28°33'17.9"S
153°30'01.5"E

Mixed-Use Development: 115 & 119 Stuart Street, Mullumbimby

Transport Impact Assessment

Publication Date: 14 November 2025

Prepared for Stuart Street Mullumbimby Pty Ltd

IMP2505045TTA01F02

Company

Impact Traffic Engineering Pty Ltd

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This offer is extended to built environment professionals.

IMPACT® acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander people today.

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Document

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Contents

Tables

Figures

Appendices

1 IMPACT® Snapshot

Location

Address	28°33'17.9"S 153°30'01.5"E	115 & 119 Stuart Street, Mullumbimby
Municipality		Byron Shire Council

Development Proposition

Use	Mixed use development comprising 50 co-living apartments, ground level commercial premises and parking.
Yield	Co-Living Housing: 50 Apartments Food & Drink Premises: 44 sq.m GFA Office Premises: 16 sq.m GFA
Car Parking	41 spaces, comprising Standard Parking (33 spaces), DDA Compliant Parking (3 spaces) and Standard Parking - Car Share (5 spaces)
Motorcycles	4 motorcycle parking spaces
Bicycle Parking	12 bicycle parking spaces
Access Arrangements	People in Vehicles: Access to the main car parking area is contemplated via a new two-way crossover to Whian Street. This access will service 33 of the 42 spaces proivided on site as well as the 4 motor cycle spaces. The EV, car share spaces and loading area are planned along the site's western boudnary, and will be accessibale directly from Studal Lane. People in Bicycles: Access for people in bicycles will be provided via Stuart Street
Loading Arrangements	A dedicated on-site loading area in the south-west corner of the site. The loading bay is designed to accommodate rigid vehicles up to 8.0m in length. The loading bay is designed to be accessed from Studal Lane with vehicles approaching from the north, consistent with the one-way restrictions of Studal Lane

Statutory Assessment

Development Controls

Chapter B4 - Traffic Planning, Vehicle Parking, Circulation and Access

Traffic Impact	Forecast to generate up to 21 trips during the network peak periods The forecast of up to 21 trips during the network peak periods results in a moderate impact classification. We observe that this volume is toward the lower end of the moderate impact scale nominated as 10 - 50 trips. On this basis, the 21 trips, equating on average to about 1 trip every 3 minutes will have no material impact to the performance of nearby intersections in the locality of the site.
Car Parking Requirements	<u>Co Living Apartments</u> Parking requirements for the co-living apartments component of the development is dictated by the State Environmental Planning Policy (Housing) 2021, which specifies a rate of 0.5 spaces per apartment. A requirement for 25 spaces for the co-living apartment results. <u>Commercial Premises</u> Parking requirements for the commercial premises of the development, namely the food and drink and office premises, are dictated by the Byron Shire DCP. Which specifies car parking requirement rates as set in Table B4.1. A requirement for 3 car parking spaces for the commercial premises results. <u>Total</u> A total requirement for 28 spaces applies to the proposed development. The proposal contemplates 41 car parking spaces on site, including 5 car share spaces. Guidance at Byron Shire Development Control Plan 2014 Chapter E10 Byron Bay Town Centre is that where car share spaces with car share cars are provided on site, parking rates may be discounted by a maximum of 3 car spaces per car share vehicle. Accordingly, the 5 car share parking spaces translates to an equivalent of 15 car parking spaces. Considering the above, this translates to an effective provision of 51 spaces. These spaces will be allocated as follows: — Co-Living: 48 car spaces (Including the equivalent of 15 spaces from car share) — Commercial Premises: 3 car spaces

Parking Layout Standards	The proposed car parking design and access arrangements have been assessed against the requirements of Chapter 4.2.2 of the Byron Shire DCP The proposed car park and accessways have been assessed and determined to have satisfied the relevant design guidelines
Bicycle and Motorcycle Parking	Bicycles A requirement for 3 bicycle parking spaces for the commercial premises, and no parking for the co-living housing. A total of 12 bicycle parking spaces is planned on-site. This provision exceeds the DCP requirements. Motorcycles No specific requirement for motorcycle parking is specified. Notwithstanding, 4 motor cycle spaces are planned.
Loading Bays	The proposed loading bay arrangement has been assessed against the requirements of Chapter 4.2.9 of the Byron Shire DCP. The proposed loading arrangements have been assessed and determined to have satisfied the relevant design guidelines / principles contained within the Byron Shire DCP and AS2890.2:2018

2 Introduction

2.1 Engagement

IMPACT® have been engaged by Stuart Street Mullumbimby Pty Ltd to undertake a Transport Impact Assessment for the proposed mixed-use development, comprising 50 co-living apartments, ground level commercial premises and parking at 115-119 Stuart Street, Mullumbimby NSW.

2.2 Scope of Engagement

This Transport Impact Assessment has been prepared to accompany a town planning submission.

The assessment reviews the development proposition against relevant policy and technical standards and sets out the findings of this assessment in support of the application.

2.3 Reference Material

In preparing this assessment we have referenced the following documents:

Plans	Development plans prepared by HGA Studio;
Statutory Controls	Byron Shire Development Control Plan (DCP) 2014 — Chapter B4 - Traffic Planning, Vehicle Parking, Circulation and Access State Environmental Planning Policy (Housing) 2021 — Part 3 - Co-Living Housing
Technical Standard	Australian Standards: — AS2890.1:2004 Off-Street Car Parking — AS2890.2:2018 Off-Street Commercial Facilities — AS2890.3:2015 Bicycle Facilities
Product Specification Sheets	Five at Heart - The Arc

3 Development Proposition

3.1 Use and Yield

The proposal contemplates the construction of a three-storey, mixed-use development, comprising co-living apartments, ground level commercial premises and parking, as summarised in Table 1.

Table 1 Development Schedule

Use	Yield
Co-Living Apartments	50
Food & Drink Premises	44 sq.m
Office Premises	16 sq.m

The development is intended as a build to rent proposition, with residents provided with communal co-working and living spaces on each floor.

3.2 Parking

3.2.1 Vehicles

A total of 41 car parking spaces is contemplated within a ground floor car parking area. Specifically, the following is contemplated:

Table 2 Parking Schedule

Use	Area / No
Standard Parking	33
DDA Compliant Parking	3
Standard Parking - Share Cars	5

The parking spaces will include 4 spaces that will be provided with EV charging capabilities.

Car parking is designed in accordance with Australian Standard AS2890.1:2004

3.2.2 Motorcycles

A total of four (4) motorcycle parking spaces is proposed within the ground floor car park.

3.2.3 Bicycles

A total of 16 bicycle parking spaces is proposed within a secure area on the ground floor.

Bike spaces are proposed to be provided in the form of eight (8) dual stacker bicycle systems.

Specifications for the nominated system is provided as Appendix B

3.3 Access Arrangements

3.3.1 People in Vehicles

Access to the main car parking area is contemplated via a new two-way crossover to Whian Street. This access will service 33 of the 42 spaces proivided on site as well as the 4 motor cycle spaces.

The EV, car share spaces and loading area are planned along the site's western boudnary, and will be accessibale directly from Studal Lane.

3.3.2 People in Bicycles

Access for people in bicycles will be provided via Stuart Street.

The site's access arrangements are shown in Figure 1.

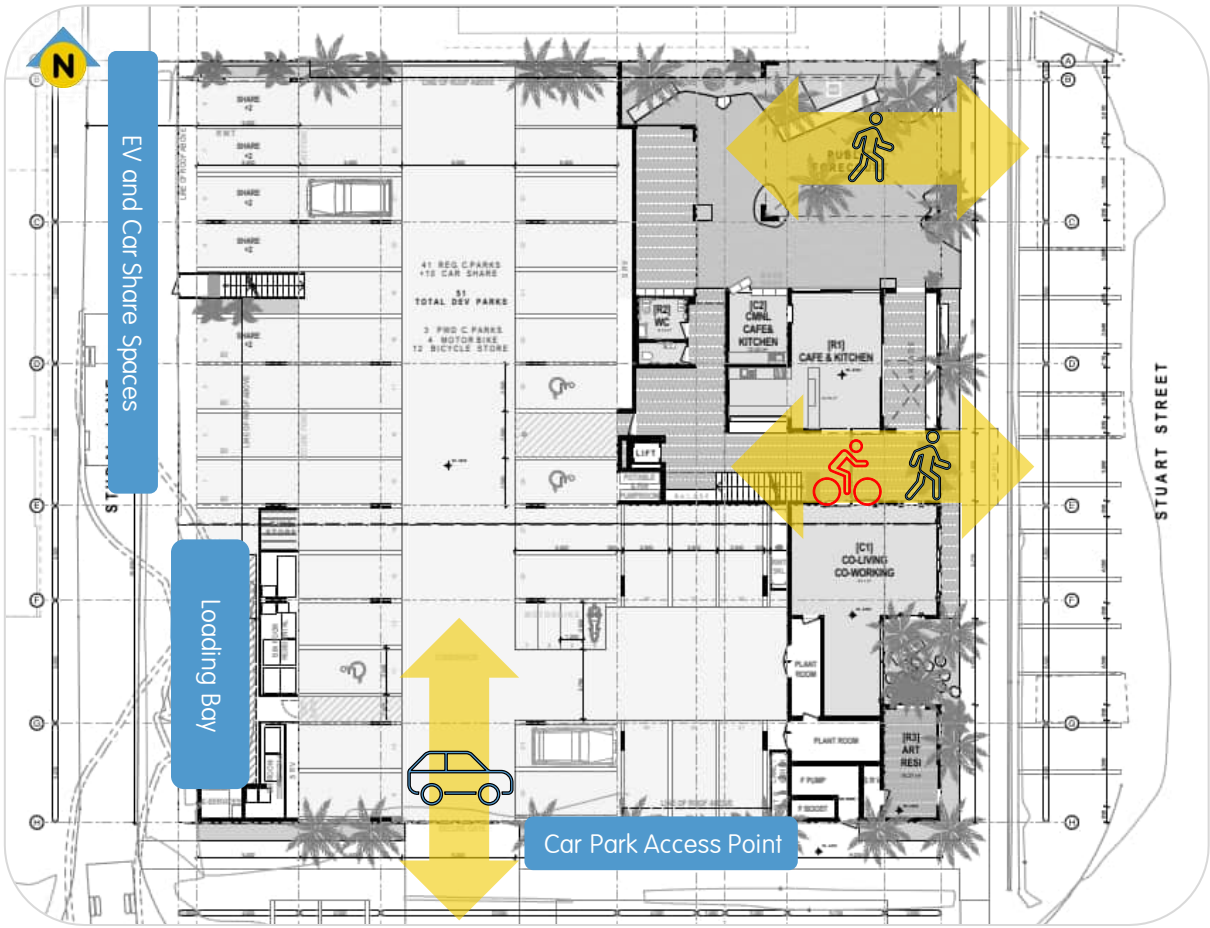


Figure 1 Access Arrangements

3.4 Loading Arrangements

The proposed development contemplates a dedicated on-site loading area in the south-west corner of the site as shown in Figure 1.

The loading bay is designed to accommodate rigid vehicles up to 8.0m in length. The loading bay is designed to be accessed from Studal Lane with vehicles approaching from the north, consistent with the one-way restrictions of Studal Lane.

4 Existing Conditions

4.1 Location

The subject site is bound to the south by Whian Street, West by Studal lane and East by Stuart Street as illustrated in Figure 2 and Figure 3.

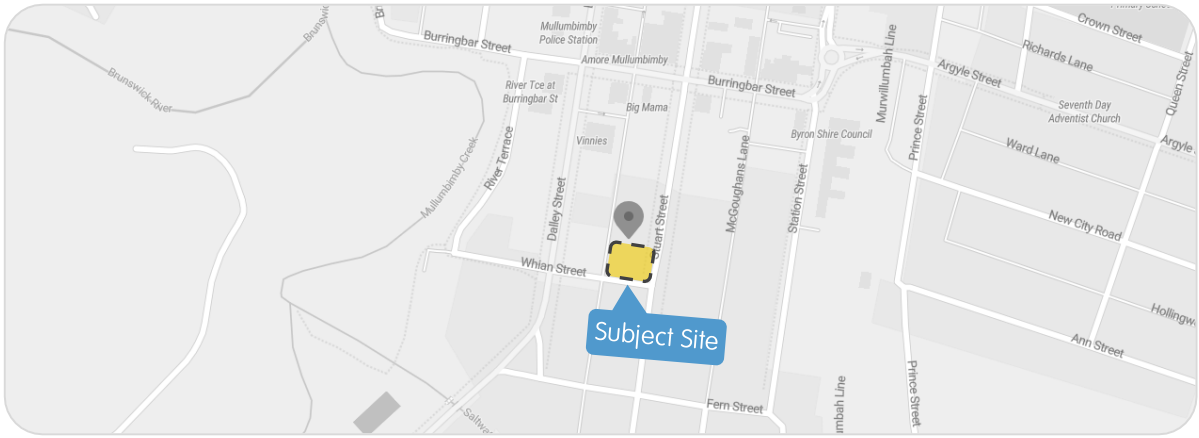


Figure 2 Location of Subject Site

Figure 3 Aerial View of Subject Site

4.2 Planning Zone

The subject site is located within the Local Centre Zone (E1) as illustrated in Figure 4.

Figure 4 Land Use Planning Zone

The purpose of this zone is to:

- Provide a range of retail, business and community uses that serve the needs of people who live in, work in or visit the area.
- Encourage investment in local commercial development that generates employment opportunities and economic growth.
- Enable residential development that contributes to a vibrant and active local centre and is consistent with the Councilís strategic planning for residential development in the area.
- Encourage business, retail, community and other non-residential land uses on the ground floor of buildings.
- Maximise public transport patronage and encourage walking and cycling.

4.3 Road Network

4.3.1 Stuart Street

Classified as local road, Stuart Street is aligned in a generally north-south direction between Mill Street to the north and Myokum Street to the south.

Along the site frontage, Stuart Street comprises an approximate 10 metre trafficable road pavement with unrestricted, angled, kerbside parking within the verge. Its typical cross-section is illustrated in Figure 5.

Figure 5 View of Stuart Street facing north adjacent the subject site

4.3.2 Whian Street

Classified as local road, Whian Street is aligned in an east-west direction between River Terrace to the west and Stuart Street to the east.

Along the site frontage, Whian Street comprises an approximate seven (7) metre trafficable road pavement unrestricted, angled, kerbside parking within the verge. Its typical cross-section is illustrated in Figure 6.

Figure 6 View of Whian Street facing east adjacent the subject site

4.3.3 Studal Lane

Classified as local road, Studal Lane is aligned in a north-south direction between Burringbar Street to the north and Myokum Street to the south. Studal Lane operates as one-way southbound roadway.

Along the site frontage, Studal Lane comprises an approximate three (3) metre trafficable pavement. Its typical cross-section is illustrated in Figure 7.

Figure 7 View of Studal Lane facing south adjacent the subject site

4.4 Sustainable Transport

The subject site is accessible via a well-connected sustainable transport network that comprises walking paths, shared bike and walking paths as well as public transport options.

The location of the site relative to this network is illustrated at Figure 8.

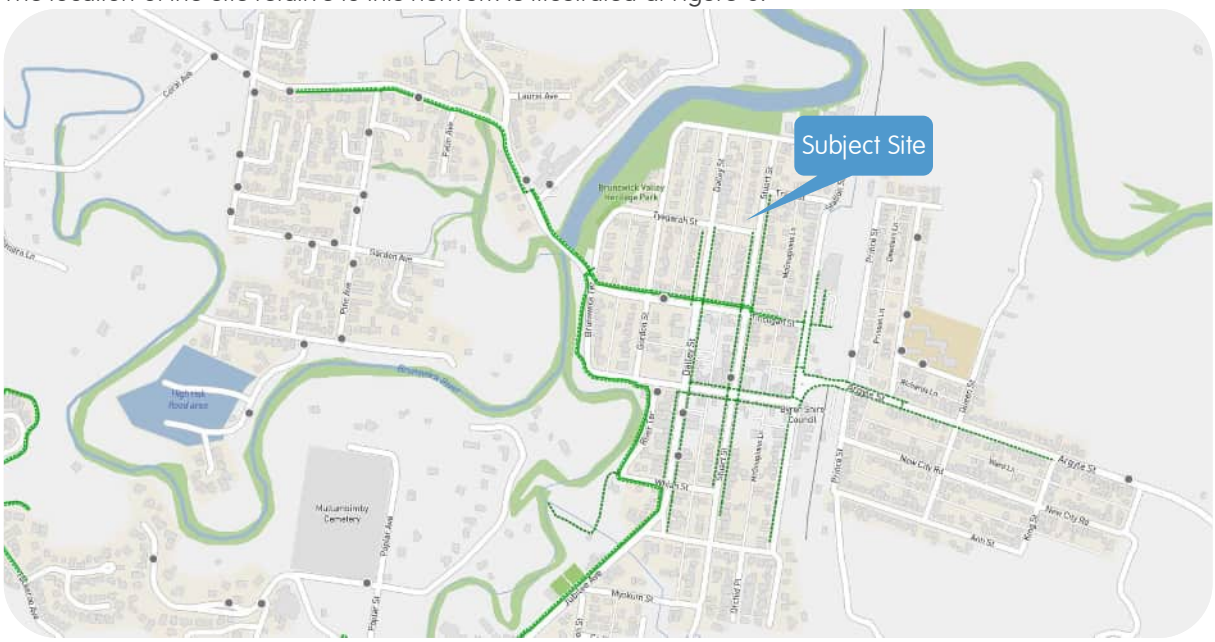
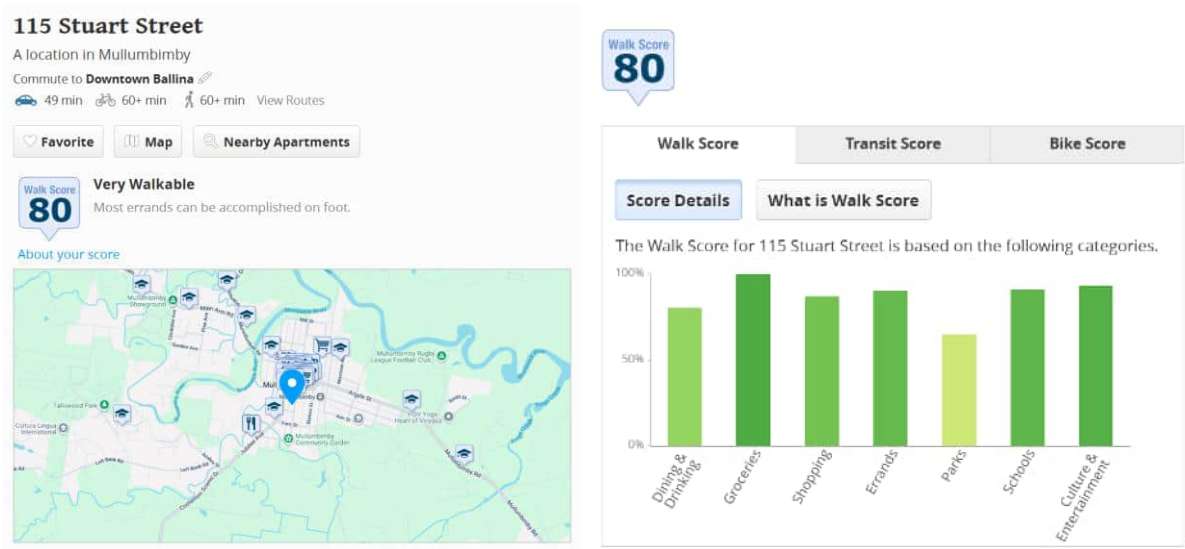


Figure 8 Sustainable Transport Network

The sustainable transport merits are validated by the site's WalkScore. Specifically, the site is rated as very walkable, with a score of 80, meaning that most errands can be undertaken as a pedestrian.

Within walking distance to the site are a range of commercial, retail, school and entertainment venues.



5 Development Controls

The applicable development controls are as follows:

Byron Shire Development Control Plan 2014	Chapter B4 - Traffic Planning, Vehicle Parking Circulation and Access
State Environmental Planning Policy (Housing) 2021	Part 3 - Co-Living Housing

5.1 Byron Shire Development Control Plan 2014 - Chapter B4

5.1.1 Aims

The aim of this development control plan is:

- To ensure that all relevant traffic impacts relating to development are identified, assessed and mitigated.
- To ensure that parking supply and management in new developments supports Council policies and objectives for the development of Byron Shire.
- To ensure that traffic generating developments make adequate provision for off-street car parking, such that the needs of occupants, users, visitors, employees, service and delivery vehicles are met.
- To ensure the safe and efficient circulation of vehicles entering, leaving and within car parking and service/delivery areas.
- To minimise the detrimental effects (particularly visual and radiated heat effects) associated with off-street car parking areas on the amenity of urban areas.
- To ensure that entry/exit points to car parking and service/delivery areas are situated in a way that sight distances are maximised, and disruption to the circulation of vehicles on the public road system is minimised.
- To have regard to the objectives contained within the Byron Shire Strategic Transport Statement (Transport Policy).

5.2 Traffic Impacts - B4.2.1

The traffic attracted to a new land use development has the potential to have low impact, moderate impact or high impacts on the adjacent road network.

Guidance at B4.2.1 Traffic Impact suggest the following thresholds:

Low Impact	10 peak hour trips
Moderate Impact	10 - 50 peak hour trips
High Impact	More than 50 peak hour trips.

5.2.1 Traffic Generation

5.2.1.1 Co-Living Apartments

TfNSW's technical publication Guide to Transport Impact Assessment sets out traffic generation rates based on survey data collected for a range of land uses.

The Guide suggests that medium density residential developments in regional settings generate vehicle trips at the following rates:

AM Network Peak Hour	0.41 trips / dwelling
PM Network Peak Hour	0.60 trips / dwelling

The above forecast is considered conservative because:

- The review site is conveniently located proximate to the Mullumbimby Town Centre where a mix of retail and commercial uses are accessible via a short walk from the site.
- The inclusion of share cars in the development will contribute to lower car ownership per apartment. This will in turn induce lower trip generation rates.

On this expectation it is reasonable to vary the typical rates. For this assessment we have adopted rates applicable to medium density residential developments in the Sydney metropolitan area as follows

AM Network Peak Hour	0.39 trips / dwelling
PM Network Peak Hour	0.37 trips / dwelling

For the 50 co-living apartments planned on site, these rates translate to the following volumes:

Period	No. Apartments	Trip Generation Rate	Forecast Generation
AM Network Peak Hour	50	0.39 trips / dwelling	20
PM Network Peak Hour		0.37 trips / dwelling	19

5.2.1.2 Commercial Premises

The food and drink premises is expected to draw its patronage from people within the building and those visiting the Mullumbimby Town Centre. This demand is categorised as a linked trip and does not constitute a new trip on the network.

Accordingly, new trips associated with the food and drink premises, and also the office premises, are expected to be primarily generated by employees.

During the critical AM and PM network peak hours, a trips generation rate of 0.5 trips per car spaces is expected. With three (3) car parking spaces required and provided for the commercial uses, this will translate to the following peak hour forecast:

Period	No Spaces	Trip Generation Rate	Forecast Generation
AM Network Peak Hour	2 spaces	0.5 trips / space	1
PM Network Peak Hour		0.6 trips / space	1

5.2.1.3 Total Traffic Generation

Considering the above, the proposed development will in total generate up to 21 trips during the network peak periods as summarised below.

Period	Forecast
AM Network Peak Hour	21
PM Network Peak Hour	20

5.2.2 Traffic Impact

The forecast of up to 21 trips during the network peak periods results in a moderate impact classification.

We observe that this volume is toward the lower end of the moderate impact scale nominated as 10 - 50 trips.

On this basis, the 21 trips, equating on average to about 1 trip every 3 minutes will have no material impact to the performance of nearby intersections in the locality of the site.

5.3 Car Parking Requirements - Byron Shire DCP B4.2.5 & SEPP (Housing) 2021 Part 3

5.3.1 Car Parking Provision Requirements

Car parking provision requirements for the co-living apartments is dictated by the State Environment Planning Policy (Housing) 2021.

Car parking provision requirements for the commercial tenancies are dictated by Table B4.1 to Chapter B4 of the Byron Shire's Development Control Plan.

The above standard set the following rates for the uses contemplated on the site:

Co-Living Housing	0.5 parking spaces for each private room
Food and Drink Premises	1 space per 20sqm of GFA
Office Premises	

Application of the above rates reveals a requirement for **28 car parking spaces**, comprising:

Use	Rate	Yield	Requirement
Co-Living Housing	0.5 spaces for each private room	50 apartments	25
Food and Drink Premises	1 space per 20sqm of GFA	44 sq.m	2
Office Premises	1 space per 20sqm of GFA	16 sq.m	1
		Total Required	28

5.3.2 Proposed Provision

The development is planned with 41 car parking spaces on site, including 5 car share spaces.

Car share services provide convenient access to shared cars on an as needs basis, reducing the need for users that have an occasional need for a car to own their own.

The provision of car share opportunities aligns with Byron Shire's Car Share Policy which outlines the following desired outcomes:

a) a diversified transport system;

b) a reduction in private vehicle ownership dependence;

c) provision of a transport option for residents that may deliver greater affordability, flexibility and social inclusion;

d) provision of an alternative option to site development including an option for no parking to deliver better design outcomes for sustainability;

e) reduction in traffic and congestion;

f) reduction of on-street parking demand in the Shire;

g) reduction of emissions and contributions to the Zero Emissions targets; and

h) provision of an alternative to traditional fleet leasing model for council staff

Guidance at Byron Shire Development Control Plan 2014 Chapter E10 Byron Bay Town Centre is that where car share spaces with car share cars are provided on site, parking rates may be discounted by a maximum of 3 car spaces per car share vehicle.

Accordingly, the five (5) car share parking spaces proposed within the development's car parking area, translate to a discount of 15 car parking spaces.

Allowing for the multiple use opportunities that result, an effective provision of 15 spaces results from the 5 car share parking spaces.

the proposed development has an effective provision of 51 spaces as calculated below.

Use	No	Multiplication Factor	Effective Provision
Standard Parking	33	1	33
DDA Compliant Parking	3	1	3
Standard Parking - Car Share	5	3	15
Total Effective Provision			51

Based on the effective provision, the intention is to allocate parking as follows:

Use	Provision	Multiplication Factor	Effective Allocation	
Co-Living Housing	33 spaces	1	33	48
	5 car share spaces	3	15	
Commercial Premises	3 spaces	1	3	3

The effective provision of 48 spaces exceeds the requirements of the relevant development controls.

5.3.3 Conclusion - Car Parking Provision

We can conclude that an adequate number of spaces are provided to cater for the projected demand.

Accordingly, the development proposition satisfies the purpose of the Byron Shire Development Control Plan, specifically:

- To ensure that parking supply and management in new developments supports Council policies and objectives for the development of Byron Shire.

5.4 Parking Layout Standards - Byron Shire DCP B4.2.2

The proposed car parking design and access arrangements have been assessed against the requirements of Chapter 4.2.2 of the Byron Shire DCP. Our findings are as follows:

	Requirements	Design Response	Status
1	Car parking requirements, parking layout, driveway widths and vehicle manoeuvring areas are to be in accordance with the relevant sections of the current editions of Australian Standard 2890.	All car parking requirements, parking layout, driveway widths and vehicle manoeuvring areas are designed in accordance with the relevant sections of AS2890.	**Comply**
2	All parking spaces in commercial and industrial developments must be available for unrestricted public access and employee use. There shall be no restriction on public parking in the required car park, other than car spaces set aside for any residential units approved on the site.	Car parking is unrestricted for residents and employees, as intended.	**Comply**
3	Access for the disabled and parking facilities are to be provided in accordance with the current editions of AS 2890 and the Building Code of Australia and the requirements of the Disability Discrimination Act, 1992 (Commonwealth).	Access for DDA spaces is designed in accordance with AS2890, the Building Code of Australia and meet the requirements of the Disability Discrimination Act 1992.	**Comply**
4	Tandem or stacked parking is not generally favoured. However, in certain cases, the provision of a limited number of employee parking spaces may be provided in this way in circumstances where no inconvenience arises from its use and subject to the following guidelines: a) The applicant must be able to demonstrate that there is a real need for stacked parking and that the provision of stacked parking will not adversely affect the use of the site. b) No more than two (2) cars are parked in a stacked arrangement, so that no more than one (1) vehicle has to move to allow egress of another. c) Stacked parking is only to be used to provide parking for people employed on the premises and likely to park all day or a major part of the day. d) Stacked parking spaces are to be used by the occupants of the site in one tenancy. e) Stacked parking for customer/public and for separate dwellings on the same property will not be supported.	No tandem spaces are proposed.	**N/A**

5.4.1 Conclusion - Car Parking Design

The proposed car park and accessways have been assessed and determined to have satisfied the relevant design guidelines.

5.5 Bicycle and Motorcycle Parking - B4.2.8

5.5.1 Bicycle Parking

5.5.1.1 Bicycle Parking Provision Requirements

Table B4.1 to Chapter B4 of the Byron Shire's Development Control Plan provides rates for various land uses. The following rates apply to the uses contemplated on the site:

Medium Density Housing	No Rate Specified
Food and Drink Premises	1 space per 25sqm of GFA
Office Premises	1 space per 25 sqm of GFA

Application of the above rates yields a requirement for 3 bicycle parking spaces for the commercial premises, and no parking for the co-living apartments.

5.5.1.2 Provision

A total of 12 bicycle parking spaces is planned on-site. This provision exceeds the DCP requirements.

5.5.1.3 Design

Bike spaces are proposed to be provided in the form of six (6) dual stacker bicycle systems. Specifications for the nominated system is provided as Appendix B

5.5.2 Motorcycle Parking

5.5.2.1 Motorcycle Parking Provision Requirements

No specific requirement for motorcycle parking is specified. However, the DCP specifies:

> To encourage alternative forms of motor transport and to enable applicants to utilise areas within a car park that are undersized for the standard vehicle space, the following motorcycle parking provisions are to apply:
>
> > b) For smaller developments where motorcycle spaces are proposed in lieu of car parking, these will be considered on merit, provided a minimum of 90% of parking is for cars, and 4 bike spaces are provided for every vehicle space not provided (e.g a development generating 10 car parking spaces, could propose 9 spaces and 4 motorcycle spaces).

The proposed development seeks to provide motorcycle spaces in lieu of car parking. Specifically, the development has a requirement to provide 50 resident spaces, however an effective provision of 49 spaces is planned.

To offset the short fall of one (1) resident space, four (4) motorcycle spaces is proposed within the car parking area.

This provision shall contribute positively to providing alternative forms of motor transport for residents of the development.

5.5.2.2 Design

Motorcycle spaces are designed at 1.2m wide x 2.5m long in accordance with AS2890.1.

5.6 Loading Bays - DCP B4.2.9

The proposed loading bay arrangement has been assessed against the requirements of Chapter 4.2.9 of the Byron Shire DCP. Our findings are as follows:

	Requirements	Design Response	Status
1	All developments have a need for a safe loading and unloading area (service area) which does not obstruct the passage of vehicles or pedestrians. Unless designed specifically for a nominated vehicle type or types appropriate to the use of the proposed development, loading bays should be provided in accordance with the schedule contained in Table B4.2.	While Table B4.2 permits use of the car parking area for loading vehicles, the loading bay is proposed separate to car parking area and shall not interfere with the passage of vehicles or pedestrians. The loading bay is suitably provided such that it may be accessed by rigid vehicles up to 8.0m in length, exceeding the requirement of the 6.4m SRV required as per Table B4.2	**Comply**
2	Access, loading bays and manoeuvring for a service area must be designed in accordance with the current editions of AS 2890 Parking Facilities.	Loading bay is designed with at width 3.5m and length 13.6m, exceeding the loading bay requirements for a service vehicle as per AS2890.2. Swept paths attached within Appendix A demonstrate loading vehicle movements with appropriate clearances and turning circle parameters.	**Comply**
3	The service area must be a physically defined location, screened from public view, and not used for purposes other than servicing, loading and unloading.	Loading bay is located in a discrete location, screened from the main roadways of Whian and Stuart Street. While directly abutting Studal Lane, this is deemed appropriate considering the nature of this frontage.	**Comply**

	Requirements	Design Response	Status
4	Service area layout must facilitate its efficient use and must effectively discourage on-street loading and unloading.	The service area provides direct connection to the waste storage areas which will be the primary use of the loading area.	**Comply**
5	Requirements for storage and collection of waste must be taken into account in service area design.	Service area has been appropriate designed to consider the storage and collection of waste.	**Comply**
6	All service vehicles must be able to enter and leave the site in a forward direction, i.e. adequate manoeuvring space is required on site.	Swept paths attached as Appendix A demonstrate the loading vehicles entering and leaving the site in a forward direction.	**Comply**
7	Internal roadways must be of a size adequate for the largest vehicle anticipated to use the site.	Service area is accessed directly from Studal Lane.	**N/A**
8	Service vehicle movements should be separated from car movements.	Service area is accessed directly from Studal Lane.	**Comply**

5.6.1 Conclusion - Adequacy of Loading Bays

The proposed loading arrangements have been assessed and determined to have satisfied the relevant design guidelines / principles contained within the Byron Shire DCP and AS2890.2:2018.

6 Other Considerations

6.1 Access Via Studal Lane

Studal Lane operates as a one way (southbound) roadway. Motorists seeking to access the site via Studal Lane will need to arrive via the Burringbar Street / Studal Lane intersection.

We observe that at this northern end of the Studal Lane, ad hoc loading activity occurs such that a level of traffic friction occurs for through traffic. These ad hoc arrangements are shown below.

The proposed development is expected to generate modest traffic activity via Studal Lane associated with

Resident Demand	8 parking spaces
Loading & Waste Collection Activity	X1 Loading Dock

6.1.1 Co-Living Demand

With 8 parking spaces accessible via Studal lane, the forecast trip generation rate of 0.39 trips / dwelling results in a peak hour potential for 3 trips during the peak hours, and in the order of 24 - 30 trips per day.

Noting the one way operation of strudel Lane, only 12 - 15 trips per day would traverse the northern end of Studal Lane.

6.1.2 Loading Activity

The loading area will service

- Residential Use - Waste Collection and move in / move out activity
- Retail / Cafe Use - Waste Collection and Deliveries

In a worst-case scenario peak activity is expected at up to 14 movements across the day comprising:

- 7 movements recorded at the Burringbar Street / Studal Lane intersection, and
- 7 movements recorded at the Whian Street / Studal Lane intersection.

During peak hours, this would be in the order of up to 2 trips, with one movement traversing the northern end of Studal Lane.

This worst case scenario would occur in the following conditions

- During days when waste collection is occurring,
- Assumes that waste collection for the residential and retail / cafÈ both occur on the same day
- Assumes that peak retail / cafe loading activity occurs on the same day as waste collection and all activity occurs via Studal Lane. Some loading will occur via Stuart Street

	Activity	Volume	Notes
Residential Use	Waste Collection	4 Trips (assuming 2 waste streams are collected on the one day) — 2 Inbound (Burringbar Street / Studal Lane) — 2 Outbound (Whian Street / Studal Lane)	This activity does not occur every day. Limited to one day a week.
	Move In / Move Out	0 Trips	Not a typical / regular event.
Retail / Cafe Use	Waste Collection	4 Trips (assuming 2 waste streams are collected on the one day) — 2 Inbound (Burringbar Street / Studal Lane) — 2 Outbound (Whian Street / Studal Lane)	This activity does not occur every day. Limited to one day a week.
	Deliveries	RMS (NSW) Rates suggest a peak daily rate of between 2 trip - 6 trips / 100 sq.m. The highest rate is recorded on one day of the week when the retail tenancy is restocking most of their goods. The CafÈ is planned at about 100sq.m therefore 6 trips are expected as a worst case. — 3 Inbound (Burringbar Street / Studal Lane) — 3 Outbound (Whian Street / Studal Lane)	There is the reasonable potential for some of the deliveries to occur via Stuart Street, with delivery vehicles (vans) suing short term parking to drop off goods.

Assuming a 10 hour window for the above activity to occur, the 7 movements expected at the Burringbar Street / Studal Lane intersection equate to about 2 service vehicles every 3 hours on average

This level of traffic activity would not contribute to operational challenges at the Burringbar Street / Studal Lane intersection

Note : Waste collection is planned via a private waste contractor. Accordingly, should the community require further reassurance, we could proffer that this activity can be scheduled to occur outside peak periods at the Burringbar Street / Studal Lane intersection

Outside the above worst-case scenario, the practical forecast would be that on most days of the week, the loading area would generate between 2 - 4 movements across the day.

This practical level of activity (2 - 4 movements across the day) can be comfortably accommodated at the intersection and the road network.

In the context of the ad hoc loading activity occurring to the north as seen in the image above, it is observed that:

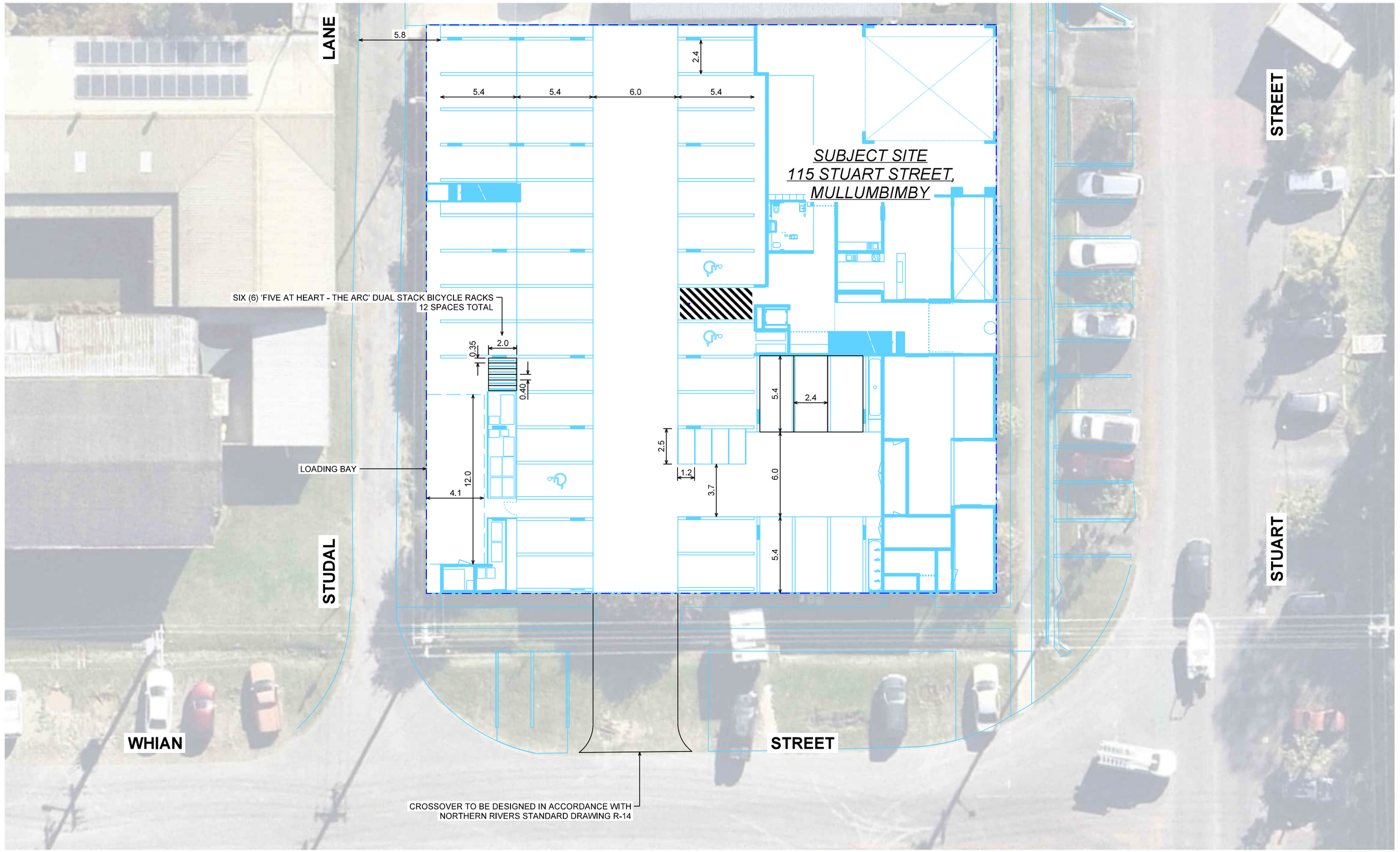
- The vehicles propped on the street are parked in such a way that does not compromise through movement.
- This activity is short term, and
- That drivers can easily move their vehicle if parked unreasonably to enable through traffic to proceed.

In this circumstance, we expect that operational impacts will be modest.

APPENDIX A
Swept Path Analysis

Design Vehicles:

- Australian Standard B85 Car
- Australian Standard B99 Car
- Medium Rigid 8.0m JS Rear Loader (Waste Collection Vehicle)



GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF KERB AND CHANNEL UNLESS NOTED OTHERWISE.
2. LOCAL ROADS - STUART STREET (SPEED ZONE 50KM/H).
   - WHIAN STREET (SPEED ZONE 50KM/H)
3. BASE INFORMATION FROM NEARMAP AERIAL PHOTOGRAPHY DATED 07.07.2025 AND HGA A2.01 GROUND FLOOR.dwg DATED 13.11.2025

14/11/2025 10:15:25 AM

CADRE

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impactaustralia.com.au

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SCALE
1:250 @ A3

Client
CADRE

Date 2025-11-14
Drawn / Approved SW / JT

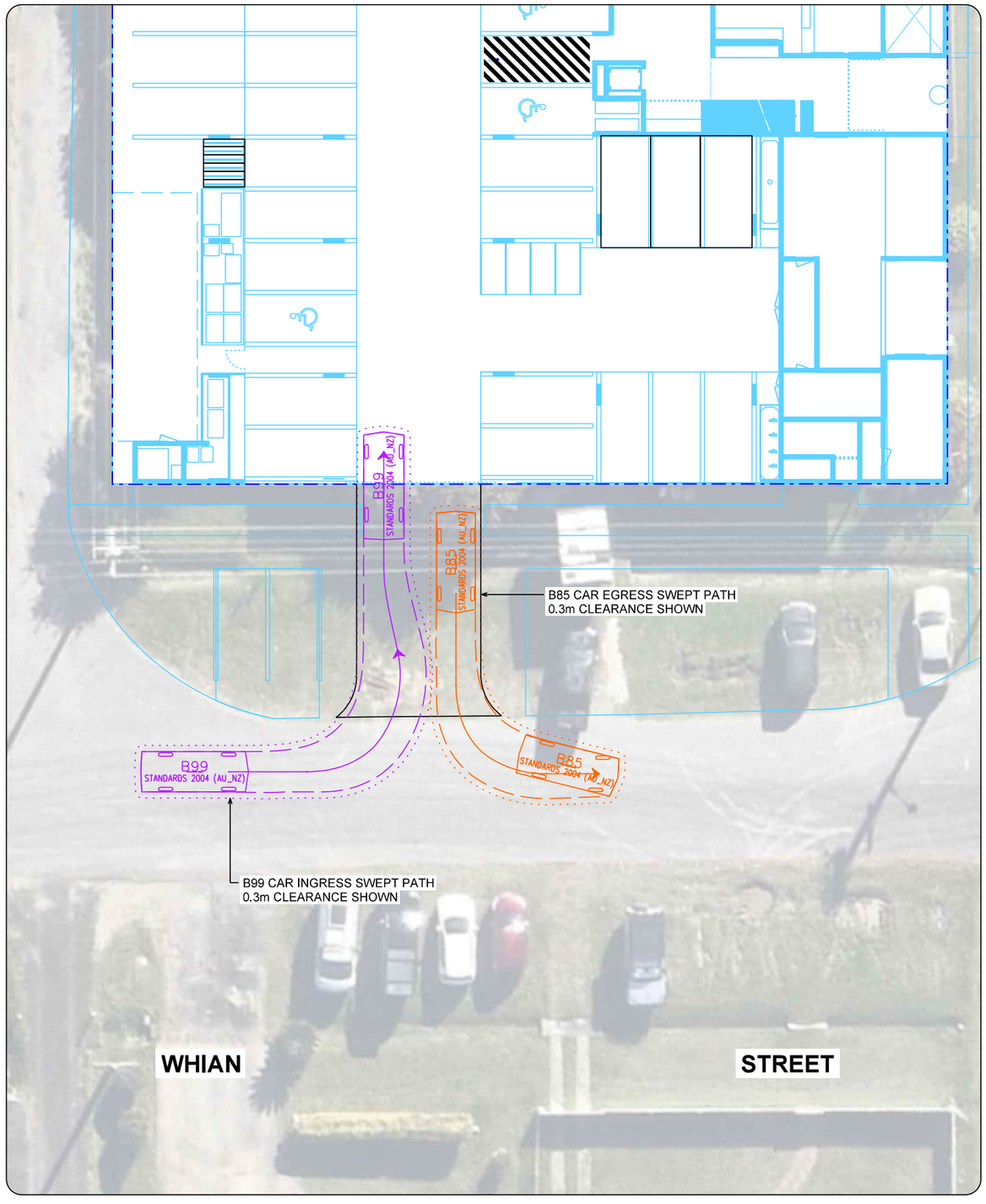
Project
THE NEST
115 STUART STREET, MULLUMBIMBY
BYRON SHIRE COUNCIL

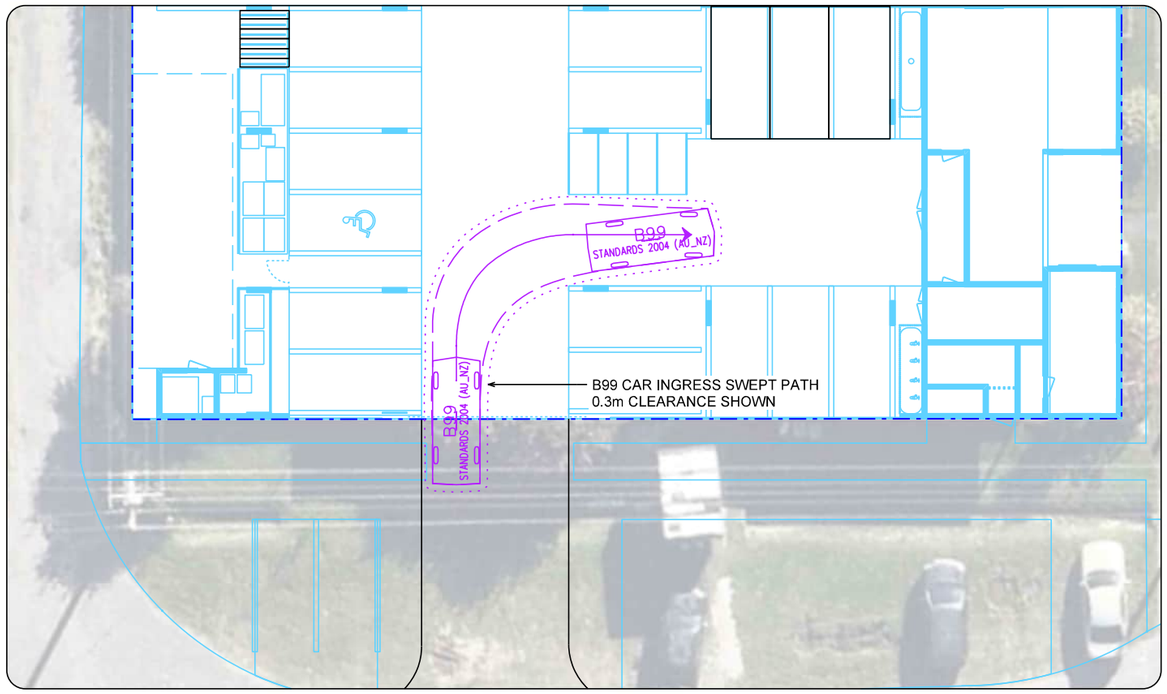
Title
TRAFFIC IMPACT ASSESSMENT
SITE LAYOUT PLAN
GROUND FLOOR

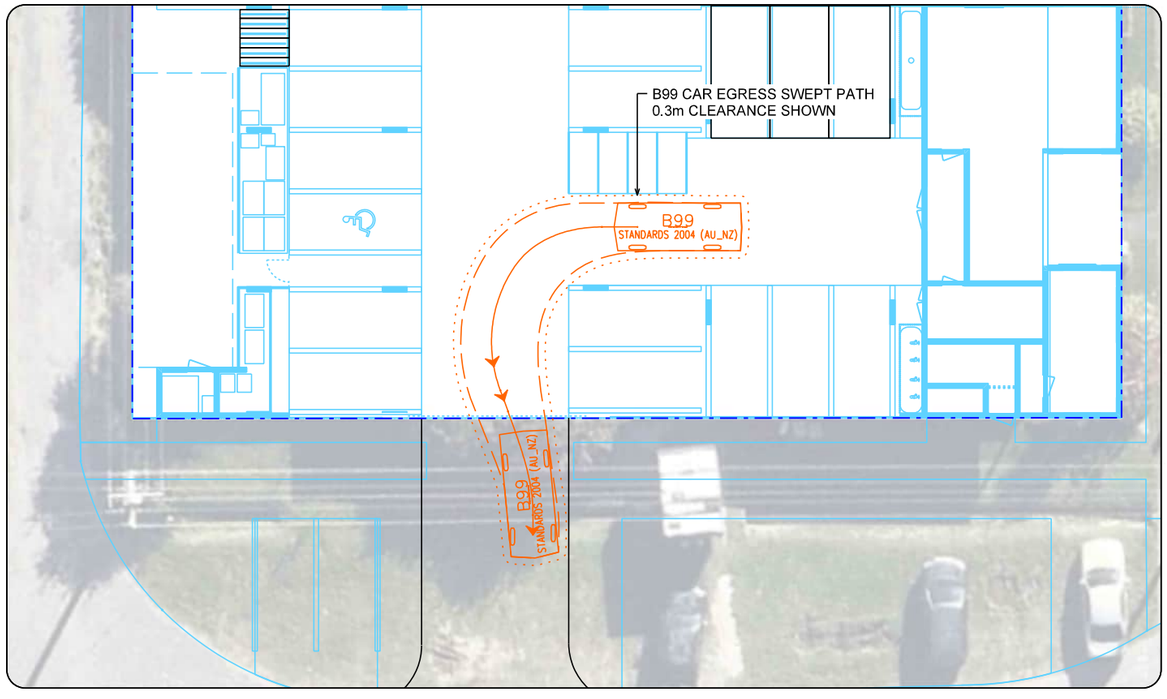
Status
PRELIMINARY

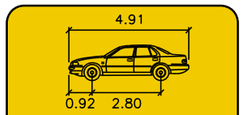
Drawing Number
IMP2505045 - DRG-01-01

Revision
G



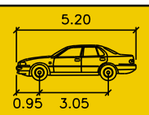






B85 CAR

	METERS
WIDTH	: 1.87
TRACK	: 1.77
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 34.1



B99 CAR

	METERS
WIDTH	: 1.94
TRACK	: 1.84
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 33.9

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Client
CADRE

Date **2025-11-14**
Drawn / Approved **SW / JT**

Project
THE NEST
115 STUART STREET, MULLUMBIMBY
BYRON SHIRE COUNCIL

Title
TRAFFIC IMPACT ASSESSMENT
SWEPT PATH ANALYSIS
B85 & B99 CAR

Status
PRELIMINARY

Drawing Number
IMP2505045 - DRG-01-02

Revision
G

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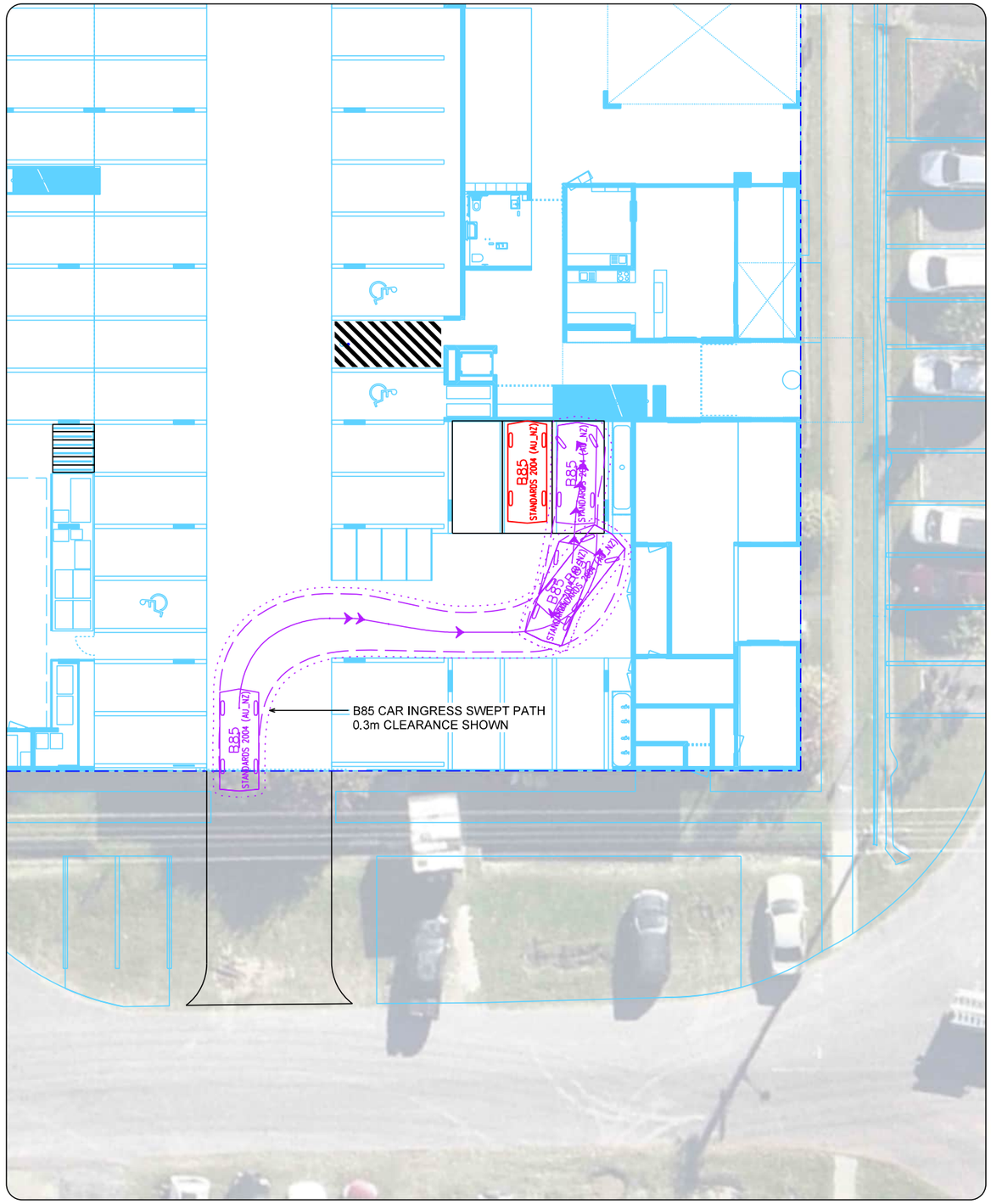

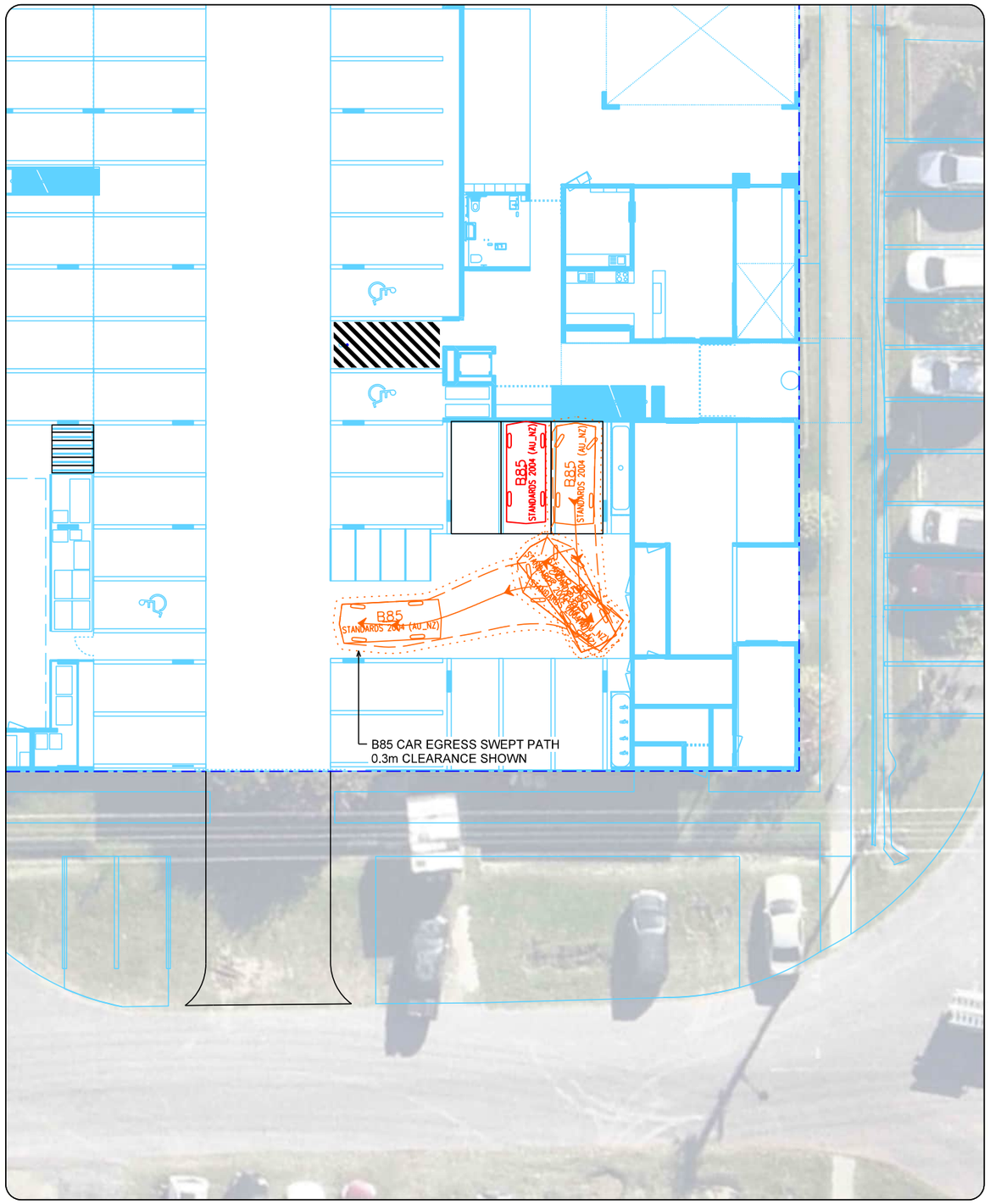

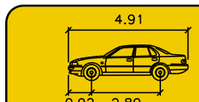

B85 CAR

	METERS
WIDTH	: 1.87
TRACK	: 1.77
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 34.1

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Client
CADRE

Date **2025-11-14**
Drawn / Approved **SW / JT**

Project
THE NEST
115 STUART STREET, MULLUMBIMBY
BYRON SHIRE COUNCIL

Title
TRAFFIC IMPACT ASSESSMENT
SWEPT PATH ANALYSIS
B85 CAR

Status
PRELIMINARY

Drawing Number
IMP2505045 - DRG-01-03

Revision
G

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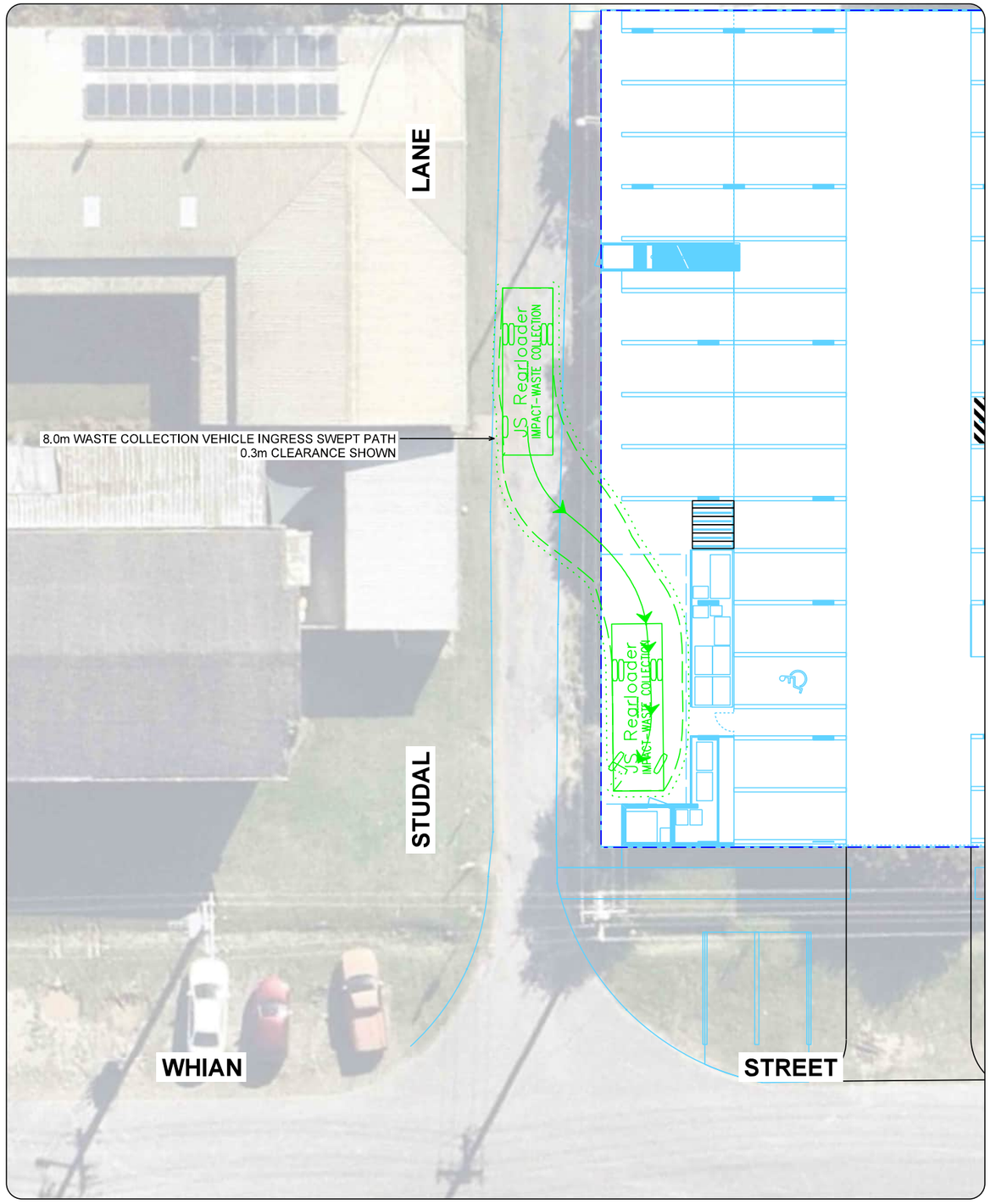

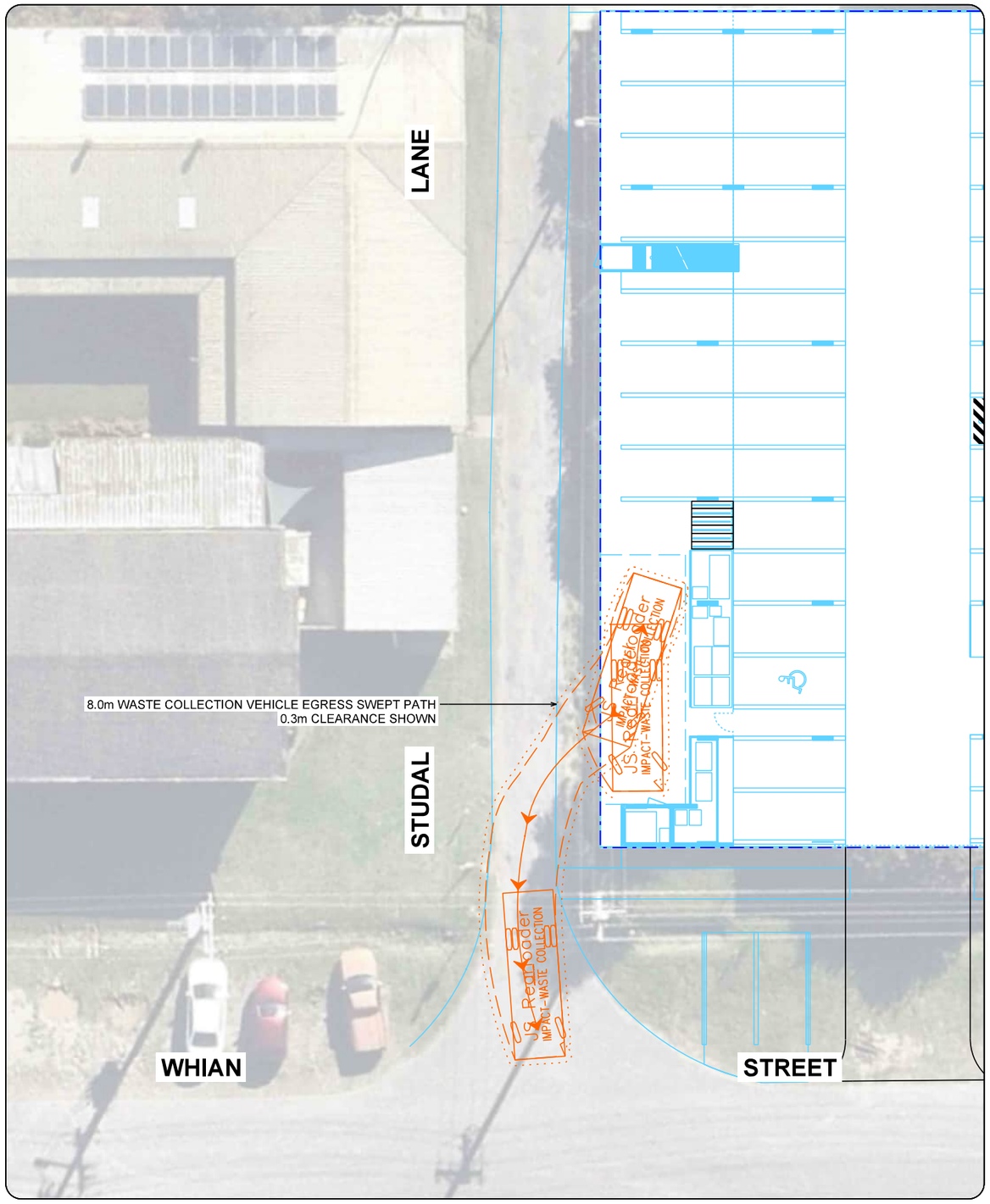

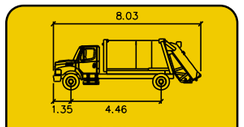

JS REARLOADER

	METERS
WIDTH	: 2.42
TRACK	: 2.42
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 32.7

CADRE

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SCALE
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Client
CADRE

Date **2025-11-14**
Drawn / Approved **SW / JT**

Project
THE NEST
115 STUART STREET, MULLUMBIMBY
BYRON SHIRE COUNCIL

Title
TRAFFIC IMPACT ASSESSMENT
SWEPT PATH ANALYSIS
8.0m WASTE COLLECTION VEHICLE

Status
PRELIMINARY

Drawing Number
IMP2505045 - DRG-01-04

Revision
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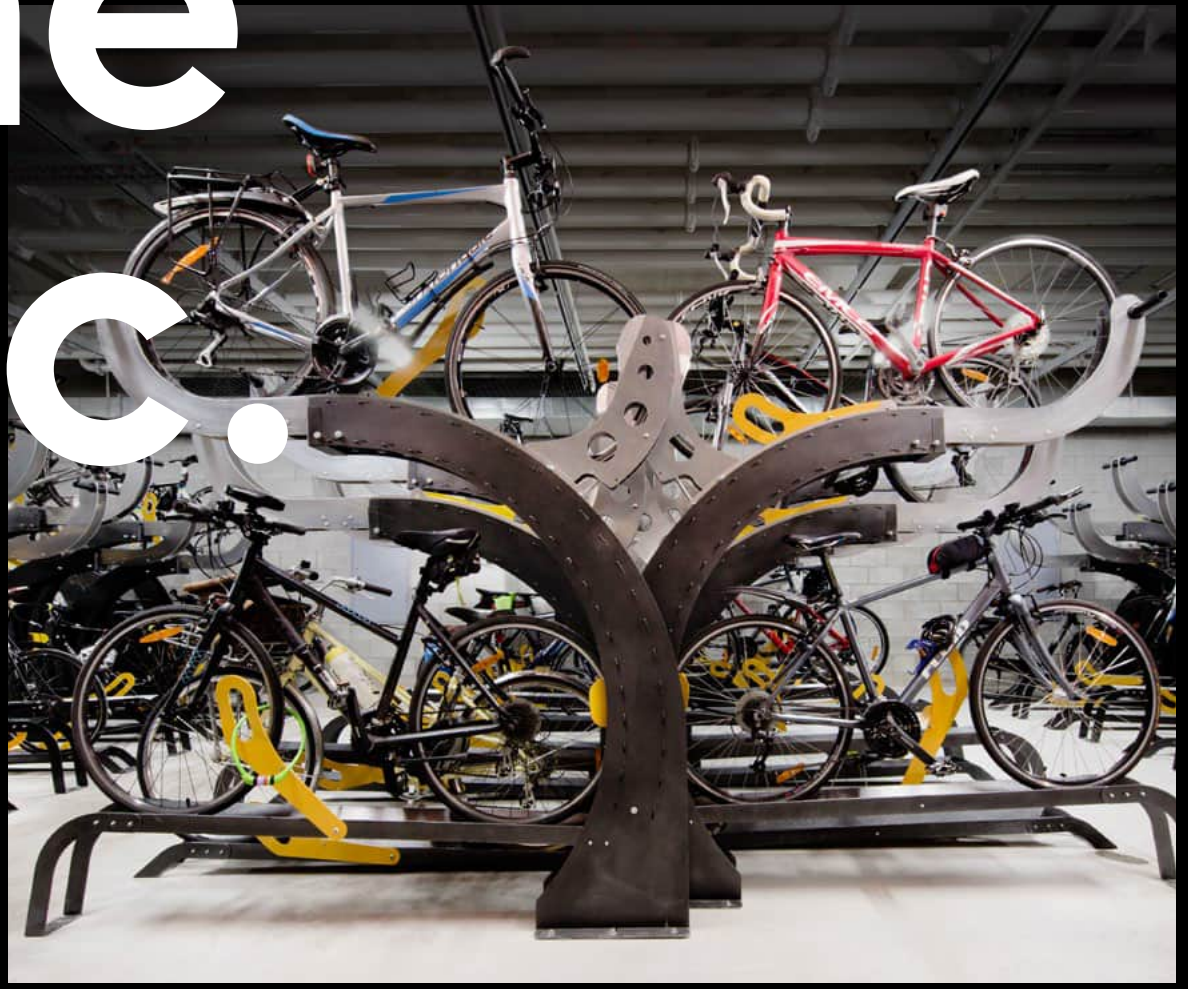
APPENDIX B
Bicycle Parking Specification Sheets

Five at heart - The Arc

The Arc.



Spec Sheet

Five At Heart

High density storage that protects your bike and your back.

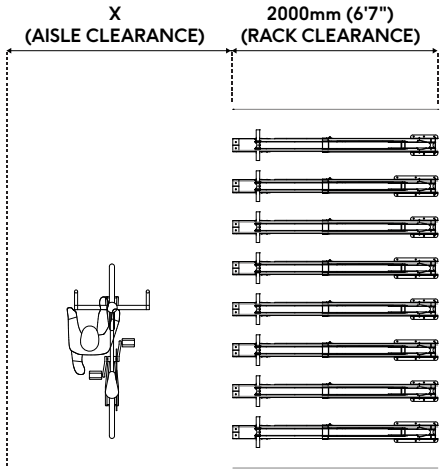
Five At Heart

Staggered.

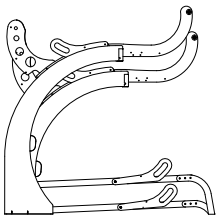
Material
Mild steel base with powder coated black Hammertone finish
Mill finish aluminium carriage
Lock Bars, handle and lower wheel catcher standard powder coat colour yellow (custom colours available, minimum order 20)

Specification	
(X) Aisle	
AUS Standard (2890.3)	2000mm (6'7")
Manufacturer Recommended	1800mm (5'11")
(Y) Centre Spacing	
AUS Standard (2890.3)	400mm (1'3.75")
Manufacturers Recommended	400mm (1'3.75")
USA, San Francisco (CA) Standard	430mm (1'4")
(Z) Ceiling Height Minimum	
AUS Standard (2890.3)	2700mm (8'10")
Manufacturer Recommended	2600mm (8'6")

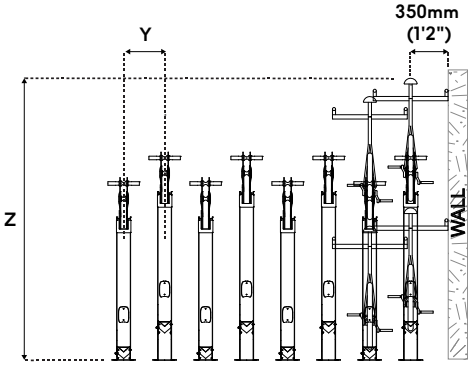
TOP VIEW



SIDE VIEW



FRONT VIEW

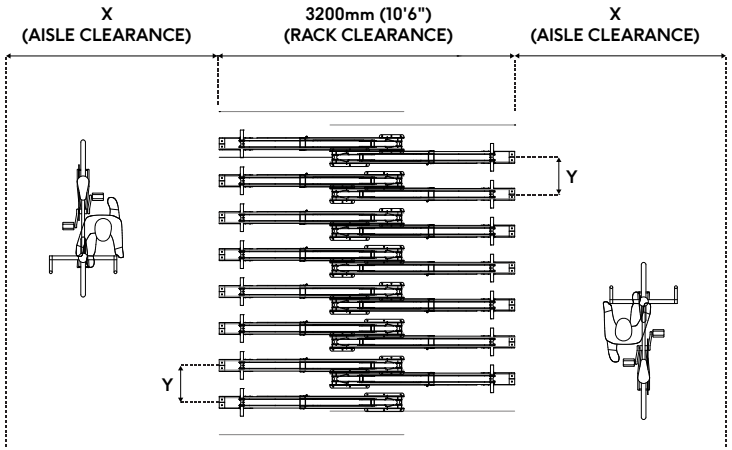


Double Sided.

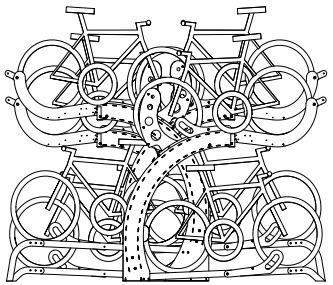
Material
Mild steel base with powder coated black Hammertone finish
Mill finish aluminium carriage
Lock Bars, handle and lower wheel catcher standard powder coat colour yellow (custom colours available, minimum order 20)

Specification	
(X) Aisle	
AUS Standard (2890.3)	2000mm (6'7")
Manufacturer Recommended	1800mm (5'11")
(Y) Centre Spacing	
AUS Standard (2890.3)	400mm (1'3.75")
Manufacturers Recommended	400mm (1'3.75")
USA, San Francisco (CA) Standard	430mm (1'4")
(Z) Ceiling Height Minimum	
AUS Standard (2890.3)	2700mm (8'10")
Manufacturer Recommended	2600mm (8'6")

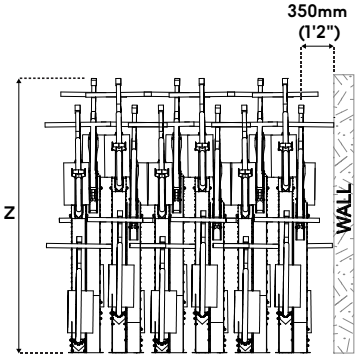
TOP VIEW



SIDE VIEW



FRONT VIEW

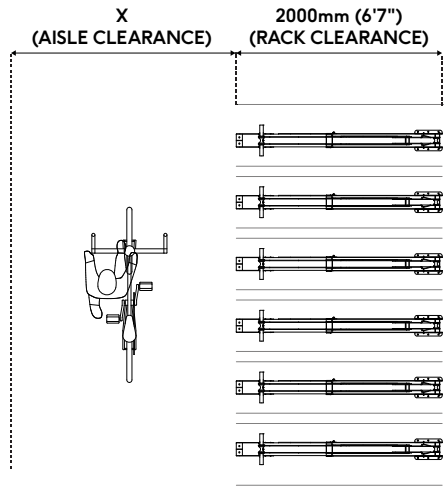


Single Level.

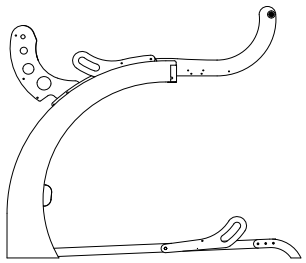
Material
Mild steel base with powder coated black Hammertone finish
Mill finish aluminium carriage
Lock Bars, handle and lower wheel catcher standard powder coat colour yellow (custom colours available, minimum order 20)

Specification	
(X) Aisle	
AUS Standard (2890.3)	2000mm (6'7")
Manufacturer Recommended	1800mm (5'11")
(Z) Ceiling Height Minimum	
Manufacturer Recommended	2400 (7'11")
(Y) Centre Spacing	
AUS Standard (2890.3)	700mm (2'4")
Manufacturer Recommended	600mm (2')

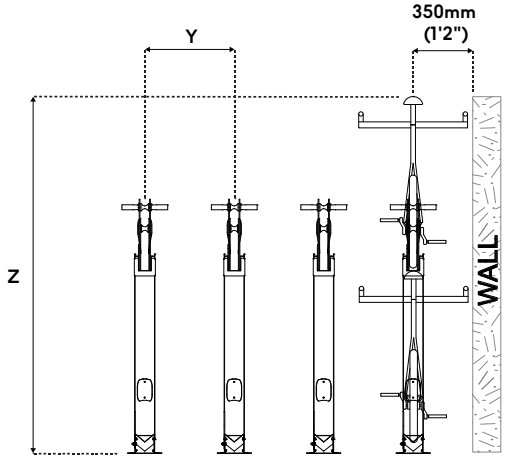
TOP VIEW



SIDE VIEW



FRONT VIEW



Arc Warranty and Technical Data

Warranty Information

Five At Heart products come with a standard 2 year warranty, effective from the handover date.

For the warranty period, we warrant that the equipment (and any materials) we supply will comply with the relevant standards at the date of installation.

This warranty is limited and may be excluded in part or in full in light of user damage or failure to install to Five At Heart specification.

We recommend a monthly visual inspection for signs of damage or need for cleaning.

Contact Five At Heart in the event of product damage.

Fixing options / and detail

Fig 1/ M10/50mm galvanised sleeve anchor

Product Weight

Low – 46kg
High – 53kg

Substrate Requirements

- Concrete – 100mm thick and in good condition

Maintenance Requirements

Slide unit bearings are sealed and do not require on going maintenance.

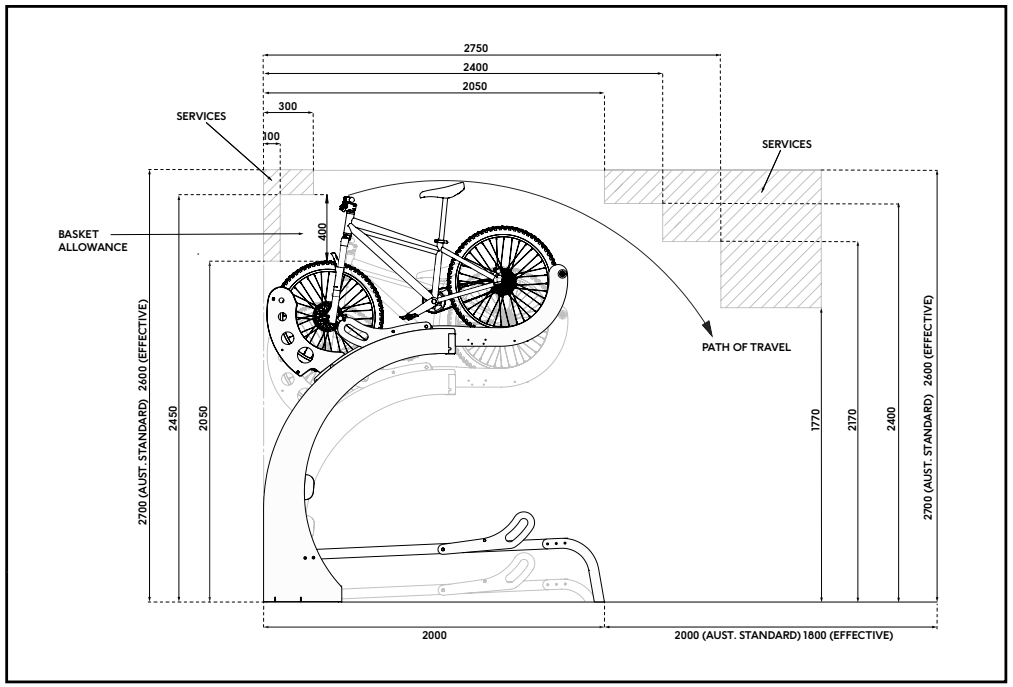
If any moving parts appear to be malfunctioning, discontinue use and contact Five At Heart.

Cleaning

Cleaning should start at the time the products are installed, ensuring that construction materials such as concrete, plaster and paint splashes are removed before they have a chance to dry. Failure to remove these materials will require aggressive cleaning in the future, that may be harmful to the products.

Wipe with a damp cloth for surface cleaning. Regular cleaning may be done with a solution of warm water and a non-abrasive, pH neutral detergent solution. Surfaces should be thoroughly rinsed after cleaning to remove all residues.

WARNING: DO NOT UNDER ANY CIRCUMSTANCES USE STRONG SOLVENTS SUCH AS THINNERS OR SOLUTIONS CONTAINING CHLORINATED HYDROCARBONS, ESTERS OR KETONES. ABRASIVE CLEANERS OR CUTTING COMPOUNDS SHOULD NOT BE USED.



Arc clearance map – Staggered unit

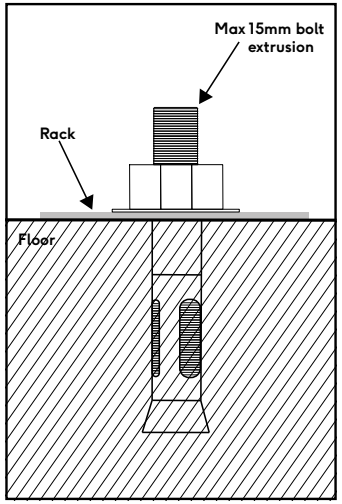


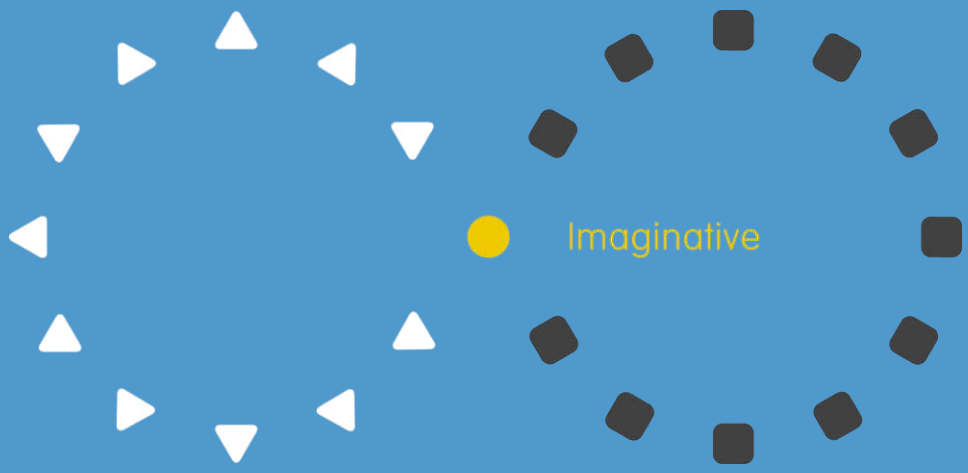
Fig 1/ M10/50mm galvanised sleeve anchor

Five At Heart

Creating spaces for however you Roll...

fiveatheart.com

Australia 1300 769 332 or au_info@fiveatheart.com
North America 1888 218 3433 or na_info@fiveatheart.com
Europe (+44) 7565 357342 or eu_info@fiveatheart.com


Imaginative