalised service bay, vehicles up to and including a 9.8m BCC Refuse Collection Truck could access the site and turnaround around within the vacant internal passenger vehicle parking area if so required.

Further vehicular turning movement assessment demonstrates that vehicles up to and including 9.8m BCC Refuse Collection Truck can access the site in a forward direction, undertake a three-point turn within the vacant passenger vehicle parking area and exit the site in a forward direction as seen in Appendix A.

The proposed development is considered to be capable of accommodating vehicles up to and including 9.8m BCC Refuse Collection Truck outside of normal operational periods of the development in a safe and efficient manner.

In addition, it is expected that minor deliveries will primarily be undertaken by vans and utilities, which will occur via the internal passenger vehicle parking spaces outside of the peak operational periods of the development.

3.3 Carparking Provisions

An assessment under the terms of the Townsville City Plan 2024/01 has been performed referencing the proposed site plan, in relation to the alterations and additions to the existing Site that are functional spaces that are to be included within the Gross Floor Area (GFA). In accordance to Townsville City Plan Schedule 6.10 and D4D6 'Accessible carparking' in NCC 2022 Building Code of Australia - Volume One, the proposed development must provide the following requirements.

Land Use	Car spaces	Service Vehicle	Accessible
Health care services	One (1) space per 20m^2 of GFA **OR** four (4) spaces per medical practitioner, whichever is greater	o Where requiring access via a road – SRV (Type A Access) + occasional access for MRV o Where requiring access via a street – SRV (Type B Access) + occasional access for MRV	One (1) space for every 50 carparking spaces or part thereof and one (1) space for ambulance vehicle pick-up and set down

Table 4 – Minimum on-site parking requirements.

Using the values outlined in the Table 4 for the subject Site, the assessment resulted in the following:

Description	Vehicle Space Required	Total Parks Required
Health care services	1 space / 20m^2 GFA	460m^2 / 20 m^2 = 23
	OR	
Health care services	4 spaces per medical practitioner	4 x 4 = 16

Table 5 – Assessment of parking spaces against the planning scheme.

In conjunction with the planning report provided by Northpoint Planning, the vehicle space rate of '*4 spaces per medical practitioner*'. In summary, the following parking requirements will need to be met for the proposed purpose:

Car spaces	Service Vehicle	Motorcycle/scooter spaces	Cycle spaces
16	Access provided	-	9

Table 6 – Summary of the Site parking requirements.

The proposed development provides for eighteen (18) on-site car parking spaces, exceeding the requirements as they pertain to the number of practitioners. The provision for a dedicated ambulance bay is provided with the proposed Development Drawings (Appendix A), and turning movements have been provided to demonstrate that a B99 Standard Vehicle can still access the spaces adjacent. It is considered the provided on-site car parking is sufficient to meet the anticipated demand generated by the proposed medical centre.

In addition, as per D4D6 'Accessible carparking' in NCC 2022 Building Code of Australia - Volume One, there is a requirement for one (1) space for every 50 carparking spaces or part thereof of which is to be an accessible carparking space. This is a requirement due to the proposed development being of Building Class 9a – clinic or day surgery not forming part of a hospital.

3.4 Traffic Generation from the Proposed Development

The operations will generally display the following operational characteristics:

- Concentrated arrival and departure times for AM and PM peak commuter times for employees and then evenly distributed times throughout the day during business hours for patients.

Due to the concentrated arrival and departure times, the traffic generation of the proposed use is, for practical purposes, identical to parking generation. Table 6 above presents that the subject development could generate a maximum parking demand of up to sixteen (16) internal spaces. It is assumed that two (2) spaces per practitioner would be utilised by staff and eight (8) spaces would be utilised by visitors to the site.

To generate an absolute worst-case scenario, for the purposes of this assessment the development has been projected to generate a maximum peak hour traffic generation of eight (8) vehicle trips to site and eight (8) vehicle trips from the site in any one given hourly period, thereby representing sixteen (16) peak hour trips. For the purposes of simplicity of assessment and once again, to generate an absolute worst-case scenario, the abovementioned hourly traffic generation has been assessed to order during weekday commuter peak periods.

With the vehicle trips at sixteen (16), it is assumed that a vehicle every 3.75 mins would be entering/exiting the site. It is assumed that the distribution of traffic exiting the site would be distributed south along Mount Low Parkway as well as locally throughout the surrounding Bushland Beach local road network.

3.4.1 Level of Service

The performance of an intersection is defined by the delay time modelled at intersection as outlined by Transport for NSW, and is categorised as per Table 6 below.

Level of Service	Delays	Classification
A	0 to 14.5	Good
B	14.5 to 28.5	Good with minimal delays and spare capacity
C	28.5 to 42.5	Satisfactory with spare capacity
D	42.5 to 55	Satisfactory but operating at capacity
E	55 to 70.5	At capacity and incidents will cause excessive delays
F	Greater than 70.5	Unsatisfactory and requires additional capacity

Table 6 – Level of Service Ratings.

Changes to the level of service of an intersection is influenced through increased delay times at intersections. This impacted by the number of vehicles passing through an intersection and the freedom of movement in the intersection.

In respect to the Townsville City Council Plan requirements under Table SC6.4.5.2 - Urban Area TIA Impact Level Assessment Criteria, the overall Impact of the development is considered Low based on the criteria in Table 7 below and the responses provided in Table 8.

Criteria	Impact		
	Low	Moderate	High
Trip Generation	New or additional trip generation in a peak hour of less than 20 trips directly accessing a street[1].	New or additional trip generation in a peak hour of 20 to 300 trips directly accessing a street. New or additional trip generation to a major collector, sub arterial, arterial, or highway[1].	New or additional trip generation in a peak hour of more than 300 trips directly accessing a road system.
Commercial Vehicles	5 or less new or additional commercial vehicles per day in a residential area. Less than 10 new or	More than 5 and up to 300 new or additional commercial vehicles per day in a residential area.	More than 300 new or additional commercial vehicles per day.

	additional commercial vehicles per day in a non- residential area.		
Car Parking	Increase or decrease of 9 or less on-site car park spaces.	Increase or decrease of 10 or more onsite car park spaces.	
Car Parking	Loss of 2 or less line marked on-street carparks or loading zones.	Loss of between 3 or more line-marked on street carparks or loading zones.	
Public Transport	Relocation of any bus zone or taxi rank	Impacts on the bus interchange or bus routes.	
Transport System	No change to existing transport network operation.	Changes to the connectivity between local streets and collector roads.	Changes to the connectivity between arterial and sub arterial roads.

Table 7 – Table SC6.4.5.2 - Urban Area TIA Impact Level Assessment Criteria

A summary of the Urban Area TIA Impact Level Assessment Criteria has been provided below.

Criteria	Impact	Justification
Trip Generation	Low	Trip generation in a peak hour is less than 20 trips accessing the street. The road hierarchy does not support a Medium impact.
Commercial Vehicles	Low	Less than 5 new commercial vehicles per day to service the Medical Centre,
Car Parking	Low/Moderate	Loss of 1 on-street carpark . Increase of more than 10 onsite car parks being 16 spaces.
Public Transport	Low	No impact on the bus route, proposed relocation of bus zone.
Transport System	Low	No changes to the existing transport network. Formalisation of existing arrangement including AUL(S) Left turn lane.

Table 8 – Responses to TCC Table SC6.4.5.2

4 Conclusion:

This Traffic Impact Assessment has reviewed the proposed Material Change of Use - Health Care Services (Medical Centre) situated at 369 Mount Low Parkway, Bushland Beach QLD. From this review, the following has been identified:

1. The site is located within an Urban area of Bushland Beach within the Townsville City Council region. This locality is well supported by public transport, pedestrian access and an established road network.

2. The existing traffic network currently operates at a satisfactory level of service during both the AM and PM peak periods.

3. Upon completion of the proposed development, the performance of Mount Low Parkway and the Mount Low Parkway/ Manuka Court intersection will be maintained similar to the existing level of service. The intersection will continue to operate effectively and there will be no adverse traffic impacts on the road network serving the site.

4. The proposed development will be serviced via a new commercial driveway off Mount Low Parkway located along the western boundary.

5. The relocation of the existing Bus Stop will increase public road safety and access to the existing residences and commercial lots along the Mount Low Parkway roundabout head.

5. A total of 16 car parking spaces are required, with 18 spaces provided as part of the proposed development based upon the car parking assessment completed, plus an allowance for emergency service vehicle.

APPENDIX A

Proposed Development Drawings

Lekker Urban.

Appendix A – Proposed Development Drawing

REVISION	AMENDMENTS	APPROVED	DATE
A	TURNING MOVEMENT - BCC REFUSE	T.S	5/01/2026

Lekker Urban.
CAIRNS: 60-70 MAGAZINE STREET STRATFORD, QLD
CONTACT@LEKKERURBAN.COM
WWW.LEKKERURBAN.COM.AU ABN 32669 311 479

Hepturn Pty Ltd C/- Northpoint Planning
PROPOSED MEDICAL CENTRE
369 MOUNT LOW PARKWAY, BUSHLAND BEACH
BCC REFUSE TURNING MOVEMENTS

DRAWING NUMBER:	SCALE:	REV:
LU23304-FIG001-01	N.T.S	A

WIND CATEGORY C2

REVISION	AMENDMENTS	APPROVED	DATE
A	TURNING MOVEMENT - B99	T.S	5/01/2026

Lekker Urban.
CAIRNS: 60-70 MAGAZINE STREET STRATFORD, QLD
CONTACT@LEKKERURBAN.COM
WWW.LEKKERURBAN.COM.AU ABN 32669 311 479

Hepturn Pty Ltd C/- Northpoint Planning
PROPOSED MEDICAL CENTRE
369 MOUNT LOW PARKWAY, BUSHLAND BEACH
B99 TURNING MOVEMENTS

DRAWING NUMBER: LU23304-FIG002-01
SCALE: N.T.S
REV: A

PROPOSED COMMERCIAL BUILDING

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369 MT. LOW PARKWAY, BUSHLAND BEACH

SHEET LIST

Sheet No.	Sheet Name	Project Issue Date	Poject Revision	Current Revision	Revision Date	Current Revision Description
01	COVER PAGE	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
02	SITE PLAN	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
04	FLOOR PLAN	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
05	ELEVATIONS	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS
06	PERSPECTIVES	27.02.25	2	3	17.12.25	PLANNING AMENDMENTS

PRELIMINARY
NOT FOR CONSTRUCTION
PLANS ARE SUBJECT TO CHANGE TO COMPLY WITH RELEVANT COVENANT & BUILDING CERTIFICATION APPROVALS

GENERAL:

1. IF IN DOUBT, JUST ASK.
2. USE FIGURED DIMENSIONS, DO NOT SCALE FROM DRAWINGS.
3. CONFIRM ALL RELEVANT DIMENSIONS, LEVELS AND DETAILS ON SITE PRIOR TO COMMENCEMENT OF ALL WORK. CONFIRM SETBACKS TO ALL ALIGNMENTS.
4. THESE ARCHITECTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERING AND OTHER CONSULTANT"S DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFERRED TO THE BUILDING DESIGNERFOR DISCUSSION BEFORE PROCEEDING WITH THE WORK.
5. DESIGN AND CONSTRUCTION TO COMPLY WITH CURRENT STANDARD BUILDING BY-LAWS, BUILDING ACT, BUILDING AMENDMENT ACT, BUILDING AND OTHER LEGISLATION AMENDMENT ACT, QUUENSLAND DDEVELOPMENT CODE, BUILDING CONDE OF AUSTRALIA, CURRENT AUSTRALIAN STANDARDS, STATUTORY REQUIREMENTS, ORDINACES, LOCAL GOVERNMENT REQUIREMENTS, RELEVANT BUILDING AUTHORITIES AND ALL CONTRACT DOCUMENTATION.
6. CARRY OUT ALL WORK IN A SAFE MANNER IN ACCORDANCE WITH APPLICABLE STATUTORY REGULATIONS, BY-LAWS OR RULES. COMPLY WITH RELEVANT STATE OCCUPATIONAL HEALTH AND SAFETY ACTS INCLUDING ASSOCIATED REGULATIONS AND CODES OF PRACTISE. CONTRACTOR IS RESPONSIBLE FOR OCCUPATIONAL HEALTH AND SAFETY OF SITE PERSONNEL AND GENERAL PUBLIC IN ACCRODANCE WITH LEGISLATIVE REQUIREMENTS, INDUSTRIAL AGREEMENTS AND ACCEPTED INDUSTRY PRACTISE.
7. TIMBER CONSTRUCTION TO COMPLY WITH AS1720. DOMESTIC TIMBER CONSTRUCTION IN NON-CYCLONIC LOCATIONS SHALL BE IN ACCORDANCE WITH AS1684.
8. ALL BRICKWORK AND BLOCKWORK SHALL BE IN ACCORDANCE WITH AS3700.
9. ALL PROPRIETARY PRODUCTS AND SYSTEMS TO BE INSTALLED TO MANUFACTURER'S SPECIFICATION AND INSTRUCTIONS.
10. GARAGE DOORS TO COMPLY WITH THE ABCB HOUSING PROVISION PART 2.2. - GARAGE DOORS AND OTHER LARGE ACCESS DOORS IN OPENINGS NOT MORE THAN 3M IN HEIGHT IN EXTERNAL WALLS OF BUILDINGS DETERMINED AS BEING LOCATED IN WIND REGION C OR D IN ACCORDANCE WITH FIGURE 2.2.3 : AS/NZS 4505.
11. WHEN BUILDING IN A CORROSIVE ENVIROMENT, CORROSION PROTECTION IS TO COMPLY WITH SECTION 6.3.9 OF THE ABCB HOUSING PROVIONS
12. THESE DRAWINGS ARE THE COPYRIGHT OF THE DESIGN HOUSE NQ AND MAY NOT BE USED, RETAINED OR REPRODUCED WITHOUT WRITTEN AUTHORITY.
13. THESE DRAWINGS ARE FOR THE PURPOSE OF GAINING A BUILDING APPROVAL ONLY.

CLASS 1 & 2 BUILDINGS OR ASSESSABLE AND SELF-ASSESSABLE RENOVATIONS

LIGHTING - ENERGY EFFICIENT LIGHTING - WHICH IS A GLOBE WITH A MINIMUM OUTPUT OF 30 LUMENS/WATT INSTALLED TO A MINIMUM OF 80% OF THE TOTAL FIXED INTERNAL LIGHTING. EXCLUDING LAMPS RADIATING HEAT IN BATHROOMS.

NEW AND REPLACEMENT AIR-CONDITIONING TO HAVE ENERGY EFFICIENCY RATING TO MINIMUM 2.9

IN AREAS SERVICED BY A WATER SERVICE PROVIDER:-

**** SHOWER ROSES IN A AREA WITH A RETICULATED WATER SERVICE MUST BE MIN 3 STAR WELS RATED.***
**** ALL TOILET CISTERNS MUST HAVE A DUAL FLUSH FUNCTION AND HAVE A MIN. OF 4 STAR WELS RATING WHICH MUST BE COMPATABLE WITH THE SIZE OF THE TOILET BOWL.***
**** ALL TAPS SERVING LAUNDRY TUBS, KITCHEN SINKS AND BATHROOM BASINS MUST HAVE A 3 STARWELS RATING.***

(WELS - 'WATER EFFICIENCY LABELLING AND STANDARDS')
(QDC - QUEENSLAND DEVEOPEMENT CODE)
(MP - MANDATORY PART)
SUSTAINABLE BUILDING REQUIREMENTS @ 1 MARCH 2009 - CLASS 1 BUILDINGS

NEW WORK - HOT WATER SYSTEMS MUST BE SUPPLIED BY A:-
- SOLAR HOT WATER SYSTEM, OR HEAT PUMP HOT WATER SYSTEM OR GAS HOT WATER SYSTEM.

TANKS IF REQUIRED BY LOCAL AUTHORITY:
- 5000LTR FOR DETACHED CLASS 1, 3000LTR FOR OTHER THAN CLASS 1 DETACHED AS PER QDC MP 4.2 WATER SAVINGS TARGETS:-
- TO RECIEVE A MINIMUM ROOF AREA AT LEAST 100SQM OR ONE HALF OF THE TOTAL ROOF AREA WHICHEVER IS THE LESSER.
- BE CONNECTED TO TOILET CISTERNS, WASHING MACHINE COLD WATER TAPS (OTHER THAN GREY WATER CONNS.) AND EXTERNAL USE TAPS, REFER QDC MP 4.2 FOR VARIATIONS. PLUMBER TO REFER TO QDC MP 4.2 FOR COMPLETE TANK REQUIREMENTS

The Design House NQ
THE DESIGN HOUSE NQ
m: 0423 623 647
a: 11 Cashell Crescent, Bushland Beach, QLD 4818
e: nathan@thedesignhousenq.com.au
w: www.thedesignhousenq.com.au

NOTE:
1. ALL LEVELS AND DIMENSIONS ARE TO BE CHECKED AND CONFIRMED PRIOR TO START OF ANY FABRICATION OR BUILDING WORK.
2. PLANS NOT TO BE SCALED, ALL FIGURED DIMENSIONS TO TAKE PRECEDENCE.
3. COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW & ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
4. THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT

Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : COVER PAGE
Date: 27.02.25 Drawn: N.H
Scale: 1 : 1 Designed: N.H

Job No: 2025-055-C
Drawing No: DD 01
Rev. 2

WIND CATEGORY C2

PRELIMINARY

NOT FOR CONSTRUCTION

PLANS ARE SUBJECT TO CHANGE TO COMPLY WITH RELEVANT COVENANT & BUILDING CERTIFICATION APPROVALS

1 SITE PLAN
1 : 250

DEVELOPMENT DETAILS

TOTAL SITE AREA: 1436m² APPROX.

CAR PARKS:

PARKING PROVIDED (ON SITE)	: 18
PARKING (ON STREET)	: -
TOTAL	: 18

AMBULANCE BAY:

PARKING PROVIDED (ON SITE)	: 1

DRIVEWAYS & CARPARKS:

NEW	: 601.4m²

SITE COVER:

GROUND FLOOR	486.6m²	: 33.9%

LANDSCAPING:

GROUND FLOOR	241.5m²	: 22.0%

REAL PROPERTY DESCRIPTION

LOT 2 ON RP 744351
AREA OF LAND: 1436m²
LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

The Design House NQ

THE DESIGN HOUSE NQ
m: 0423 623 647
a: 11 Cashell Crescent, Bushland Beach, QLD 4818
e: nathan@thedesignhousenq.com.au
w: www.thedesignhousenq.com.au

NOTE:
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2. PLANS NOT TO BE SCALED, ALL FIGURED DIMENSIONS TO TAKE PRECEDENCE.
3. COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW & ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
4. THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT

Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : SITE PLAN
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

Job No: 2025-055-C
Drawing No: DD 02 Rev. 2

WIND CATEGORY C2

PRELIMINARY
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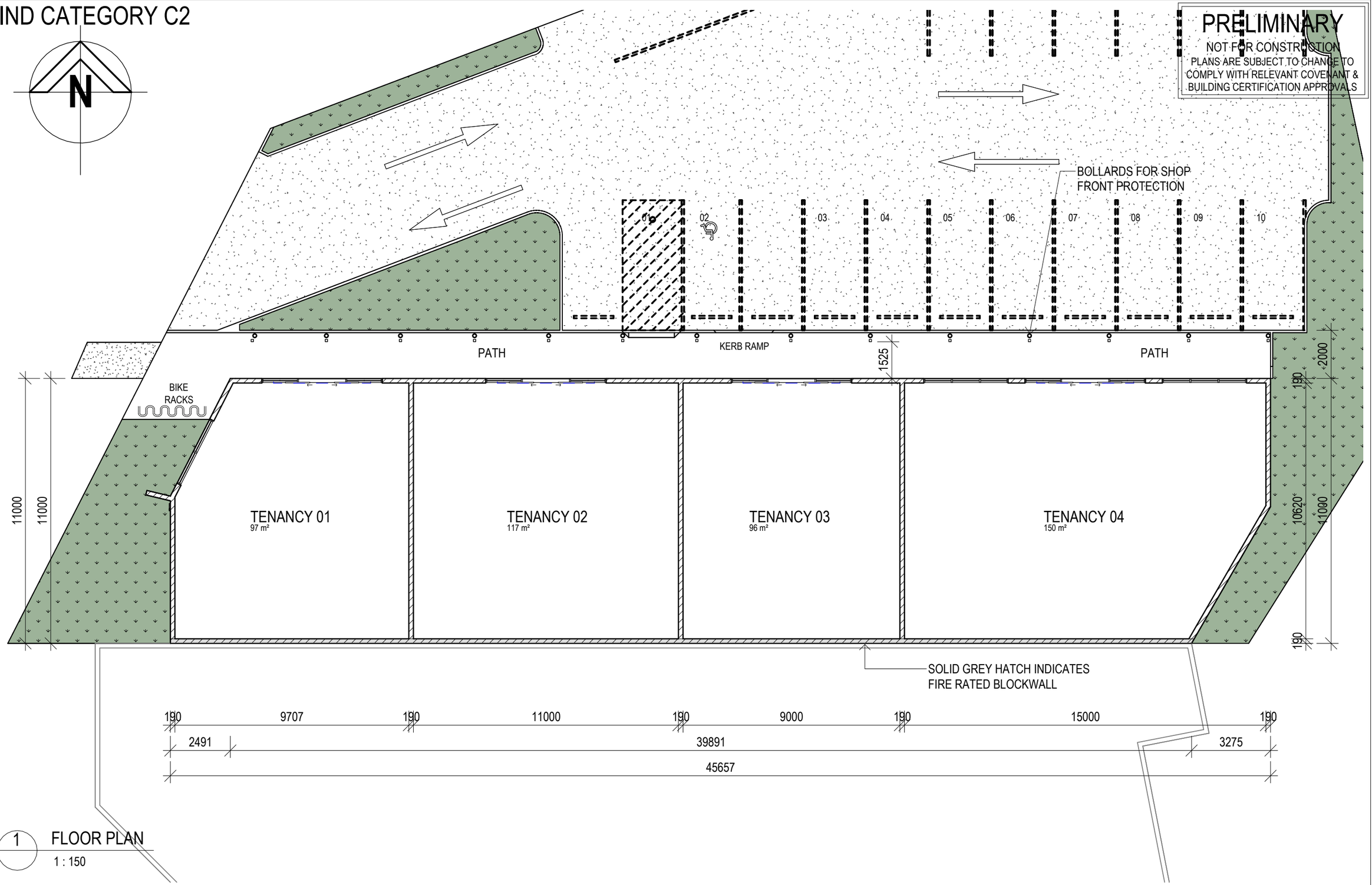

1 FLOOR PLAN
1 : 150

The Design House NQ
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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : FLOOR PLAN
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

Job No: 2025-055-C
Drawing No: DD 04
Rev. 2

PRELIMINARY
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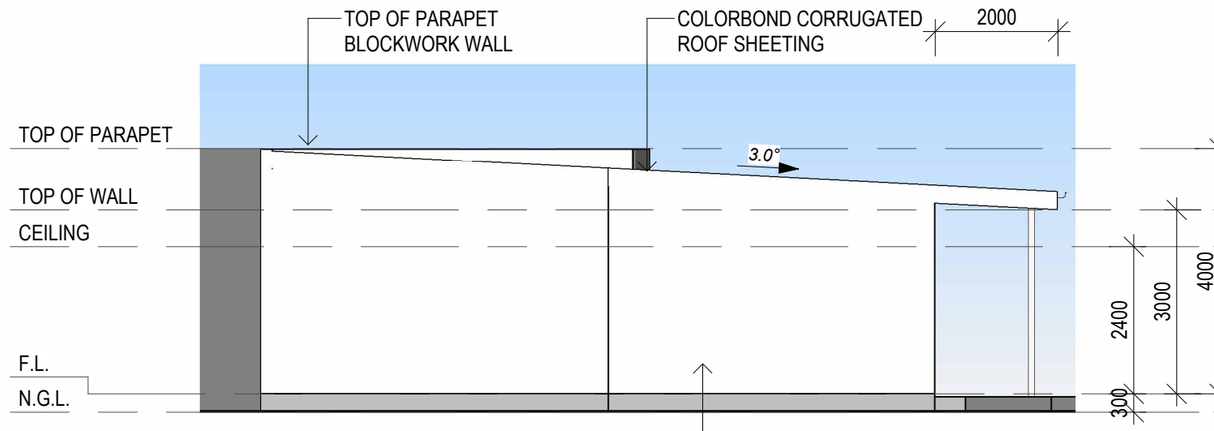

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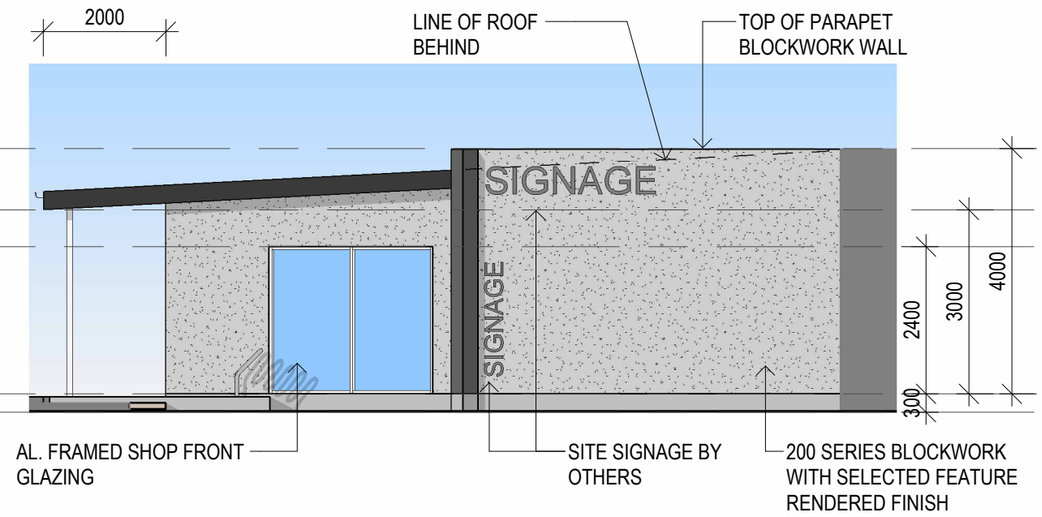

02 WESTERN ELEVATION
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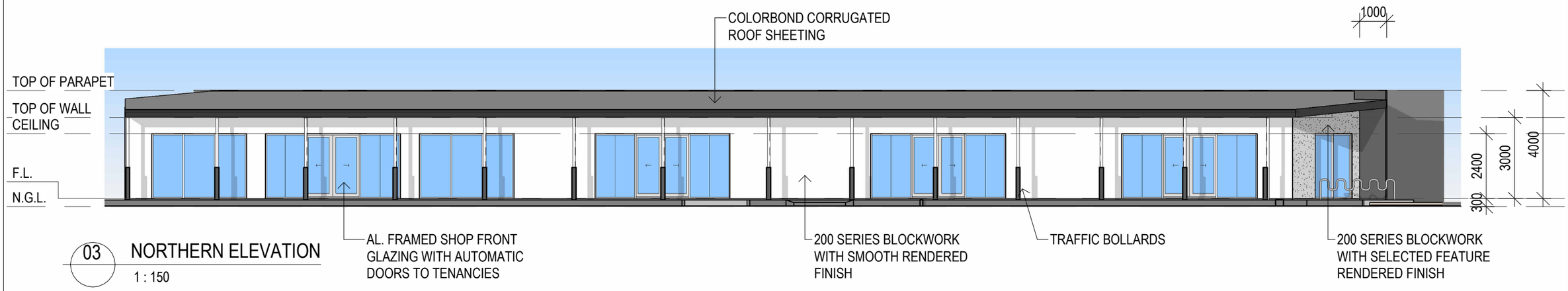

03 NORTHERN ELEVATION
1 : 150

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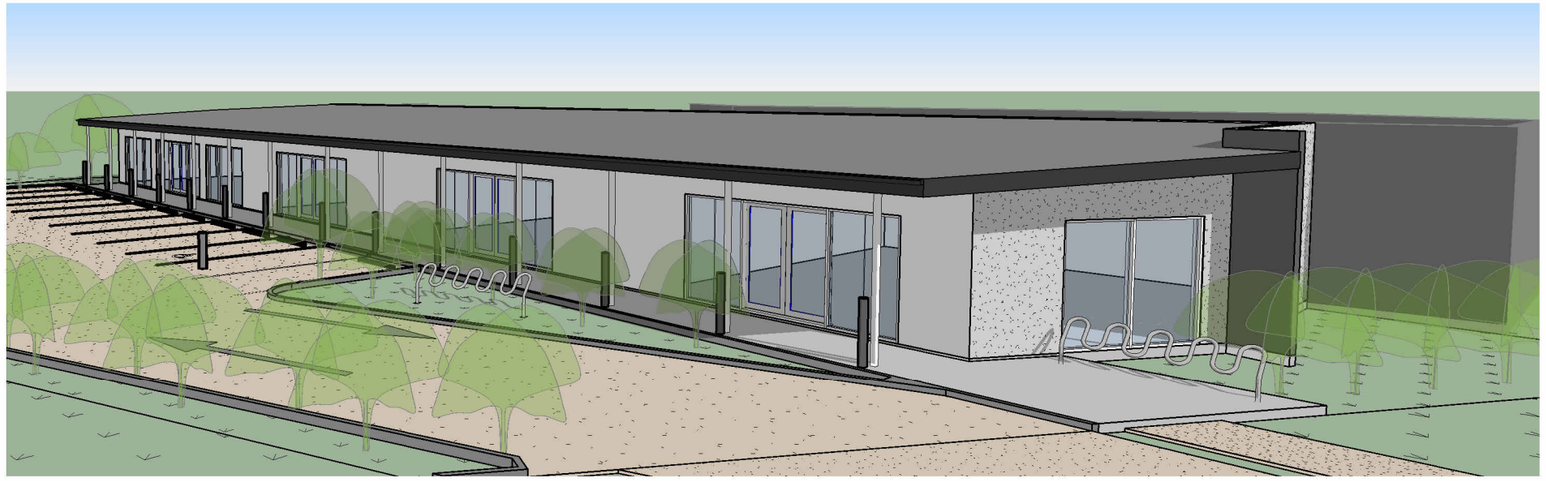
Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : ELEVATIONS
Date: 27.02.25 Drawn: N.H
Scale: As indicated Designed: N.H

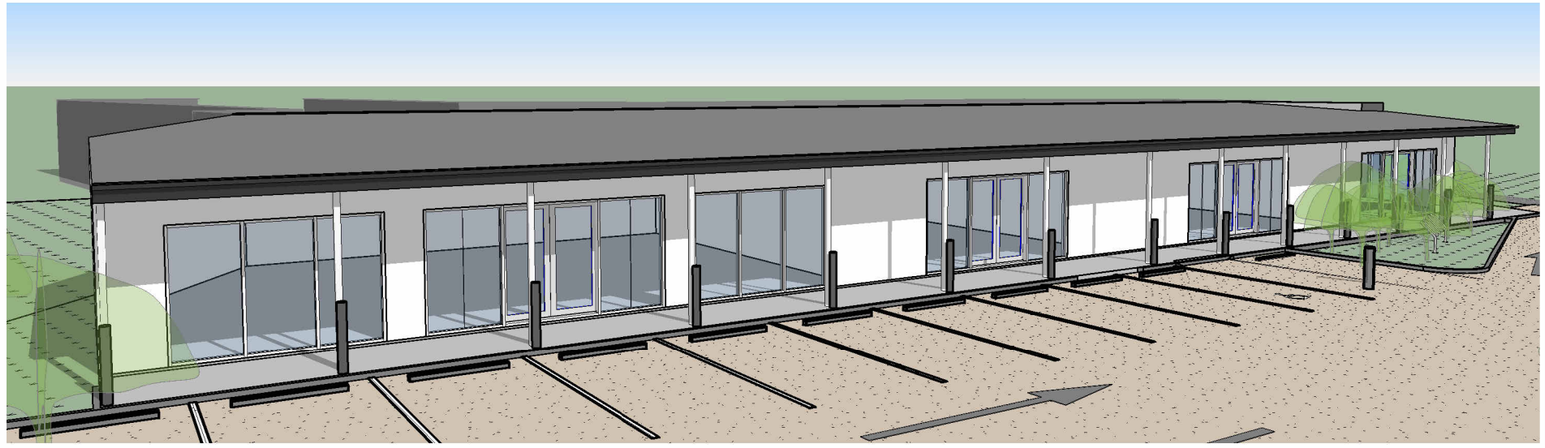
Job No: 2025-055-C
Drawing No: DD 05
Rev. 2

PRELIMINARY

NOT FOR CONSTRUCTION
PLANS ARE SUBJECT TO CHANGE TO COMPLY WITH RELEVANT COVENANT & BUILDING CERTIFICATION APPROVALS



1 PERSPECTIVE VIEW 01



2 PERSPECTIVE VIEW 02

3 PERSPECTIVE VIEW 03

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Project: PROPOSED COMMERCIAL BUILDING
Client: .
Location: 369 MT. LOW PARKWAY, BUSHLAND BEACH

Title : PERSPECTIVES
Date: 27.02.25 Drawn: N.H
Scale: Designed: N.H

Job No: 2025-055-C
Drawing No: DD 06
Rev. 2

Attachment 4

STORMWATER MANAGEMENT PLAN

On behalf of Hepturn Pty Ltd C/- Northpoint Planning

Lot 2 on RP744351

369 Mount Low Parkway, Bushland Beach QLD 4817

Lekker Urban.

8 December 2025 (Revision A)

Lekker Urban
60 – 70 Magazine Street
Stratford QLD 4870

PO Box 8
Stratford QLD 4870

This report has been prepared by the office of Lekker Urban.

Cairns Office: 60 – 70 Magazine Street, Stratford QLD 4870
Postal: PO Box 8, Stratford QLD 4870
Email: contact@lekkerurban.com.au
Telephone: 07 4253 7023

Revision

Report Title:	Stormwater Management Plan
Street Address	369 Mount Low Parkway, Bushland Beach QLD 4817
RP Description	Lot 2 on RP744351
Prepared For:	Hepturn Pty Ltd C/- Northpoint Planning
Date:	8 December 2025
Revision No.	A
Report Status:	Issued for Approval
Prepared By:	
Name	Joshua Affleck
Qualifications	Master of Engineering Practice/Bachelor of Engineering
Company	Lekker Urban
Phone No.	(07) 4253 7023
Certified By:	
Name	Joshua Affleck
Qualifications	Master of Engineering Practice/Bachelor of Engineering
Company	Lekker Urban
Phone No.	0422 648 262
Industry Accreditation	RPEQ No. 24039
Signature	

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Table of Contents

1 Introduction:

1.1 Background

Lekker Urban have been commissioned by Hepturn Pty Ltd C/- Northpoint Planning to prepare this Stormwater Report for the proposed commercial development. This Stormwater Report aims to support the proposed commercial development being lodged with Townsville City Council (TCC).

1.2 Property Detail

The details of the subject property for the proposed development are shown in Table 1 below.

Existing Property Details	
Title	Lot 2 on RP744351
Street Address	369 Mount Low Parkway Bushland Beach QLD 4817
Site Area	1,436m^2

Table 1 – Existing Property Details

1.3 Scope and Objective

This report addresses the requirements for stormwater management as described by:

- Queensland Urban Drainage Manual (QUDM); and
- Australian Rainfall and Runoff (ARR).

The objective is to outline, and where possible, quantify the potential water quantity and quality impacts and issues associated with the proposed development. Information is presented in the form of modelled as well as designs of management strategies to meet current best practice relevant for the site.

The proposed development includes:

- Proposed building for health care services;
- Internal carparking, bike racks and pedestrian paths;
- Landscaped areas;
- New services;

2 Existing Conditions:

2.1 Property Detail

As can be seen in the aerial photo below, the Site (total site area is 0.1436 Ha) is bounded by the following:

- North boundary – Existing residential
- East boundary – Existing residential
- South boundary – Neighbourhood centre (Shops and medical centre)
- West boundary – Mount Low Parkway (Road Reserve)

Figure 1 – Site Location Plan (Source: QLD Globe)

2.2 Topography

Site topographical information (ELVIS and QLD Globe) has been reviewed to identify constraints affecting the site. No survey is available at the time of preparing this report.

The site generally falls in an east-west direction towards the road reserve at an average grade between 1.0% - 1.25% based on publicly available LIDAR.

There are no notable external topographical features influencing the subject site outside of the local stormwater catchment. No apparent external catchments discharge into the subject site.

2.3 Existing Site Conditions & Improvements

The subject Site, located on Lot 2 on RP744351, is undeveloped with no existing structures located on the site. The site is sparsely grassed with no trees or other major vegetation.

2.4 Known Existing Flooding

Townsville City Council (TCC) flood mapping indicates that the subject site is not affected by the 1% AEP flood depth. The subject site is mapped within the Flood Hazard Overlay as containing area of low and medium flood hazard, although given only the frontage fringes this overlay is not of consideration. The proposed development has been considered and is accordance to the purpose and overall outcomes of the Flood Harad Overlay Code.

TownsvilleMAPS indicates that the 1% AEP flood level is RL 4.13m. The Finished Floor Level should meet the requirements of the National Construction Code with the allowable freeboard levels in addition to RL 4.13m.

Therefore, no further Flood Impact Study or investigation has been undertaken as part of this application, and in accordance with pre-lodgement advice obtained on the 27th November 2024.

2.5 Existing Site Stormwater Network

There is no known formal stormwater infrastructure internal to the site. Site stormwater is understood to convey across the site as sheet flow to the road reserve.

2.6 Existing External Stormwater Network

TownsvilleMaps – Community indicates that there is a 525 RCP pipe connecting to a stormwater pit within the road reserve towards the southern boundary of the subject site. The pipe network in the road reserve drains south and discharges into an open channel drain at the intersection of Mount Low Parkway and Manuka Court.

Figure 2 – Stormwater network (Source: TownsvilleMAPS)

3 Council Planning Requirements

3.1 Major and Minor System Design

The design of the major and minor system design shall be undertaken in accordance with Townsville City Council (TCC) and QUDM requirements as part of the detailed design, including the major and minor system design is to the 100-year and 2-year ARI events respectively in accordance with SC6.4.9.3 Table SC6.4.9.1 Minor System Design.

3.2 Stormwater Quality and Waterway Protection

Queensland State Planning Policy 2017 – Appendix 2 – Assessment Benchmarks – Water Quality have been reviewed in accordance with the proposed development.

The criteria and associated responses from Lekker Urban outlined in Table 4 below.

SPP Assessment Benchmarks – Water Quality	Lekker Urban Response to Criteria
For receiving waters, a development application for:	
(1) a material change of use for an urban purpose that involves premises 2500 m^2 or greater in size and; (i) (a) will result in six or more dwellings; or (ii) (b) will result in an impervious area greater than 25 per cent of the net developable area; or	This Benchmark does not apply. The subject site is less than 2500m^2.
(2) reconfiguring a lot for an urban purpose that involves premises 2500 m^2 or greater in size and will result in six or more lots; or	This Benchmark does not apply. The subject site is less than 2500m^2.
(3) operational works for an urban purpose that involves disturbing a land area 2500 metres2 or greater in size.	This Benchmark does not apply. The subject site is less than 2500m^2.

Table 4 – Response to criteria outlined within the QLD SPP 2017 – Appendix 2 – Assessment Benchmarks – Water Quality.

3.2.1 Erosion and Sediment Control (ESC)

A conceptual soil and water management plan will be prepared for the development in accordance with TCC guidelines as part of the detailed design phase.

3.3 Legal Point of Discharge

The subject site has been assessed in accordance with the Queensland Urban Drainage Manual, Fourth Edition (2017). In accordance with *Section 3.9.1 – Lawful Point of Discharge Test*, the applicable regulatory and other legal requirements have been reviewed and met to allow stormwater to discharge into the surrounding properties located at the north of the subject site. The criteria and associated responses from Lekker Urban outlined in Table 5 below.

QUDM Lawful Point of Discharge Test Criteria	Lekker Urban Response to Criteria
(iii) Will the proposed development alter the site's stormwater discharge characteristics in a manner that may substantially damage a third-party property [ii] *(see Section 3.6)* o If not, then no further steps are required to obtain tenure for a lawful point of discharge (assuming any previous circumstances and changes were lawful). o If there is a reasonable risk of such damage, then consider issue (ii) or (iii). [ii] *The issue of whether or not there is an actionable nuisance does not depend on what is demonstrated at the time the works are proposed. The issue is what in fact occurs. This is consistent with it being the developer's responsibility to not cause nuisance, rather than the regulator's responsibility to assess and condition works to prevent a nuisance.*	In conjunction with *QUDM Section 3.6 – Stormwater changes* the proposed subdivision does not change the stormwater regime in its pre-developed state through: o Diversion of stormwater. o Concentration of stormwater flows. o Changes in other flow characteristics. The existing point of discharge is the road reserve which is to be maintained. The proposed development is to implement stormwater detention in the form of 5000L rainwater tanks which is to control peak flows in the post development to match that of the pre-development conditions.
(iv) Is the location of the discharge from the development site under the lawful control of the local government or other statutory	Yes. Location of discharge under the control of the local authority. Permission to discharge is sought through this report

authority from whom permission to discharge has been received? This will include a park, watercourse, drainage or road reserve, stormwater registered drainage easement, or land held by local government (including freehold land). Note: The regulatory authority (in its capacity as land holder) is likely to require information about the potential impact of the site's stormwater discharge characteristics on third party properties (particularly those downstream of the proposed discharge point) before it will consent to the discharge entering its land. o If so, then no further steps are required to obtain tenure for a lawful point of discharge. o If not, then consider issue (iii). A landowner or regulator may require that the developer obtain an authority to discharge as described (ii).	
(v) An authority to discharge over affected properties will be necessary. In descending order of certainty, an authority may be in the form of: o Dedication of a drainage reserve or park o A registered easement for stormwater discharge/works o Written discharge approval	Criteria (ii) above is satisfied and criteria (iii) is not applicable.

Table 5 – Response to criteria outlined within the Lawful Point of Discharge Test from Section 3.9.1 of QUDM.

4 Stormwater Strategy

4.1 Stormwater Management Strategy Overview

The land use is proposed to be utilised for a health care service. The primary impacts associated with the stormwater management include:

- Increased flow volumes and potentially increased flowrates and associated impacts on existing downstream environment;

The proposed stormwater management strategy aims to manage runoff by including the following measures:

- New internal stormwater network to manage runoff from new roof areas to the legal point of drainage.

Drawings will be prepared as part of the detailed design phase which will document the internal drainage.

4.2 Stormwater Quantity

4.2.1 Introduction

Post-development peak flow is to be reduced to pre-development levels through the incorporation of stormwater detention in the form of a 5000L rainwater tank.

Both pre and post-development hydrologic and hydraulic models were developed to establish peak flow targets (pre-development) and determine performance of proposed stormwater system (post-development) for a range of storm events.

Table 6 provides a breakdown of pre and post-development imperviousness and ultimate discharge points.

	Pre Development Catchment	Post Development Catchment
Pervious area (m^2)	1,436	319
Impervious area (m^2)	0	1,117
Total area (m^2)	1,436	1,436
% Pervious	100	22.2
% Impervious	0	77.8

Table 6 – Pre and Post development catchment breakdown.

Key observation from these table as follows:

- Increase in impervious area of 1117m2 under post-development scenario
- Pre-development site imperviousness of 0% vs post-development imperviousness of 77.8%.

The proposed stormwater management strategy aims to manage runoff and limit peak flow discharge directly to the legal point of discharge.

4.2.2 Hydrologic and Hydraulic Modelling

The pre and post-development stormwater systems were assessed using DRAINS Hydrologic and Hydraulic Urban Catchment modelling. Relevant Australian Rainfall and Runoff (ARR) procedures were used to set up the hydrological model. Site IFD data was downloaded from the Bureau of Meteorology (BOM) website and storm patterns, pre-burst and losses downloaded from ARR Data Hub website.

Impervious percentages were based on sub-catchment land use (roofs, hardstand, open space etc.).

4.2.3 Modelling Results

The results from the proposed design are summarised in Table 7 for both the pre and post development flows up to the 100 year ARI event. Due to the increase in fraction impervious and reduction in time of concentration, the site experiences an increase in peak flow rates. The increase in peak flows can be mitigated through the use of detention system, such as a 5000L rainwater tank (above ground) which would throttle flow rates to pre development conditions. Further investigation shall be undertaken during detailed design to determine a suitable size and location of the system.

ARI Event	% AEP Event	Pre-Development (m3/s)	Post-Development (m3/s)	Difference (m3/s)
5-year	18%	0.036	0.057	0.021
10-year	10%	0.044	0.065	0.021
20-year	5%	0.054	0.074	0.020
50-year	2%	0.059	0.086	0.057
100-year	1%	0.061	0.095	0.034

Table 7 – Pre and Post Development Peak Flows.

The flows denoted above are excluding the inclusion of the above ground rainwater tank (OSD). The inclusion of the tank further reduces these flows back in-line with acceptable pre-development conditions.

5 Servicing of the site:

5.1 Water Supply

This section aims to assess the demand for the proposed development in accordance with the Townsville City Plan V2024/01 as well as identify a connection point for the internal hydraulics design. The assessment is limited to the proposed MCU, health care service only.

5.1.1 Existing Water Infrastructure

A review of the Council online infrastructure mapping indicates that there is a 150mm diameter water main running along the eastern verge of Mount Low Parkway. Fire hydrants are present along the water mains surrounding the site with a spring hydrant located on the adjoining boundary to the south of the subject site.

The existing development is connected to Council's network via a domestic property connection. The existing connection shall be removed and reinstated with a new property connection for a higher density development. Point of connection for the site is proposed via the existing water main located within verge at the property frontage.

5.1.2 Design Criteria

The water supply design criteria for the proposed development are based on Table 4.1 and Section 5 of the CTM Water Alliance Design and Construction Code .

- Average Daily Consumption (AD) = 600 L/EP/Day + 60L irrigation
- Mean Day max. Month (MDMM) = 1.50 x AD
- Peak Day (PD) – Low and Medium Density = 1.875 x AD
- Peak Hour (PH) – Low and Medium Density = 2.813 x AD

The flow demand for the proposed development is summarised below in conjunction with Townsville City Plan Table SC3.1.6a peaking factors for the equivalent persons (EP) is shown in Table . Based on the current zone of Low Density Residential and the proposed MCU land use of Neighbourhood Centre Zone, based on the adjacent sites, there is an EP increase of 0.93.

Description	EP x Ha (1436m2)	EP
Low Density Residential Zone	57 EP per Ha x 0.1436	8.18
Neighbourhood Centre Zone	63.5 EP per Ha x 0.1436	9.11

Table 8: Equivalent Persons

Parameter	Demand Calculation	Increased Demand
Average Daily Consumption (AD)	660 L/EP/Day x 0.93 (EP)	616 L/d
Mean Day Max Month (MDMM)	1.50 x (AD) = 1.50 x 616	837 L/d
Peak Day (PD)	1.875 x (AD) = 1.875 x 616	1,046.25 L/d
Peak Hour (PH)	2.813 x (AD) = 2.813 x 616 /day	0.182 L/s

Table 9: Flow Demand for the Proposed Development

Flow demand for the development is proposed to be entered into Council's water network to confirm that pressures and flow requirements are available within the existing network to meet the TCC development requirements. Based on the increase of a Peak Hour Flow Rate of 0.182 L/s there is little impact to council's infrastructure and no foreseeable demand implications to the wider network.

5.1.3 Development Water Network

Development Network Connection

The connection point for the proposed development is nominated to be located along the existing Council 150mm diameter water (Figure 3). A Standard water connection to CTM Water Alliance Design and Construction Code approved drawings WAT-1105-2 is proposed for the subject development. There are no proposed hydrants for the proposed development, based on the GFA m² being under 500m² and the location of the existing street hydrant to provide coverage.

Internal Water Network

The internal water network shall be designed and documented by the internal hydraulics consultant during detailed design phase.

Figure 3 – Sewer and Water network (Source: TownsvilleMAPS)

5.2 Sewerage

This section aims to assess the loading for the proposed development in accordance with the Townsville City Plan V2024/01. The assessment is limited to the proposed health care service only.

5.2.1 Existing Sewerage Infrastructure

The subject site is serviced via council infrastructure and falls under Wastewater Catchment WB1 according to TownsvilleMAPS data. The site is serviced by an existing 150mm sewer main located along the eastern boundary within the rear adjoining lots boundary and grades to the south to manhole 5/WB1A1. Council records indicate that there is an existing 100mm jump for the subject site (Object ID 125623). The existing connection shall be removed and reinstated with a new property connection for a higher density development, 150mm diameter. Point of connection for the site is proposed via the existing sewer gravity main along the eastern boundary of the site.

5.2.2 Design Criteria

The sewerage design criteria for the proposed development are based on Table 10 of CTM Water Alliance Design and Construction Code.

A summary of the calculations to determine the equivalent persons (EP) is shown in Table based on the demand generation rate provided in Table SC3.1.6a. Based on the current zone of Low Density Residential and the proposed future land use of Neighbourhood Centre Zone, based on the adjacent sites, there is an EP increase of 3.34.

Description	EP x Ha (1436m2)	EP
Low Density Residential Zone	57.2 EP per Ha x 0.1436	8.21
Neighbourhood Centre Zone	80.5 EP per Ha x 0.1436	11.55

Table 10: Equivalent Persons

The following Average Daily Consumption and peaking factors were adopted to obtain flow parameters from Table 10 of CTM Water Alliance Design and Construction Code:

- Average Dry Weather Flow (ADWF) = 230L/EP/Day
- Peak Wet Weather Flow (PWWF) = Max { 5 x ADWF ; C_1 x ADWF }
- Peak Dry Weather Flow (PDWF) = C_2 x ADWF
- C_1 Peaking Factor = $15 \times EP^{-0.1587}$
- C_2 Peaking Factor = = $4.7 \times EP^{-0.105}$

The flow loading for the proposed development is summarised below in conjunction with Table 10 of the CTM Sewerage Network Design Criteria peaking factors.

Parameter	Demand Calculation	Increased Demand
Average Dry Weather Flow (ADWF)	230 L/EP/Day x 3.34 (EP)	768 L/d
C_1 Peaking Factor	$15 \times 3.34^{-0.1587}$	12.38
C_2 Peaking Factor	$4.7 \times 3.34^{-0.105}$	4.14
Peak Wet Weather Flow (PWWF)	Max { 5 x 768 L/d ; 12.38 x 768 L/d }	9,507 L/d
Peak Dry Weather Flow (PDWF)	4.14 x 768 L/d	3,179 L/d

Table 11: Flow Loading for the Proposed Development

Based on the MCU increased assessment of 3.34 EP and the above demand calculations and parameters the proposed development will result in an increased Peak Wet Weather Flow of up to 0.11 L/s.

Internal Sewerage Network

The internal sanitary shall be designed and documented by the internal hydraulics consultant during detailed design phase.

6 Conclusion:

It has been demonstrated that through the proposed stormwater management measures within this report that flow generated from the development whilst greater than pre-development could be mitigated with the implementation of onsite stormwater detention which shall be suitably sized during the detailed design phase.

Stormwater management measures will include:

- New internal stormwater network to manage runoff from new roof areas to the existing open channel drainage system; and
- Areas to be directed to landscaped depressions to promote detention and infiltration.
- Stormwater detention shall be implemented into the system in the form of a 5000L rainwater tank to return the post development flow rates to that of the pre-development scenario.
- The proposed MCU results in minimal increase to the water and sewer demands that currently service the site and as a result do not impact on the wider council reticulated network.
- An appropriate connection to Council's existing water reticulation network is available with an estimated demand due to the proposed development of 0.182 L/s during Peak Hour (PH).
- An appropriate connection to Council's existing sewer network is available with an estimated additional loading due to the proposed development of 0.11 L/s during Peak Wet Weather Flow (PWWF).