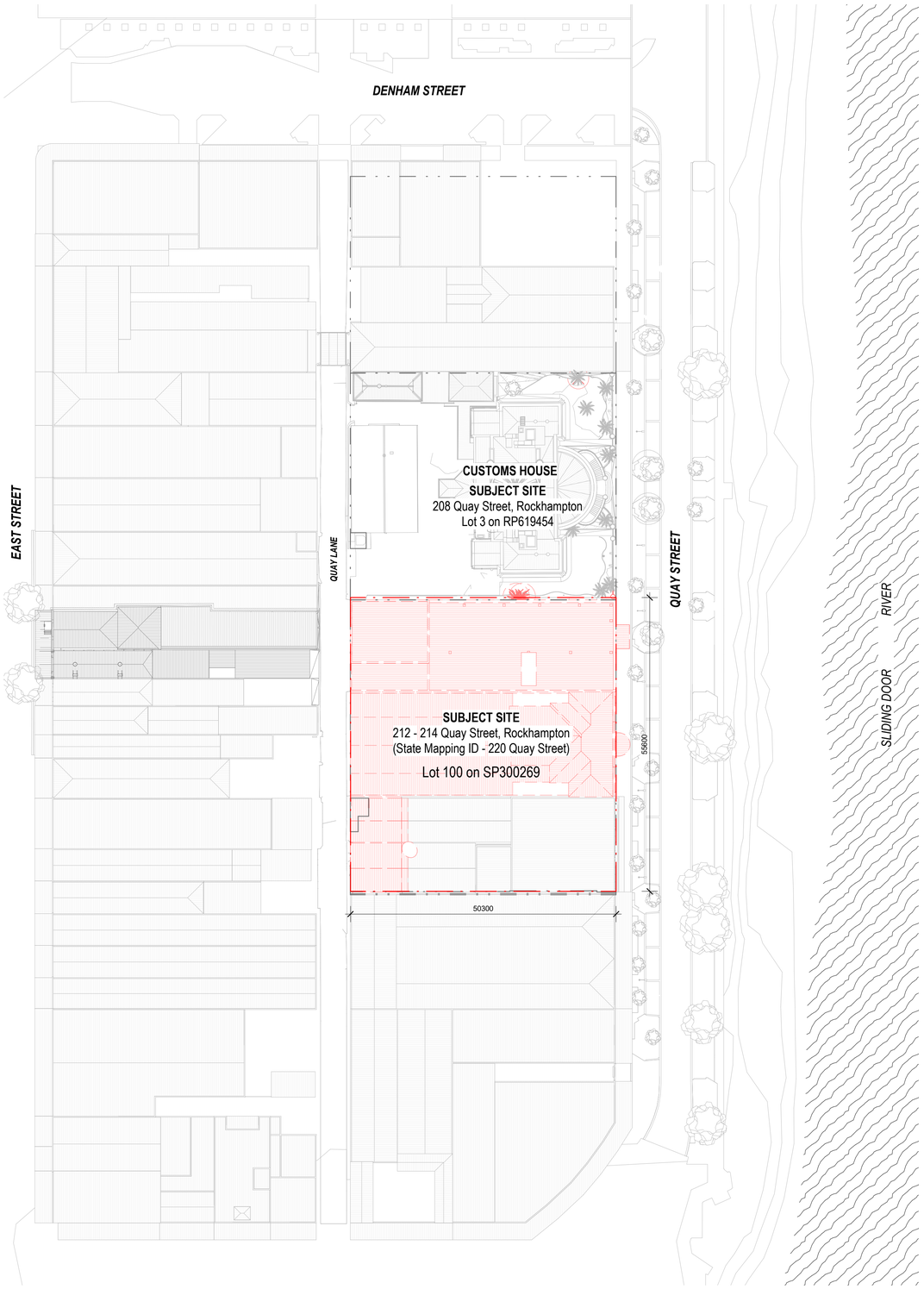
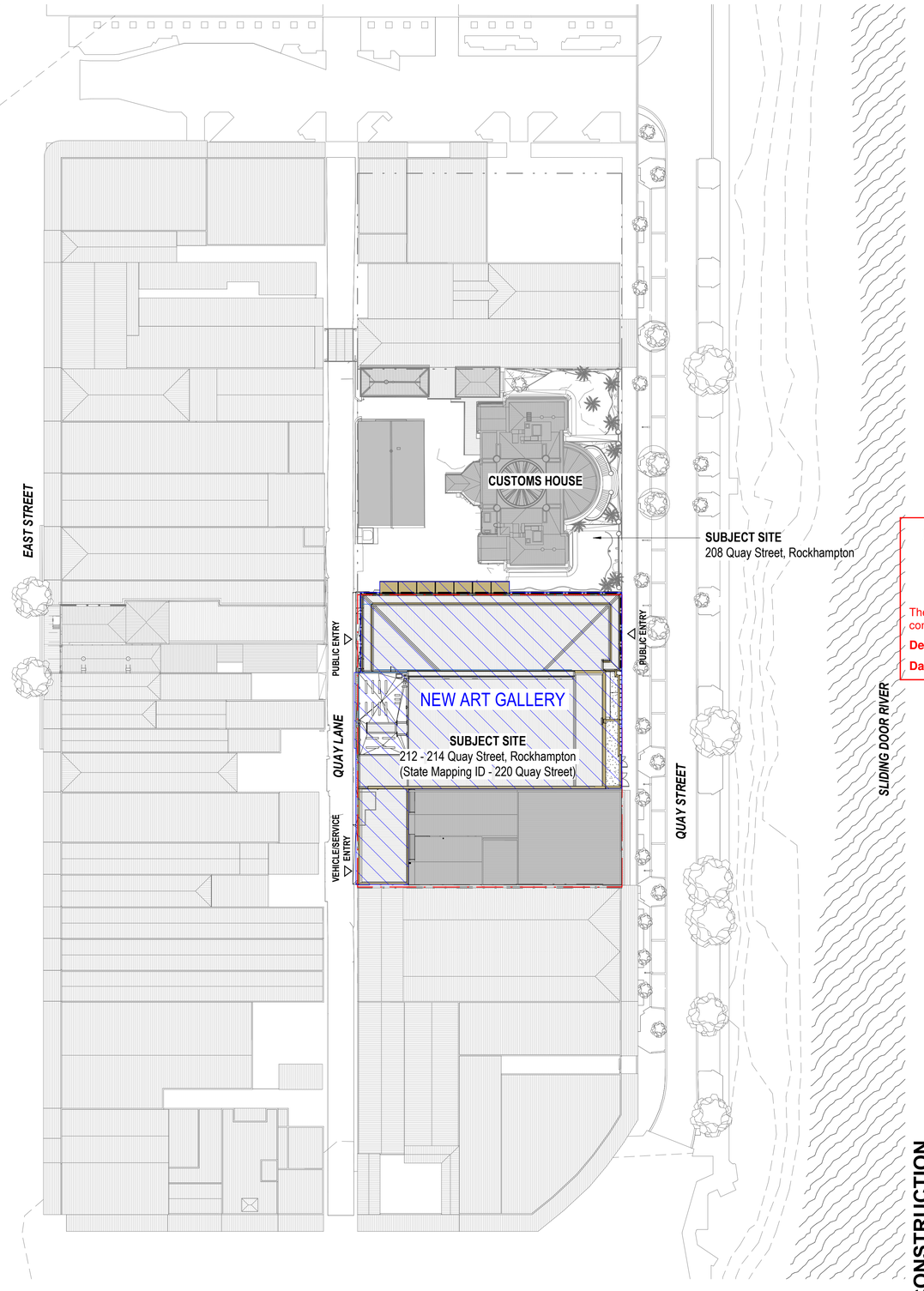


1 Existing and Demolition Site Plan
1 : 500



2 Proposed Site Plan
1 : 500

Conrad Gargett
clare design
brian hooper architect

LEGEND

- SITE BOUNDARY
- PROPOSED NEW DEVELOPMENT
- EXISTING BUILDING TO BE RETAINED
- BUILDING ENTRY LOCATION

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
04 June 2020
DATE
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/64-2018
Dated: 07 February 2018

REV	DESCRIPTION	DATE	APPD
D	DA Amendment	19/03/20	LB
C	DA Lodgement	19/06/18	DO
B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development - Art Gallery

Drawing
DA Existing & Proposed Site Plans

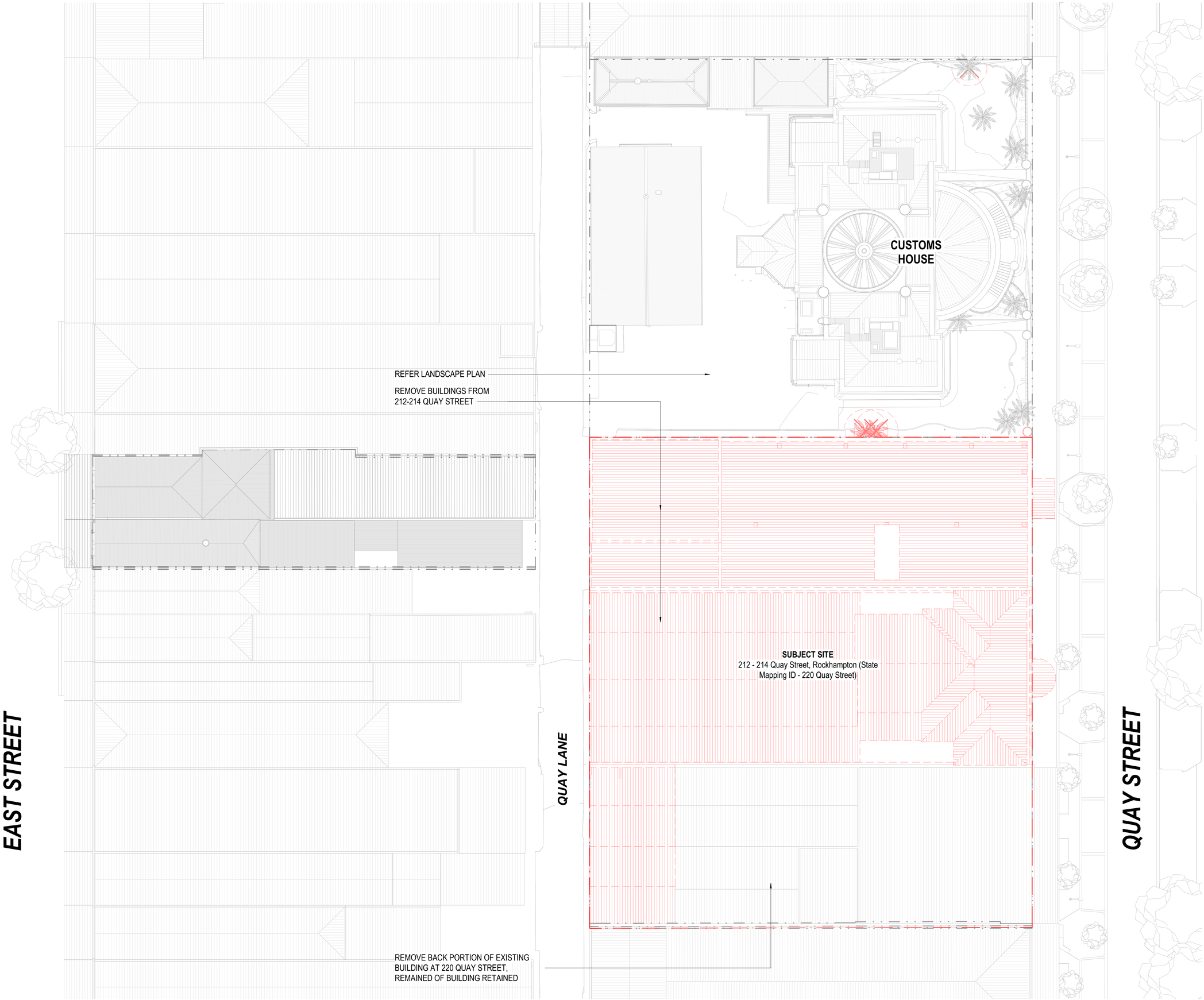
CONSTRUCTION

A1 Scale As indicated
Project 17090
Issue D

Drawing CD - AR-A-DA 104

Details

10 0 10 20 30 40 50
SCALE 1:1 @ A1 mm



Conrad Gargett
clare design
brian hooper architect

LEGEND

TO BE DEMOLISHED

BOUNDARY LINE

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client

Rockhampton Regional Council

Project

Quay St Cultural Precinct Development

Drawing

DA Demolition Plan

PRELIMINARY

A1 Scale As indicated

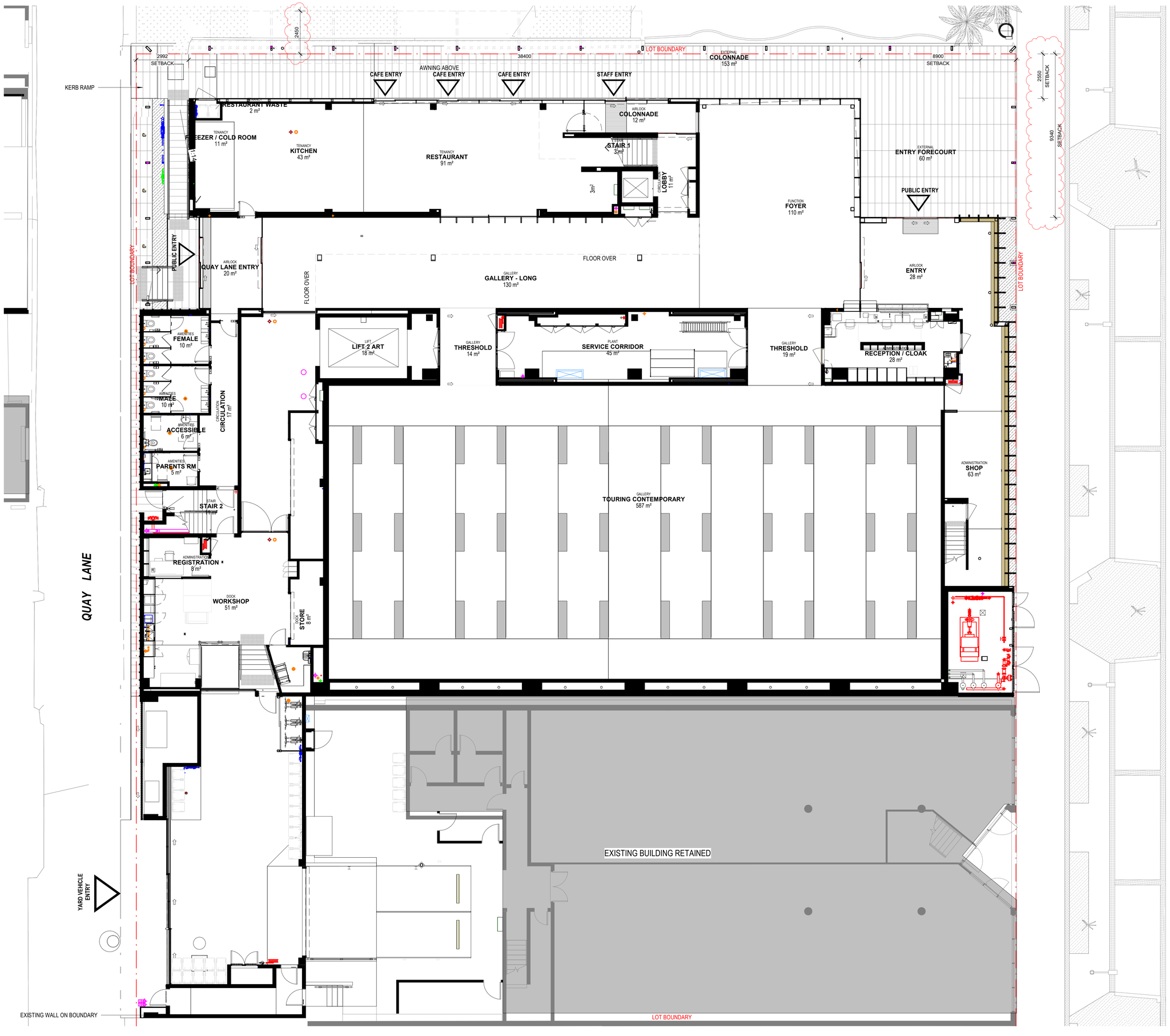
Project 17090

Issue C

Drawing DD - AR-A-DA201

Details

0 mm 40 80



Conrad Gargett

clare design

brian hooper architect

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

04 June 2020

DATE

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Development Permit No.: D/64-2018

Dated: 07 February 2018

SUBJECT SITE

212 - 214 Quay Street, Rockhampton (State Mapping ID - 220 Quay Street)

REV	DESCRIPTION	DATE	APPD
D	DA Amendment	19/03/20	LB
C	DA Lodgement	19/06/18	DO
B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client

Rockhampton Regional Council

Project

Quay St Cultural Precinct Development - Art Gallery

Drawing

DA Gallery Level G - Plan

CONSTRUCTION

A1 Scale 1 : 100

Project 17090

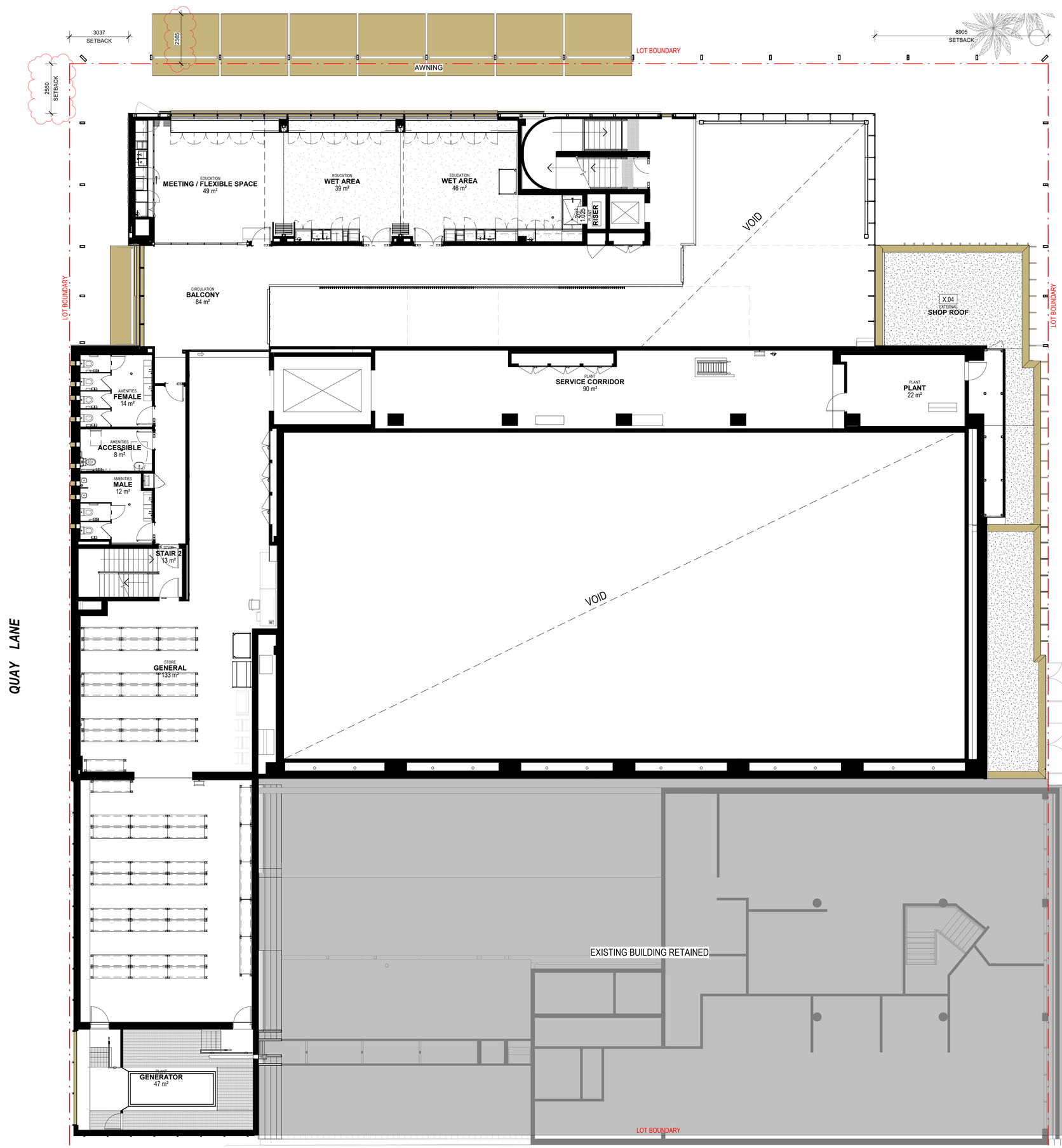
Issue D

Drawing CD - AR-A-DA 202

Details

10 0 10 20 30 40 50

SCALE 1:1 @ A1 mm



Conrad Gargett
clare design
brian hooper architect

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Rockhampton (State Mapping ID - 220 Quay Street)

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B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development - Art Gallery

Drawing
DA Gallery Level 01 - Plan

CONSTRUCTION

A1 Scale 1 : 100
Project 17090
Issue D

Drawing CD - AR-A-DA 203

Details

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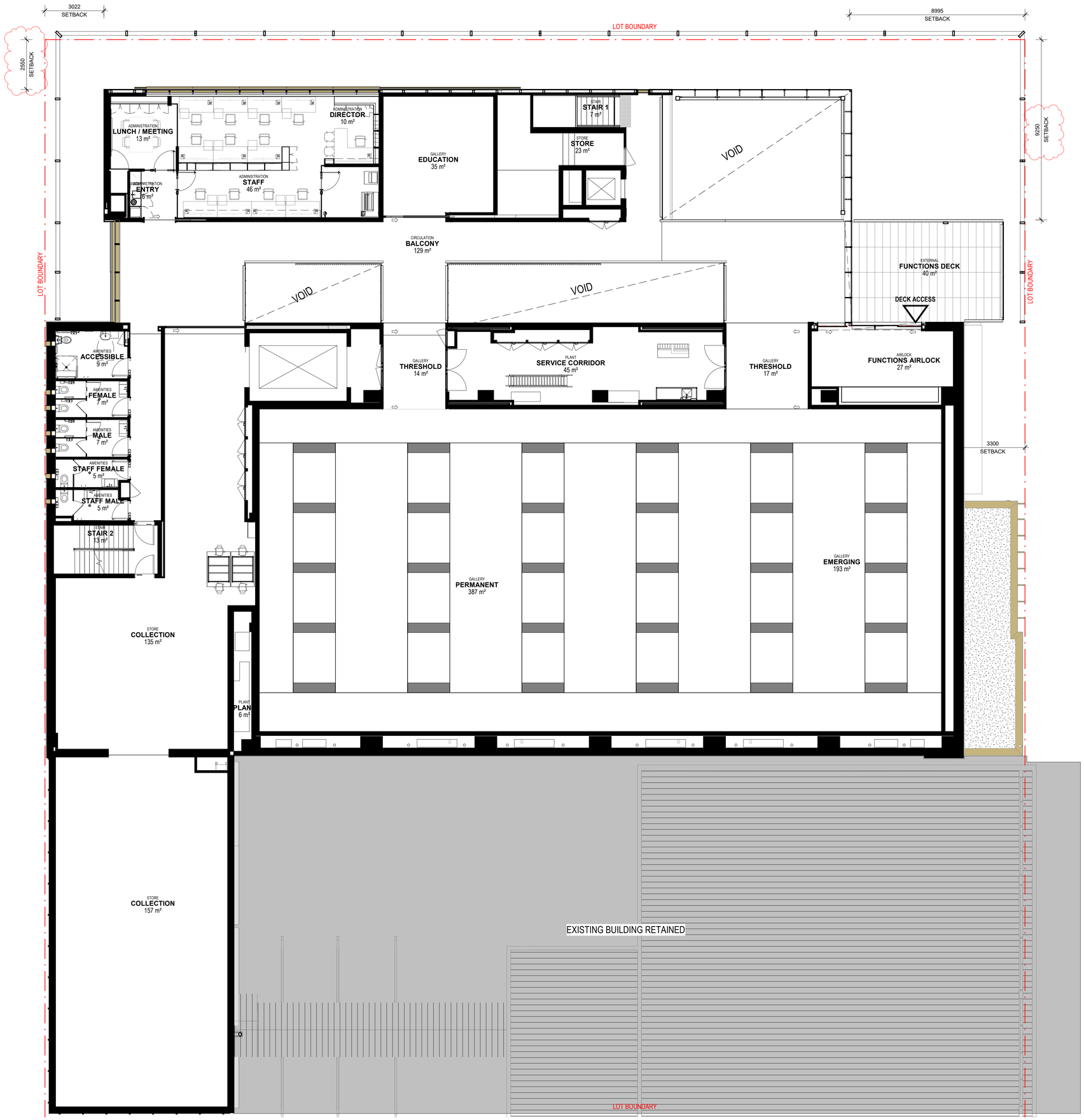
SCALE 1:1 @ A1 mm



Conrad Gargett
clare design
brian hooper architect

ROCKHAMPTON REGIONAL COUNCIL

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B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development - Art Gallery

Site Details
212 - 214 Quay Street, Rockhampton (State Mapping ID - 220 Quay Street)

Drawing
DA Gallery Level 02 - Plan

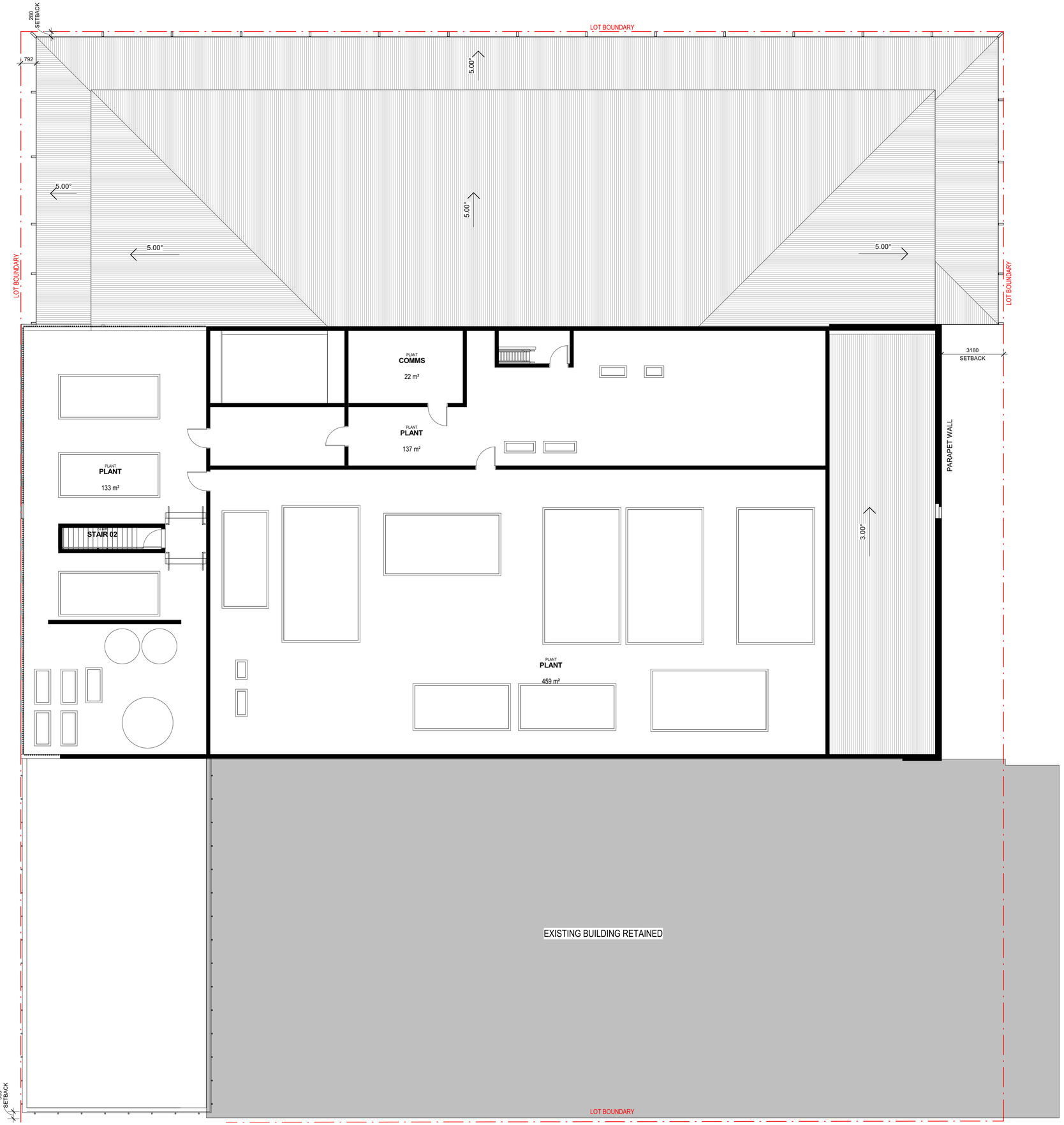
PRELIMINARY

A1 Scale 1 : 100
Project 17090
Issue D

Drawing CD - AR-A-DA 204

Details

0 mm 40 80



Conrad Gargett
clare design
brian hooper architect

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
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Development Permit No.: D/64-2018
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SUBJECT SITE
212 - 214 Quay Street,
Rockhampton (State Mapping ID - 220 Quay Street)

REV	DESCRIPTION	DATE	APPD
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B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development

Drawing
DA Gallery Level 03 (Plant) - Plan

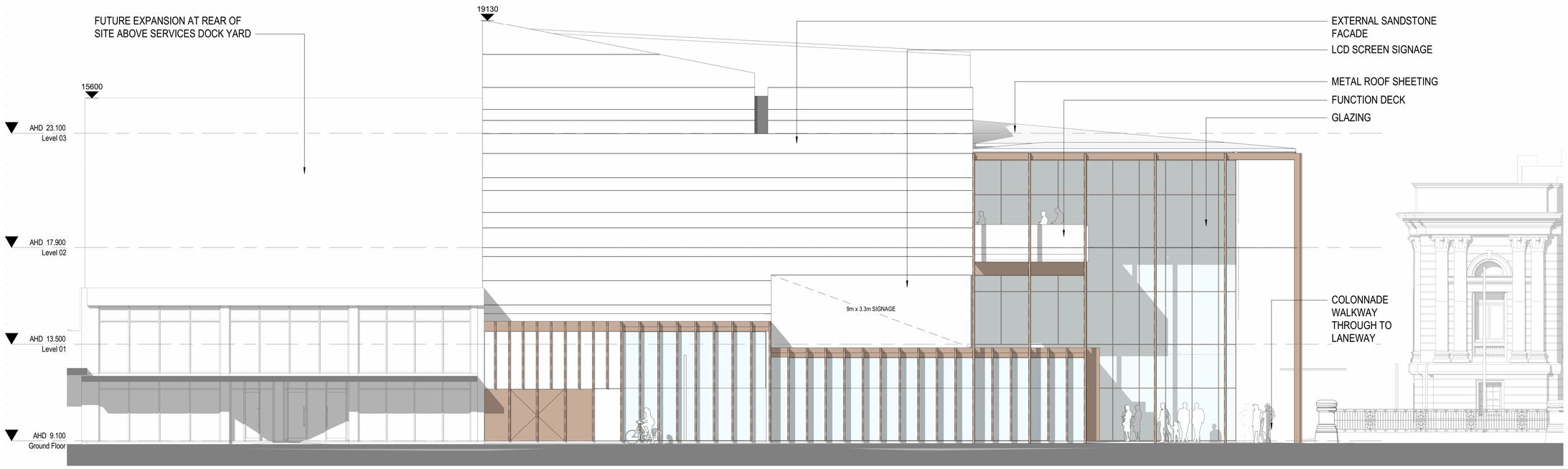
PRELIMINARY

A1 Scale 1 : 100
Project 17090
Issue C

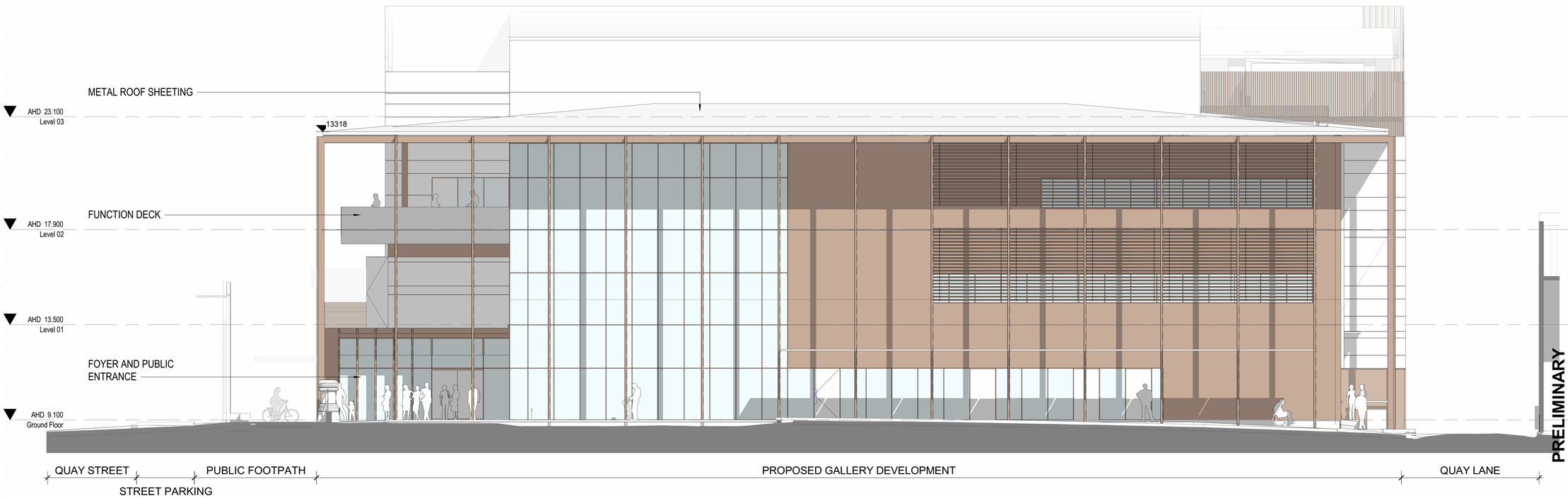
Drawing DD - AR-A-DA205

Details

0 mm 40 80



1 East Elevation
1 : 100



2 North Elevation
1 : 100

Conrad Gargett
clare design
brian hooper architect

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
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Development Permit No.: D/64-2018
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SUBJECT SITE
212 - 214 Quay Street, Rockhampton (State Mapping ID - 220 Quay Street)

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B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development

Drawing
DA Elevations

A1 Scale 1 : 100
Project 17090
Issue C

Drawing DD - AR-A-DA301

PRELIMINARY

Details

0 mm 40 80

ROCKHAMPTON REGIONAL COUNCIL

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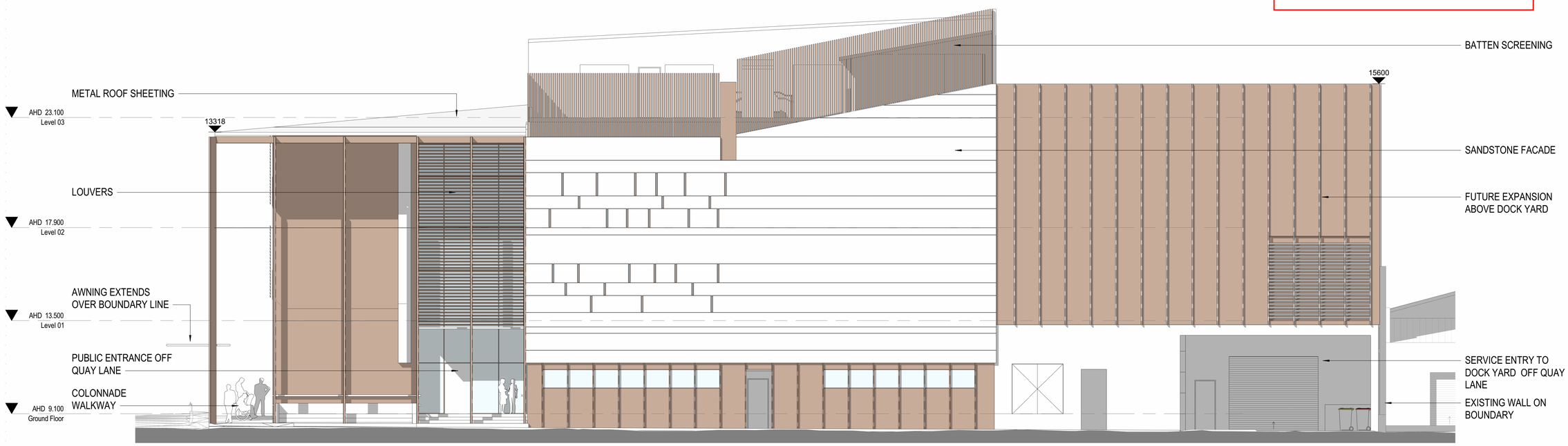
Development Permit No.: D/64-2018

Dated: 07 February 2019

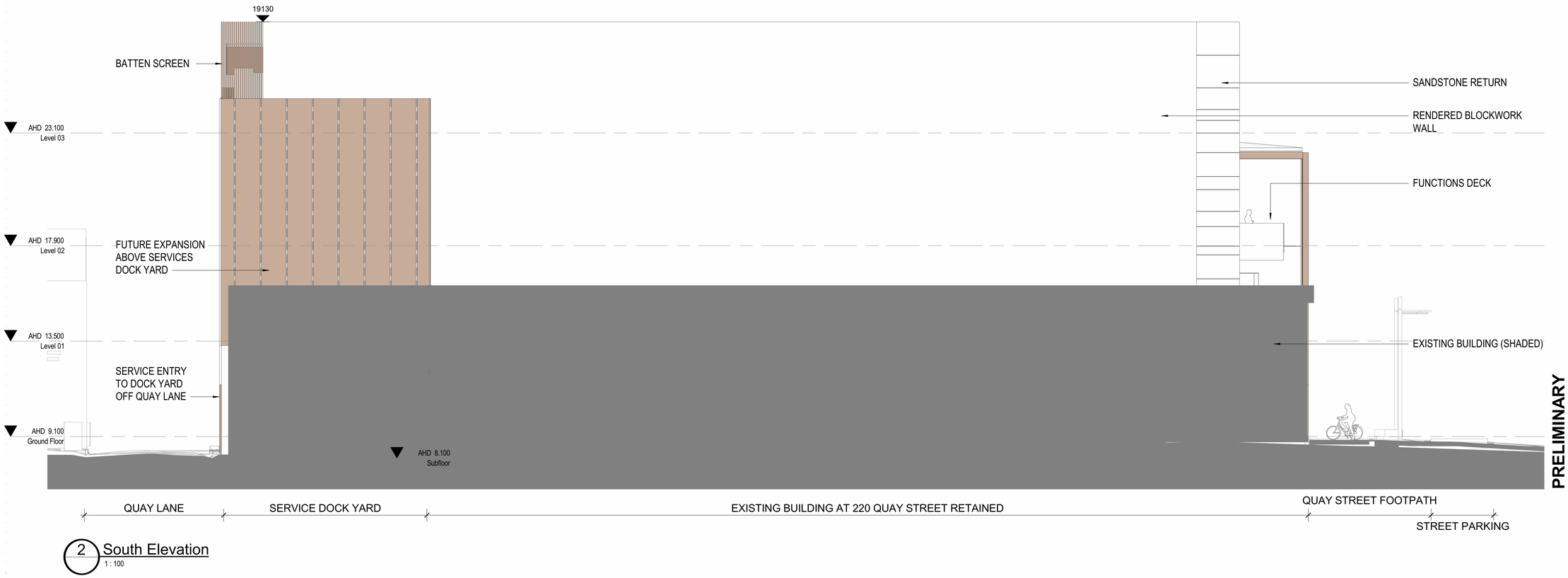
Conrad Gargett

clare design

brian hooper architect



1 West Elevation
1 : 100



2 South Elevation
1 : 100

SUBJECT SITE

212 - 214 Quay Street, Rockhampton (State Mapping ID - 220 Quay Street)

REV	DESCRIPTION	DATE	APPD
C	DA Lodgement	19/06/18	DO
B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Rockhampton Regional Council

Client

Rockhampton Regional Council

Project

Quay St Cultural Precinct Development

Drawing

DA Elevations

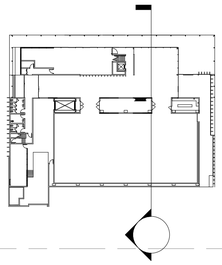
PRELIMINARY

A1 Scale 1 : 100
Project 17090
Issue C

Drawing DD - AR-A-DA302

Details

0 mm 40 80



FUTURE EXPANSION AT REAR OF SITE ABOVE SERVICES DOCK YARD

EXISTING BUILDING TO BE RETAINED

15600

19130

AHD 23.100 Level 03

AHD 17.900 Level 02

AHD 13.500 Level 01

AHD 9.100 Ground Floor

PLANT
PLANT
459 m²

PLANT
PLANT
137 m²

GALLERY
EMERGING GALLERY
189 m²

2.02
CIRCULATION
CIRCULATION

PLANT
SERVICE CORRIDOR
89 m²

GALLERY
TOURING CONTEMPORARY
587 m²

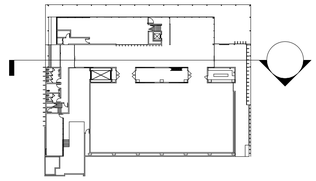
FUNCTION
FOYER
125 m²

EXTERNAL
COLONNADE
154 m²

CUSTOMS HOUSE

EXISTING BUILDING RETAINED WITH FUTURE EXPANSION AT REAR | PROPOSED GALLERY DEVELOPMENT | COLONNADE | CUSTOMS HOUSE SITE

1 Section 01
1 : 100



19130

13100

AHD 23.100 Level 03

AHD 17.900 Level 02

AHD 13.500 Level 01

AHD 9.100 Ground Floor

2.04
FUNCTION
DECK

G.02
ADMINISTRATION
SHOP

G.09
FUNCTION
FOYER

1.02
CIRCULATION
BALCONY

AIRLOCK
AIRLOCK - QUAY LANE
19 m²

X.03
EXTERNAL
QUAY LANE ENTRY

QUAY ST FOOTPATH | PROPOSED GALLERY DEVELOPMENT | QUAY LANE

STREET PARKING

2 Section 02
1 : 100

PRELIMINARY

SUBJECT SITE
212 - 214 Quay Street, Rockhampton (State Mapping ID - 220 Quay Street)

REV	DESCRIPTION	DATE	APPD
C	DA Lodgement	19/06/18	DO
B	90% DA	08/06/18	
A	PRELIMINARY ISSUE	22/05/18	

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development

Drawing
DA Sections

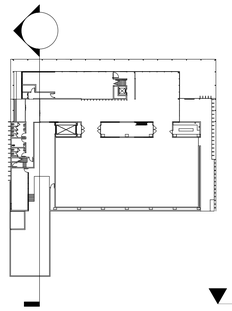
A1 Scale 1 : 100
Project 17090
Issue C

Drawing DD - AR-A-DA351

Details

0 mm 40 80

Conrad Gargett
clare design
brian hooper architect



ROCKHAMPTON REGIONAL COUNCIL

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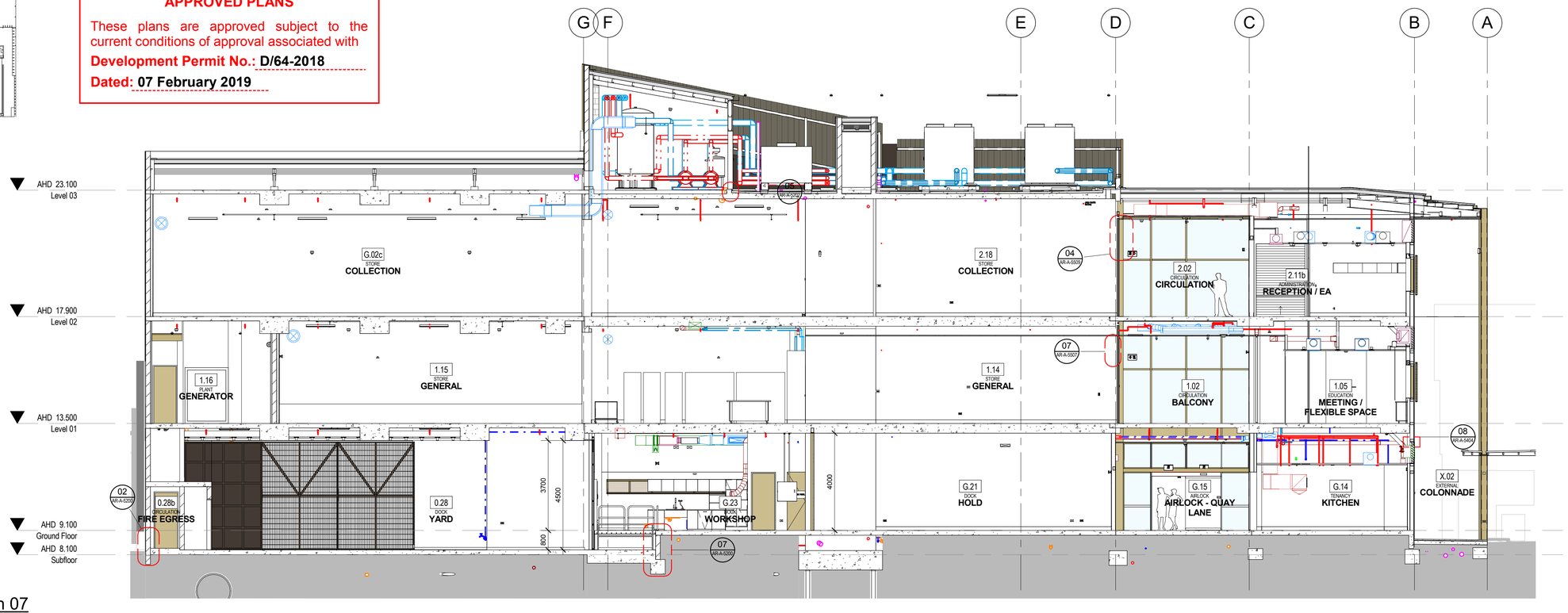
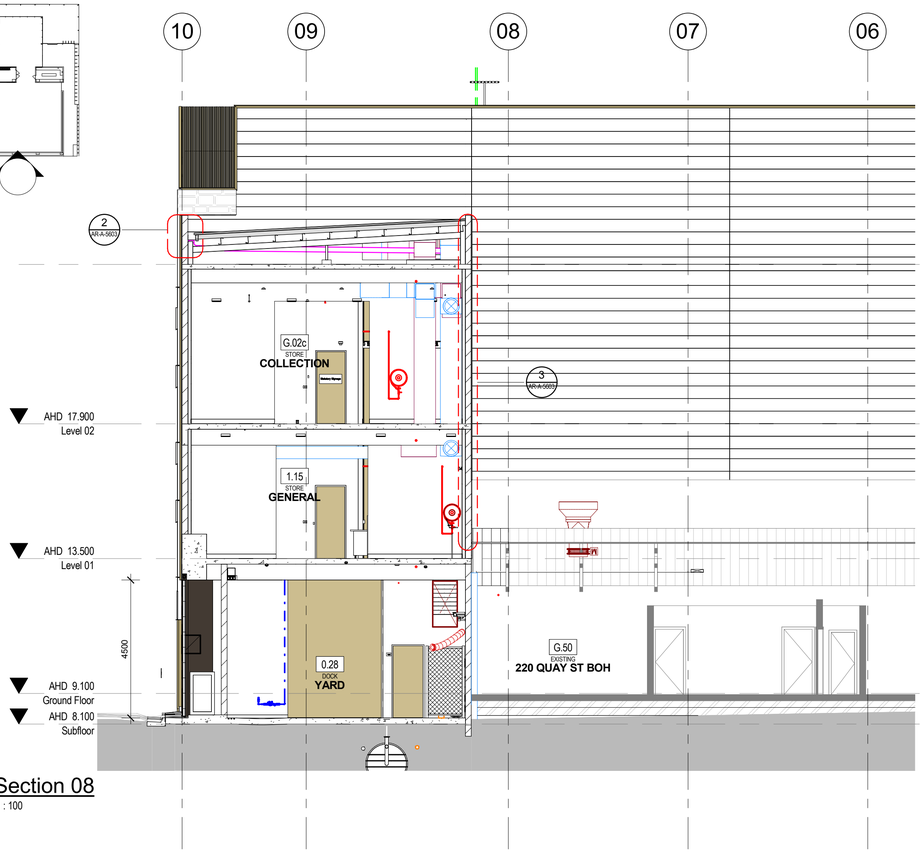
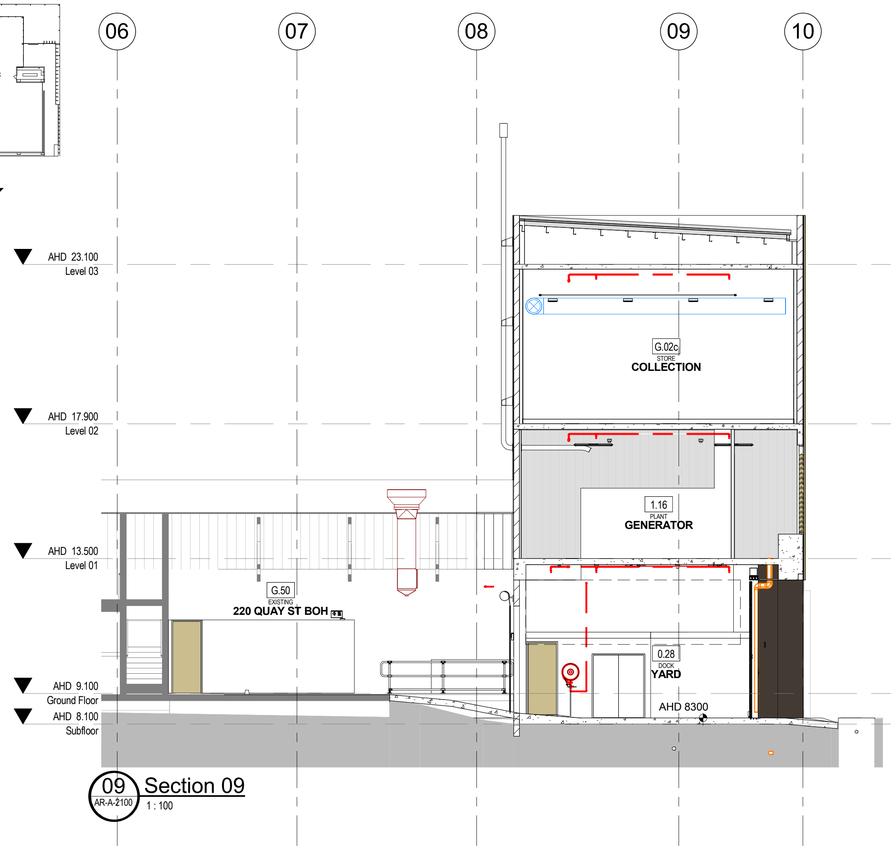
Dated: 07 February 2019



07 AR-A-2100 Section 07
1 : 100



08 AR-A-2100 Section 08
1 : 100



09 AR-A-2100 Section 09
1 : 100

REV	DESCRIPTION	DATE	APPD
K	QS ISSUE	07/01/19	
J	90%CD	01/11/18	
I	75% CD	09/11/18	
H	COORDINATION ISSUE	12/10/18	
G	DD ISSUE	29/08/18	
F	COORDINATION ISSUE	20/08/18	
E	COORDINATION ISSUE	03/08/18	

Conrad Gargett
clare design
brian hooper architect

Rockhampton Regional Council

Client
Rockhampton Regional Council

Project
Quay St Cultural Precinct Development - Art Gallery

Drawing
Sections 07-09

PRELIMINARY

A1 Scale 1 : 100
Project 17090
Issue K

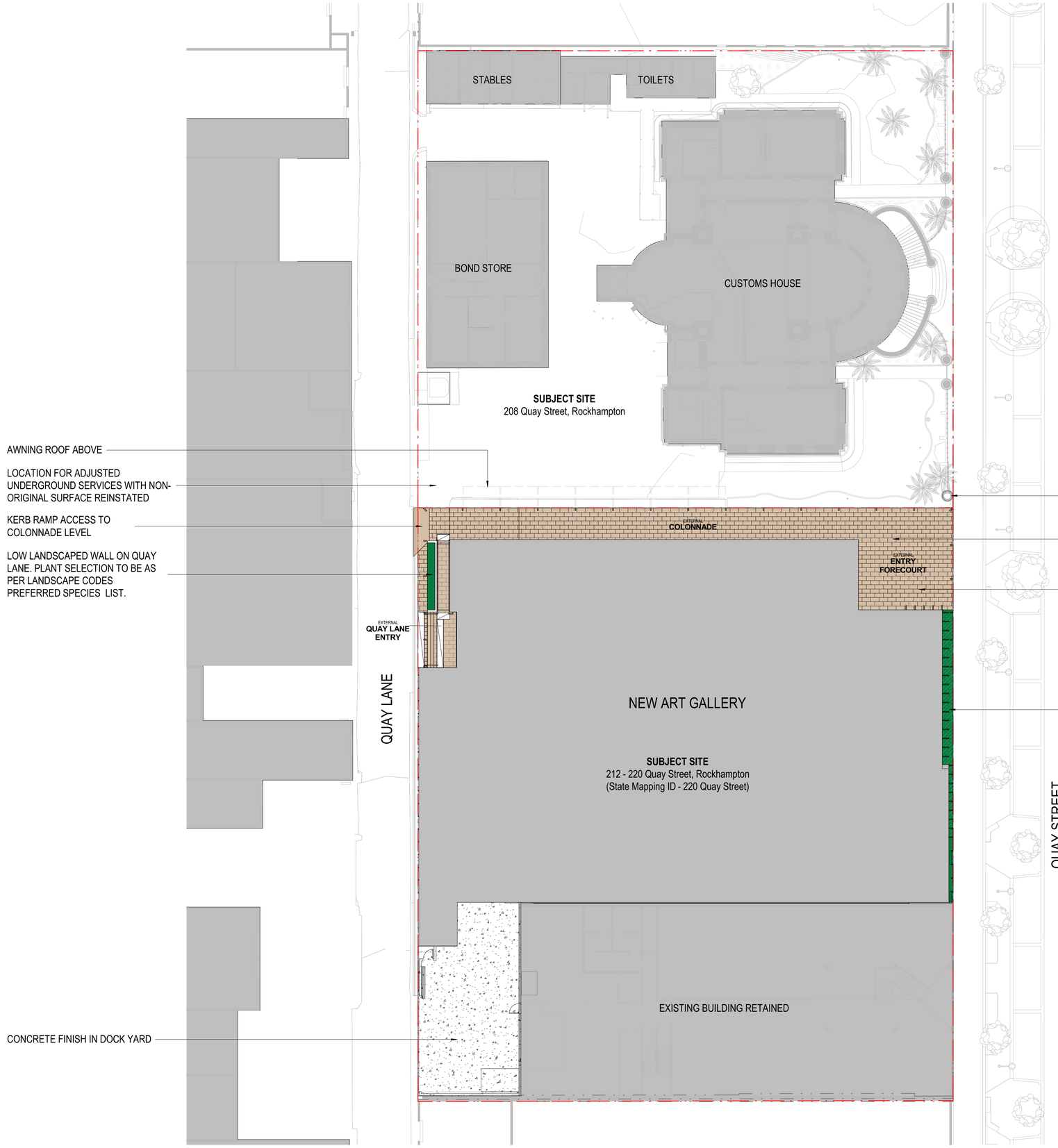
Drawing CD - AR-A-3504

Details

1 0 1 2 3 4 5
SCALE 1:100 @ A1 m

LEGEND

- BUILDING
- NATURAL STONE PAVING
- SOFTSCAPE PLANTING
- CONCRETE
- TACTILE GROUND SURFACE INDICATOR



Conrad Gargett
clare design
brian hooper architect

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Rockhampton Regional Council

Client

Rockhampton Regional Council

Project

Quay St Cultural Precinct Development

Drawing

DA Proposed Landscape Plan

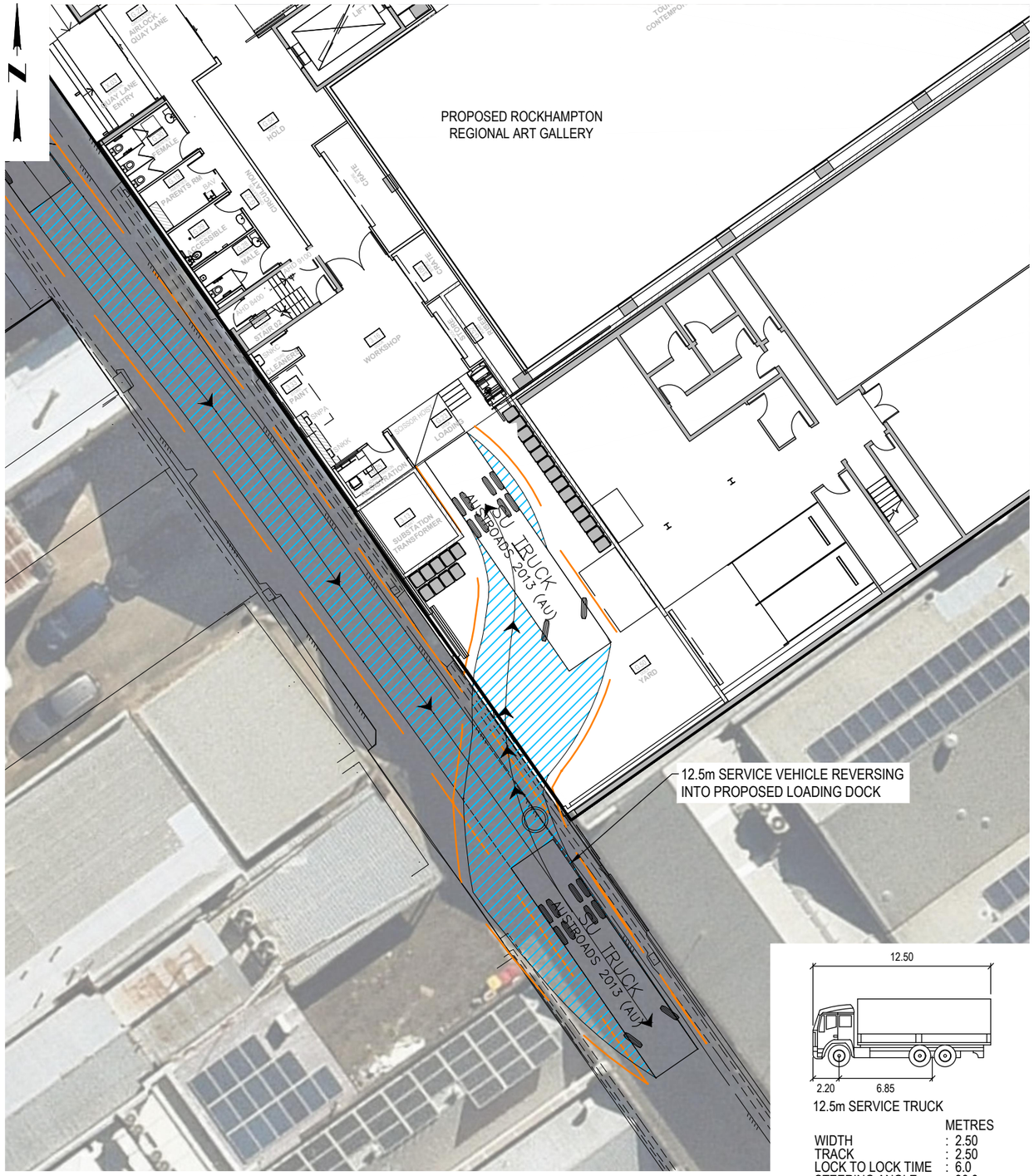
PRELIMINARY

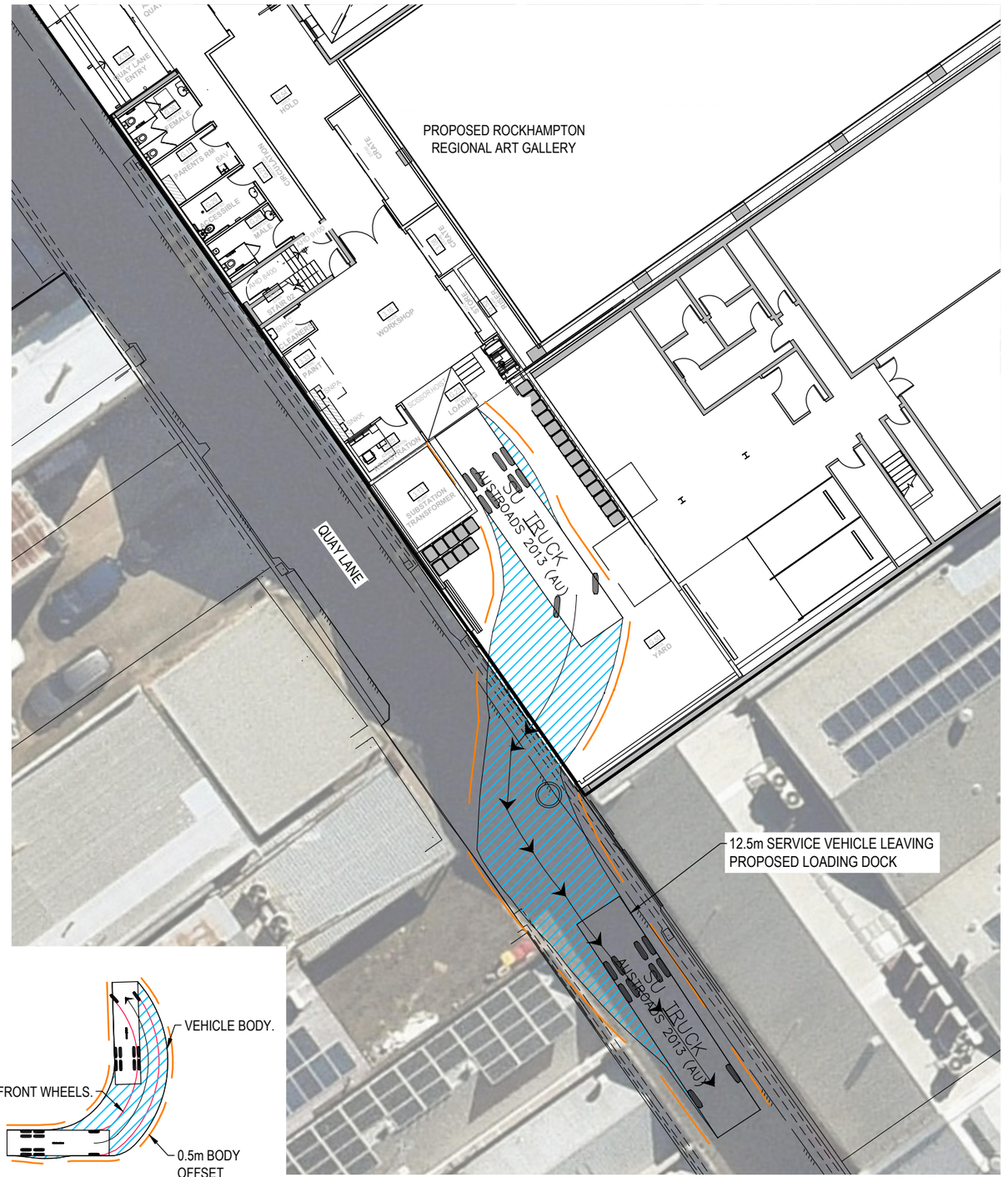
A1 Scale As indicated
Project 17090
Issue B

Drawing DD - LA-0-DA101

Details

0 mm 40 80





12.5m SERVICE TRUCK

	METRES
WIDTH	: 2.50
TRACK	: 2.50
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 36.6

17-000551 - QUAY ST CULTURAL PRECINCT DEVELOPMENT

SK002 - VEHICLE TURNPATH PLAN

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

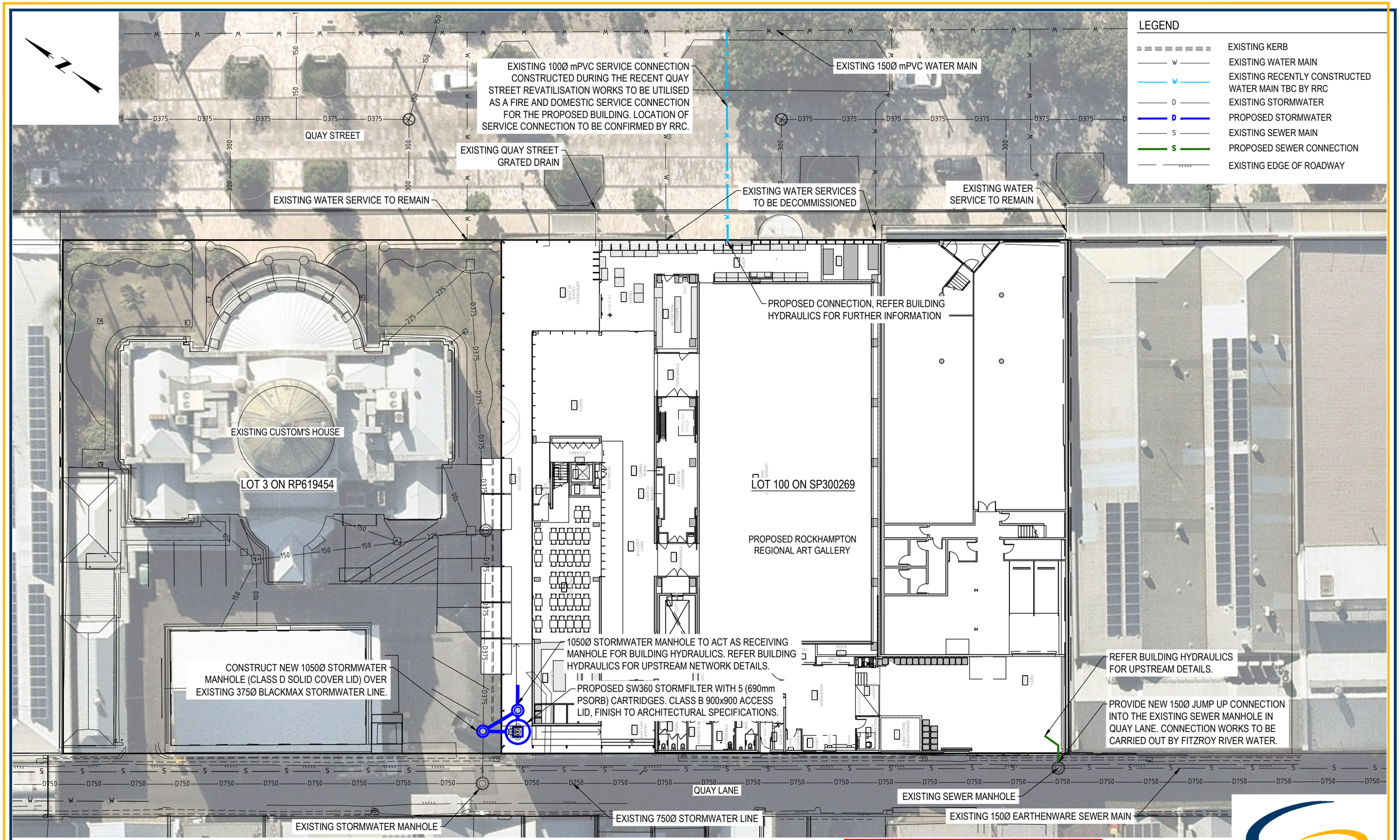
Dated: 07 February 2019

0 0.625 2.5
0 1.25 5.0m

1:125 (A1)
1:250 (A3)

calibre

ROCKHAMPTON BRANCH
REFERENCE: 17-000551
REV: A DATE: 18.06.2018
DRAWN: PL



17-000551 - QUAY ST CULTURAL PRECINCT DEVELOPMENT

SK001 - PROPOSED SERVICES LAYOUT

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Dated: 07 February 2019

NOT TO SCALE

calibre

ROCKHAMPTON BRANCH
REFERENCE: 17-000551
REV: A DATE: 18.06.2018
DRAWN: PL

ROCKHAMPTON REGIONAL COUNCIL

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Waste Management

Quay St Cultural Precinct

At 212 - 214 Quay Street, Rockhampton

On Behalf of Conrad Gargett

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Dated: 07 February 2019

About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (07) 3327 9500
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E: ttmbris@ttmgroup.com.au

Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	A. Stamatiou	E. Atkins	Draft DA Report	08/06/18
2.	A. Stamatiou	E. Atkins	DA Report	18/06/18
3.				
4.				
5.				

Level 8, 369 Ann Street, Brisbane. PO Box 12015 George Street Brisbane QLD 4003

Contents

Table Index

Figure Index

GLOSSARY OF TERMS

In this waste management plan unless the subject matter otherwise indicates, a term or abbreviation has the following meaning:

TERM	DEFINITION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by wire ties and strapping. It is commonly used to bale cardboard and soft plastics (plastic film).
Bin Storage Area	An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 0.66m³ to 1.10m³ used for the storage of refuse.
Collection Point	The identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area for bulk bins.
Composter	A container/machine used for composting specific food scraps and/or organic materials.
Green Waste	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
L	Litre(s) related to refuse volumes
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
m^2	Square Metre(s) related to refuse areas
Mobile Garbage Bins	Plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste	The component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling	All material suitable for re-manufacture or re-use eg glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse	Material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Bin	A receptacle (mobile garbage (wheelie) bin, bulk MGB or bulk bin) used for the storage of refuse.
Refuse Compactor	A receptacle that provides for the mechanical compaction and temporary storage of refuse, to reduce bin numbers and collection frequency.
Refuse Collection Vehicle (RCV)	A vehicle that is specifically designed for collecting and emptying refuse bins and refuse compactors.
Refuse Storage Room	An area identified for storing on-site mobile garbage bins or bulk bins within the property.
Regulated Waste	Waste prescribed under legislation as regulated waste.
Transfer (Manual Transfer)	Physical transfer of refuse material and associated bulk bins or trolleys without assistance
Waste	Refuse material with the exclusion of recycling, green waste, hazardous waste special waste, liquid waste and restricted solid waste.
Waste (General Waste)	Generally material free of any actual or apparent contamination (pathological/infectious, radioactive and/ or hazardous chemical). Reporting use is for material considered to be free of food waste.
Collection Vehicles	
Rear-loading RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins from rear loading mechanism and haul the collected waste to a solid waste treatment facility.

1. Executive Summary

The proposed art gallery development at 212 - 214 Quay Street, Rockhampton comprises of a three-story building, consisting of several art gallery areas, a restaurant and meeting rooms. This document outlines the waste management design and operational requirements to ensure safe and efficient refuse collection occurs for the life of the development.

Waste and recyclables generated by the art gallery will be collected by Council on-site via a loading dock accessed from Quay Lane. The restaurant operators will determine whether they will utilise either Council or a private waste collection contractor once the operator has been engaged.

TTM have referred to Rockhampton Regional Council's (RCC) "*9.3.7 Waste Management Code*" and have outlined the compliance checklist in the table below.

The purpose of the Code will be achieved through the following overall outcomes:

- Development provides for adequate on-site waste management to deal with the expected volume and nature of waste generated by the development;
- Waste facilities are screened from view from adjoining lots, streets and public spaces;
- Waste management is conducted in a safe and ecologically sustainable manner; and
- Waste facilities are located on-site in a manner which facilitates waste removal in a safe and efficient way.

Table 1.1: Planning for Waste Minimisation and Management- Compliance checklist

Performance Outcomes	Acceptable Outcomes	Compliance
Design of waste storage areas		
PO1 For on-site waste collection, waste storage areas are located and designed so that: • They are easily accessed and convenient to use; • Sufficient space is provided for safe entry and exit and servicing by service vehicles without the need for manual handling; • Sufficient height clearance is provided for the safe operation of both front and side bin lifting operations; • They are clear of car parking bays, loading bays and similar areas; and • They are clear of footpaths and pedestrian access.	**AO1.1** Waste storage areas are designed and maintained in accordance with SC6.20 — Waste management planning scheme policy.	• The refuse rooms provide storage space for the required number of bins and will be designed in line with Council's Waste Management Planning Scheme Policy.
Kerbside waste servicing		
PO2 Kerbside collection of waste containers ensures the safety and amenity of road and footpath users.	**AO2.1** Waste bins are located on the footpath so that: • bins are located one (1) metre apart from other bins and obstructions;	• N/A Waste will be collected on-site.

	• all bins are accommodated within the street frontage of the site; • a clear pedestrian access way two (2) metres wide is retained; and • bins are capable of being serviced by the collection vehicle travelling forward, without having to reverse the vehicle.	
PO3 Waste storage minimises adverse impacts on adjoining properties.	AO3.1 Waste storage areas are: • integrated with the building design; or • set back a minimum of two (2) metres from any boundary; and • screened from neighbouring properties and the street by a fence of 1.8 metres minimum height; and • not located directly adjoining dwelling units on the site and on neighbouring properties, and AO3.2 Waste bins are fitted with lids.	• Waste storage areas are integrated within the building design and provided in a screened loading dock, not located directly adjoining dwellings or neighboring properties. • Bins will be fitted with lids.
PO4 Waste storage areas: • have a level area constructed of impermeable, durable materials so that they are easily cleaned; and • have adequate clearance between and around waste storage bins to allow for manoeuvring and washing of bins.	No acceptable outcome is nominated.	• Waste storage areas will be constructed of impermeable, durable material and will have adequate clearance between and around waste storage bins for manoeuvring and washing.
Water Management		
PO5 Waste storage areas are designed to separate stormwater and wash-down water.	AO5.1 Wash-down water drains to either the reticulated sewerage system or an on-site sewerage facility if not in a sewer area. and AO5.2 Wash-down areas are: • provided with a tap and water supply; and • provided with a stormwater diversion valve and arrestor trap.	• The refuse area within the loading dock will be provided with a tap and water supply for cleaning, solid floor grated to a floor waste (connected to a sewer) and designed in accordance with Council's Waste Policy.

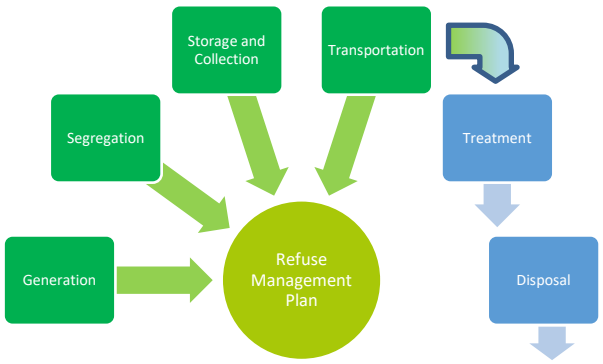
2. Introduction

2.1. Background

TTM Consulting has been engaged by Conrad Gargett to prepare a refuse management report to assess the commercial refuse anticipated to be produced for the proposed art gallery development located at 212 - 214 Quay Street, Rockhampton. The assessment and associated recommendations include:

- Identification of refuse streams produced within the development;
- Estimated volumes generated;
- Appropriate segregation methods for each refuse stream;
- Internal systems and equipment requirements;
- Refuse storage/collection facilities design and loading bay area designs;
- Refuse collection vehicle (RCV) access and manoeuvrability;
- Safety;
- Pollution prevention;
- Owner and tenant education;
- Waste minimisation; and
- Operational requirements.

Refuse Life Cycle



Information contained within the report is based on local government authority requirements related to Rockhampton Regional Council (RRC) and the associated waste services department. The recommendations provided are designed to comply with Council's following documents:

- SC6.20 Waste management planning scheme policy; and
- 9.3.7 Waste management code.

The recommendations for refuse collections relate to the operational phase of the development only and do not include additional requirements during or after demolition or construction phases, which requires its own separate plan.

2.2. Site Location

It is understood that the current Rockhampton Art Gallery is being transferred from 62 Victoria Parade to 212 - 214 Quay Street, Rockhampton, as shown in Figure 1.1. The property description is Lot 100 on SP300269. The site is currently occupied by existing commercial tenancies and has road frontages to Quay Street and Quay Lane. It is understood that Quay Lane will be utilised by service vehicles.

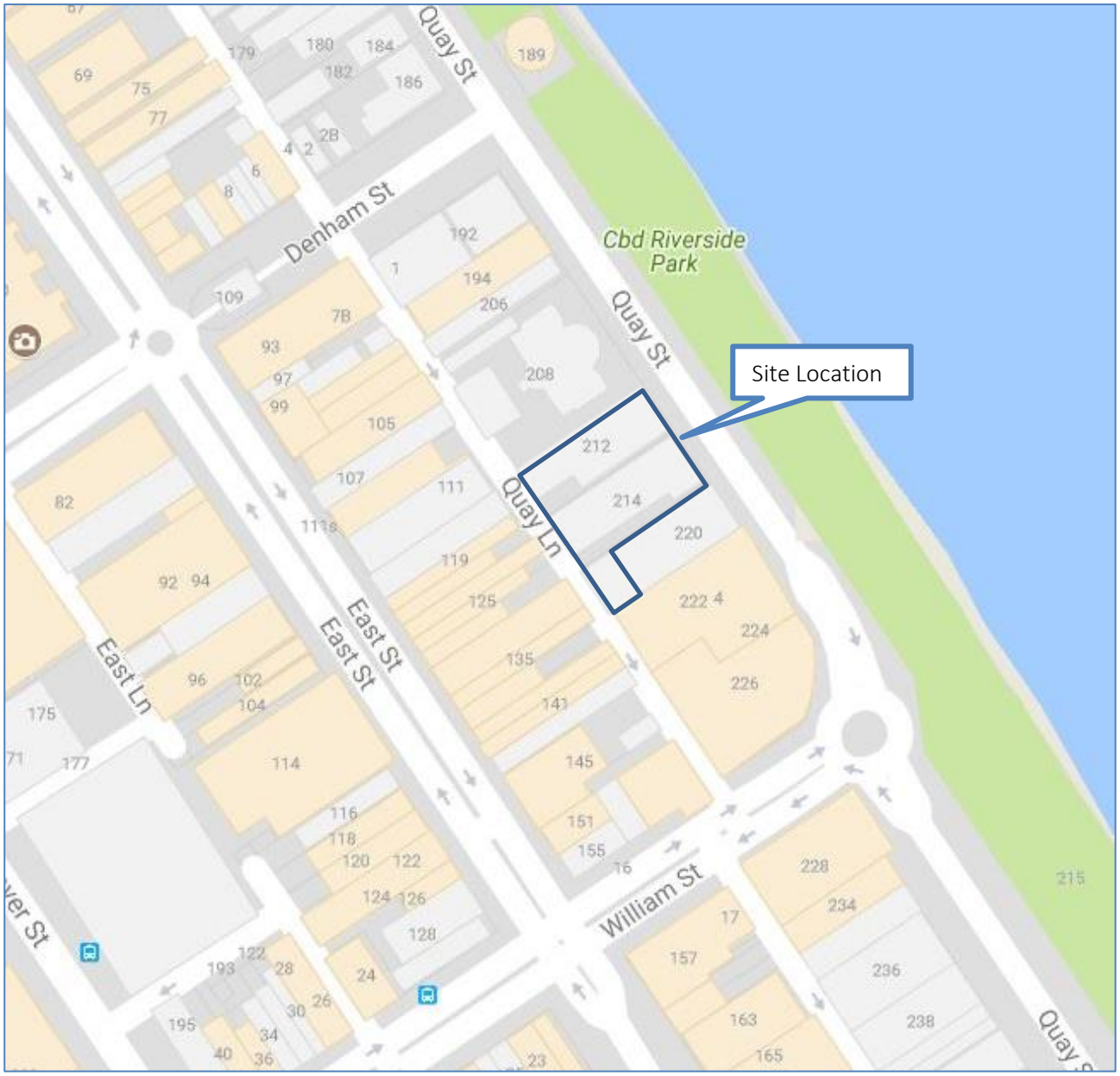


Figure 2.1: Site location

Figure 2.2: Site Overhead

2.3. Development Summary

The proposed art gallery consists of a three-story building, consisting of several art gallery areas, a restaurant and meeting rooms.

It is understood that the restaurant will operate as a separate entity to the art gallery and will therefore confirm the waste servicing arrangements once an operator has been confirmed.

2.4. Development Refuse Profile

The proposed GFA's and refuse profile are outlined below.

Table 2.1: Art Gallery Refuse Summary

Description	GFA (m^2)	Generated Waste (L/week)	Generated Recycling (L/week)
Admin / Meeting / Education Rooms	345	173	173
Gallery Retail	60	42	42
Functions Area / Bar	150	225	225
Total	**555**	**440**	**440**

Table 2.2: Commercial Restaurant Refuse Summary

Description	GFA (m^2)	Generated Waste (L/week)	Generated Recycling (L/week)
Restaurant	120	5,544	1,092

Section 6 of the report summarises the operational requirements for the entire development. All calculations and equipment requirements are based on the tenancy schedules and associated waste generation rates as outlined in the detailed information in Appendix A.1. Site drawings can be found in Appendix A.2.

2.5. Existing Refuse Arrangements

It is noted that the existing Art Gallery consists of 2 levels, with gallery rooms and storage spaces, along with staff/admin areas and a small retail shop.

TTM has obtained the existing arrangements for site located at 62 Victoria Parade and are as follows:

Table 2.3: Existing Refuse Arrangements

Existing Building GFA (m^2)	918m^2 (taken from Areas Schedule for Business Case Options Analysis)
Existing Waste Collection Area (m^2)	Waste and Recycling collection services are performed from Quay Lane at rear of existing site.
Existing Waste Generation (Bin Numbers)	8qty 240L mobile garbage bins - waste 6qty 240L mobile garbage bins – recycling 1qty 660L rear lift bin – assumed as waste
Existing Waste Generation (Servicing)	Services are performed each Monday, Wednesday and Friday Council – weekly, early Friday mornings (208 – 220 Quay Street)
Existing Collections	All waste and recycling 240L mobile garbage bins are serviced by Council's Waste and Recycling Unit Note 1qty 660L rear lift bin, however this is a commercial bin and the use or collection arrangements are unknown.
Existing Types of Waste Materials	General waste and co-mingled recycling

Although the proposed art gallery has a larger building GFA than the existing, it is not expected to produce significantly more waste and recycling during non-event days.

3. Art Gallery Refuse

The waste streams for the Art Gallery use may consist of the following:

- Frequently generated waste streams:
  - General waste;
  - Recycling (glass, aluminium and steel cans/tins/lids, paper/cardboard, semi rigid plastics); and
- Infrequently generated waste streams:
  - Green waste;
  - Organic waste;
  - Hard waste/bulky goods/construction materials;
  - Hazardous waste (paints, batteries and cartridges); and
  - E-waste.

Waste should be collected in a dedicated receptacle within the allotted space and bagged or wrapped prior to disposal. Operationally, general waste should be bagged and weigh approximately 3kg or less and not exceed the dimensions of the waste receptacles.

Recycling must not be bagged. Recyclables should be collected in a dedicated receptacle to ensure separation from the waste material.

3.1. Art Gallery Disposal

Each office and communal areas (with the exception of the art galleries themselves) will use bins up to a max size of 60L where space is available.

3.2. Transferal and Disposal

On completion of each day, or as required during the day, nominated staff will transfer the waste and recycling bins to the loading dock area and decant in to 240L waste and recycling bins (see Appendix A.2 for refuse area).

3.3. Alternate Refuse Disposal

3.3.1. Green Waste

Green waste is not typically produced from an art gallery development other than from any exhibition areas and is removed by the designated maintenance contractor.

3.3.2. Hard waste/Bulky goods

Hard waste will be coordinated with building management/staff and is removed by the designated maintenance contractor.

3.4. Specialised Waste Disposal

Where applicable, tenants usually make their own arrangements for the disposal and recycling of toner cartridges and batteries. Facilities management /cleaners will organise and assist with disposal of hard, electronic, liquid waste and any paint/chemicals. Hazardous waste must be handled with due care, separated and securely stored and collected by a specialist waste contractor.

4. Restaurant Refuse

The waste streams for the restaurant use may consist of the following:

- Frequently generated waste streams:
  - General waste;
  - Recycling (glass, aluminium and steel cans/tins/lids, paper/cardboard, semi rigid plastics);
  - Organic waste; and
  - Used cooking oil.
- Infrequently generated waste streams:
  - Hard waste/bulky goods (broken furniture);

Waste should be collected in a dedicated receptacle within the allotted space and bagged or wrapped prior to disposal. Operationally, general waste should be bagged and not exceed the dimensions of the waste receptacles.

Recycling must not be bagged. Recyclables should be collected in a dedicated receptacle to ensure separation from the waste material.

4.1. Restaurant Disposal

The restaurant will be responsible for storage of refuse produced during operating hours within their own tenancy areas.

Typically for restaurants, tenants will use bins up to a max size of 60L that are placed within service areas, kitchens or back of house (BOH), where space is available.

4.2. Transferal and Disposal

On completion of each day, or as required during the day, nominated staff will transfer the waste and recycling bins to the back of house refuse storage room adjacent to the kitchen (see Appendix A.2 for refuse area). These bins will then be transferred (when full) to the loading dock area and rotated with empty wheelie bins (see Appendix A.2 for refuse area and transfer path).

4.3. Alternate Refuse Disposal

An alternate refuse disposal method, such as composting for organic waste, may be used to reduce the total amount of general waste produced and balers for paper, cardboard and plastics.

4.3.1. Organic Waste

Typically for restaurants, consideration may be given to the use of digesters, dehydrators or composters which are specifically designed to recycle and reduce food waste. However, due to the regional nature and the availability of organic waste recycling, this option is not considered viable for this particular development.

4.3.2. Paper, Cardboard and Plastics

Consideration may be given to the use of a baler for cardboard, plastic film LDPE or HDPE recyclables (see Appendix C.4). Segregation and baling of these materials will reduce total waste output and may lower the total cost of refuse removal. Typically, a decision on the use of this equipment would be made at the start of the operational phase following review of the site final waste requirements and completion of appropriate risk assessments and operational procedures.

4.3.3. Hard waste/Bulky goods

Hard waste will be coordinated with building management/staff and is removed by the designated maintenance contractor.

4.4. Specialised Waste Disposal

Where applicable, tenants usually make their own arrangements for the disposal and recycling of toner cartridges and batteries. Facilities management /cleaners will organise and assist with disposal of hard, electronic, liquid waste and any paint/chemicals. Hazardous waste must be handled with due care, separated and securely stored and collected by a specialist waste contractor.

4.5. Waste Oil

Consideration should be given to the use of oil collection for cooking as shown in Appendix C.4. All waste liquids, such as oil should be separated and stored in clearly labelled containers. Bunded areas or bunded plastic pallets should be supplied for the storage of liquid waste including waste oils.

5. Refuse Collections

5.1. Refuse Vehicle Access and Loading

Access to the loading area is via Quay Lane, as shown in Appendix A.2. Service vehicle swept paths typical of a refuse collection vehicle is shown in Appendix B.

Due to the site access via Quay Lane and the restricted area of the loading dock, RCV manoeuvring is provided for the service vehicle to perform a single reversing manoeuvre to enter the site and exit in a forward gear.

TTM have obtained information from Council regarding the service vehicle size and note that the RCV used for collection of the proposed site is performed via an 8.01m vehicle. It should be noted that TTM have conducted a conservative swept path analysis of a larger 10.3m RCV.

5.2. Collections

All art gallery refuse will be collected by Council.

It should be noted that the commercial restaurant will be operated as a separate entity to the art gallery and the collection arrangement for either Council or private collection will be determined once a tenant has been engaged.

All 240L wheelie bins will be serviced by a rear-lift refuse collection vehicle (RCV).

Council will service all bins directly from the refuse/loading area for waste and recycling as shown in Appendix B.

Refuse bin quantities have been calculated on collection cycles of three days per week for both waste and recycling, based off the existing servicing arrangements.

It should be noted that collection frequencies can vary according to waste volumes, particularly during larger event days which do not occur regularly, and the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes which may need to be altered to suit the building operation and can be accommodated within the loading dock area.

Further to this, TTM have received confirmation that when contacted directly, the Council department can arrangement an additional pick up, if required.

6. Recommended Operational Requirements

6.1. On-going Management

All refuse equipment movements are to be managed by the building manager/caretaker/site staff at all times. The building manager/staff duties include, but are not limited to the following:

- Organising, maintaining and cleaning the general and recycled waste holding areas (frequency will depend on waste generation and will be determined based upon building operation);
- Transporting and decanting of bins as required;
- Organising both garbage and recycled waste pick-ups as required;
- Cleaning and exchanging all bins;
- Organising and coordinating bulky goods collections;
- Ensuring site safety for residents, children, visitors, staff and contractors;
- Abiding by all relevant OH&S legislation, regulations, and guidelines;
- Assessing any manual handling risks and preparing a manual handling control plan for waste and bin transfers;
- Providing to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; and
- Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.

Note: As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.

6.2. Waste Minimisation

Waste minimisation is an important part of any site operation. At a minimum, the following should be implemented.

6.2.1. Education

On-going education is important to ensure people continue to use the facilities as originally intended. All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

6.2.2. Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management/designated staff for maintenance and sustainability, including but not limited to bin volumes, refuse storage areas and stormwater management.

Waste minimisation requires regular reviewing to ensure operational sustainability of refuse volumes and equipment and economic feasibility. It is recommended that refuse weights and movements are recorded and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.

6.2.3. Signage

All receptacles and bins should have adequate signage, with appropriate labelling, which is clear and easy to read. Standard signage is to be provided in and around waste collection and storage areas (see Appendix D).

6.3. Safety

Note that transferring refuse bins is considered a hazardous manual task and therefore contractors must ensure a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

6.4. Operational Equipment Summary

Equipment required or suitable for use as part of the operational phase of the development is outlined below. It should be noted that all collection receptacles and bins should be branded with the appropriate stickers.

Table 6.1: Art Gallery Operations Equipment

Description	Quantity	Notes
Recycling Bins	6*	240L bins See Appendix C.2
Waste Bins	8*	
Various smaller receptacles	TBC	See Appendix C.1
Baler (Optional)	1	See Appendix C.4

*Note that these bin numbers are provided based on the existing waste generation of the current art gallery site at 62 Victoria Parade which includes the waste generated from the functions and events. Additionally, although the proposed site has a larger building footprint, it is not expected to produce significantly more waste and recycling during non-event days.

Table 6.2: Restaurant Operations Equipment

Description	Quantity	Notes
Recycling Bins	3	240L bins See Appendix C.2
Waste Bins	10	
Baler (Optional)	1	See Appendix C.4

6.5. Operational Equipment Suppliers Summary

Equipment suppliers for use as part of the operational phase of the development are outlined below.

Table 6.3: Equipment Suppliers

Company Name	Equipment	Link
Elephants Foot Recycling Solutions	Chutes & Bin Rotation Equipment, Balers, Compactors, Bin Lifters, Weighing Systems	http://www.elephantsfoot.com.au/
Wastech	Chutes & Bin Rotation Equipment, Balers, Compactors	http://wastech.com.au/
Pakmor	Balers, Compactors, Bin Lifters, Weighing Systems, Shredders	http://pakmor.com.au/
Miltek	Balers and Compactors for waste and recycling i.e. Cardboard, Plastic, Polystyrene, Medical Waste	http://www.miltek.com.au/
Closed Loop Organics	Industrial and Domestic Composters	http://www.closedloop.com.au/domestic-composter
MOVEXX	Bin Towing, Trailers and manual handling equipment	http://www.movexx.com.au/
Ace Waste	Specialised/hazardous waste collection and disposal	http://www.acewaste.com.au/
Absorbenviro	Containment, Absorbents, Drain Protection	http://www.absorbenviro.com.au/
Trade Environmental	Spill Response, Spill Containment, Storm water Management	http://www.tradeenviro.com.au/bunded-pallets/
Spill Station Australia	Spill Response and Containment Equipment	www.spillstation.com.au

6.6. Controls

6.6.1. Refuse Area and Storage Areas

The waste area will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Fire rated and ventilated in accordance with the National Construction Code- Building Code of Australia;
- Doors must be wide enough to allow for the easy removal of the largest container to be stored;
- The walls, ceiling, floor and equipment of each waste storage room are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning;
- The floor is to be graded to fall to a drainage point;

- Drainage point connected to sewer in accordance with trade waste requirements;
- A hose cock must be provided in close proximity the refuse area for cleaning bins and the room;
- Adequate artificial lighting;
- Refrigerated rooms are fitted with an approved alarm device outside, but controllable only from within the room;
- Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage); and
- Permit unobstructed access for removal of the containers to the service point and for positioning of the containers correctly.

6.6.2. Storm Water Prevention and Litter Reduction

Designated personnel/ cleaners are responsible for on-site storm water pollution and litter reduction. To limit the impact on the environment and site, the following measures should be taken into account:

- Providing adequate signage to promote litter control;
- Providing sufficient refuse bins in appropriate areas;
- Preventing unauthorised entry to waste areas;
- Monitoring waste and prevent waste overflow;
- Promoting best practices for waste minimisation; and
- Installing litter traps in car parks for any unwanted discharge.

6.6.3. Ventilation

Natural (unobstructed, permanent openings direct to external air no less than one-twentieth (1/20) of floor area) or mechanical ventilation (minimum rate of 100 L/s and 5L/m^2 exhausting rate) must be provided to waste storage areas unless refrigerated below four degrees Celsius.

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

Dated: 07 February 2019

Appendix A Detailed Calculations and Site Plan

A.1 Refuse Calculations

In the absence of generation rates from RCC, the generation rates used for the calculation of refuse produced uses rates recommended by the City of Gold Coast SC6.13 City Plan Policy – *Solid waste management.*

Waste volumes indicated do not include compaction. Recycling compaction is prohibited and therefore has not been applied. All admin/office volumes are calculated based on five-day working week operation, functions and bar areas are based on a three-day working week operation and the gallery retail / restaurant is based on a seven-day working week operation.

Table A.1: Generation Rates

Type	Waste	Recycling
Office/Admin/Gallery Retail*	10 Litres / 100m^2 / day	10 Litres / 100m^2 / day
Functions / Bar	50 Litres / 100m^2 / day	50 Litres / 100m^2 / day
Restaurant	660 Litres / 100m^2 / day	200 Litres / 100m^2 / day

It should be noted that the gallery retail is not expected to produce significant waste generation compared to a typical retail store <100m^2.

Table A.2: Art Gallery Calculations

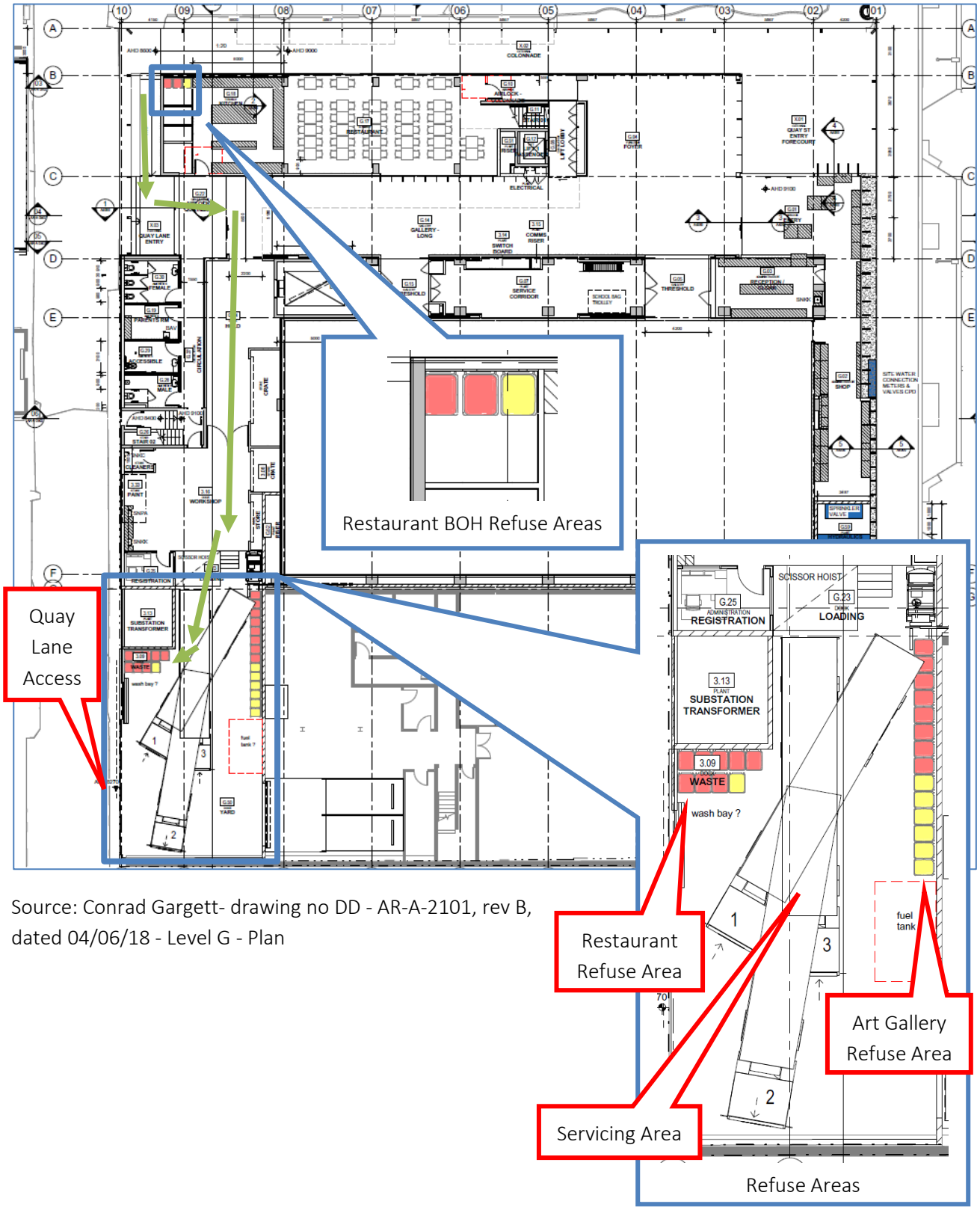
Description	GFA (m^2)	Generated Waste (L/week)	Generated Recycling (L/week)
Admin / Meeting / Education Rooms	345	173	173
Gallery Retail	60	42	42
Functions Area / Bar	150	225	225
Total	**555**	**440**	**440**
Refuse per day	-	**63**	**63**
Max refuse per collection	-	**188**	**188**
Collections and Equipment	**Bin Size (L)**	240	240
	Collections per Week	**3**	**3**
	No Bins Required	**1**	**1**
	No Bins Provided	**8***	**6***
	Raw Bin Area	**0.9 m^2**	
	Storage Room		

*It should be noted that the existing waste generation of 8x 240L waste bins and 6x 240L recycling bins are provided for the proposed site based on the current gallery operations at 62 Victoria Parade.

Table A.3: Restaurant Calculations

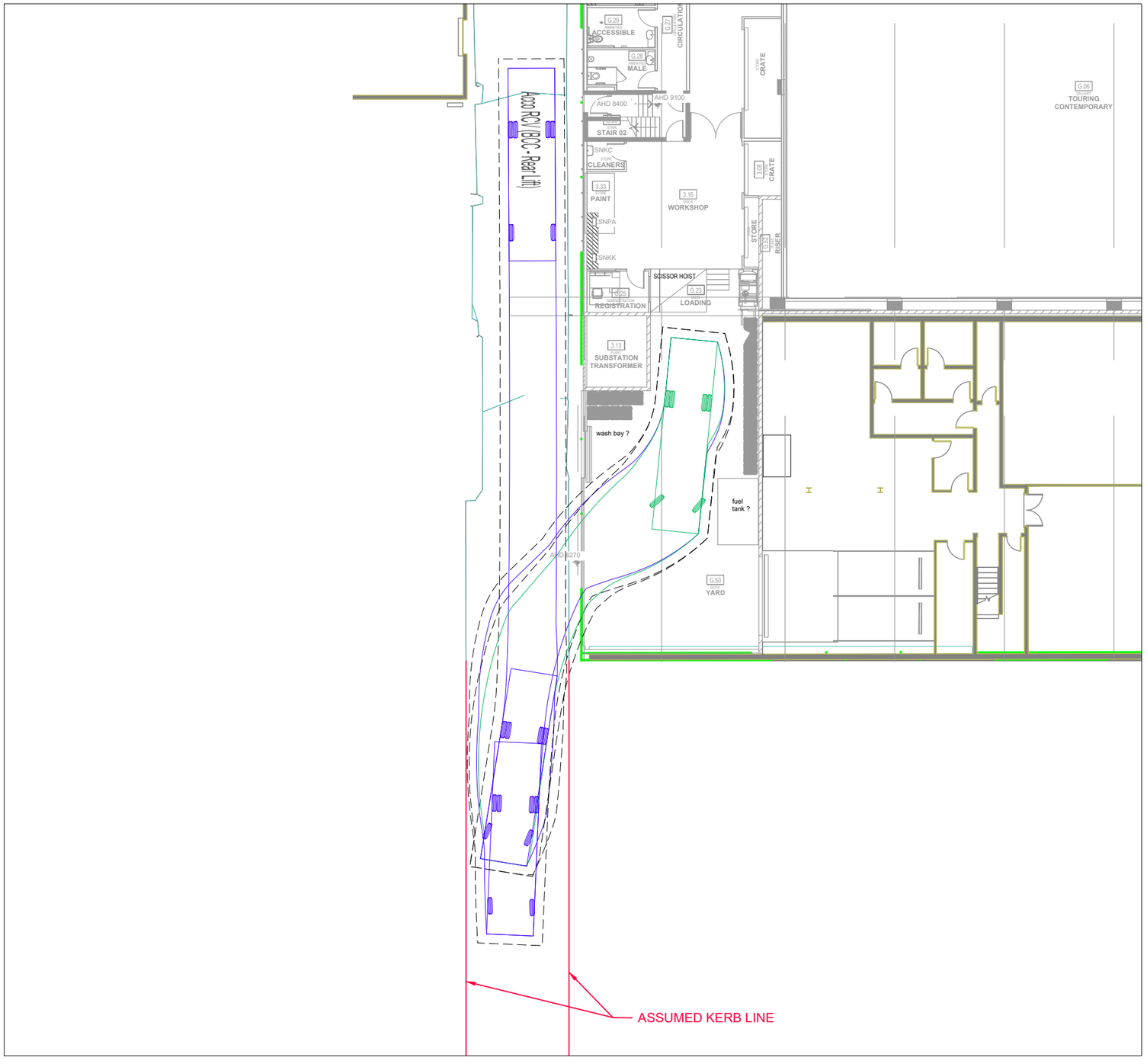
Description	GFA (m^2)	Generated Waste (L/week)	Generated Recycling (L/week)
Functions Area / Bar	120	5544	1680
Total	**120**	5544	1680
Refuse per day	-	**792**	**240**
Max refuse per collection	-	**2376**	**720**
Collections and Equipment	**Bin Size (L)**	**240**	**240**
	Collections per Week	**3**	**3**
	No Bins Required	**10**	**3**
	Raw Bin Area	**5.7 m^2**	
	BOH Storage Area	**3.3m^2**	
	Loading Dock Storage Area	**8.2m^2**	

A.2 Ground Floor Plan



Source: Conrad Gargett- drawing no DD - AR-A-2101, rev B, dated 04/06/18 - Level G - Plan

Appendix B Refuse Vehicle Swept Paths



RCV-REVERSE ENTRY FORWARD EXIT

SCALE 1:250

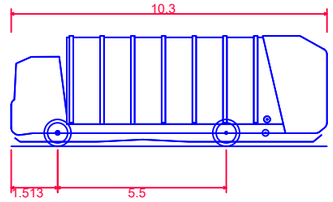
ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

Dated: 07 February 2019



Acco RCV (BCC - Rear Lift)

Overall Length	10.300m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.150m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.500m

PRELIMINARY ADVICE ONLY

8 Jun 2018

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	08-06-18	ORIGINAL ISSUE	SD	AS	AS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: Conrad Gargett

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE, QLD, 4000
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E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT: **QUAY ST CULTURAL PRECINCT - WASTE MANAGEMENT**

DRAWING TITLE: **RCV SITE ACCESS ANALYSIS**
ACCO BCC REAR LIFT 10.3m DESIGN VEHICLE

PROJECT NUMBER	18BRW0011
ORIGINAL SIZE	A3
DRAWING NUMBER	18BRW0011-01
REVISION	A
DATE	8 Jun 2018
SHEET	1 OF 1

\\ttmfps01\synergy\br\synergy\projects\18brw\18brw0011 quay st cultural precinct - waste management\3 - plans\ttm\18 06 07\18brw0011-01.dwg

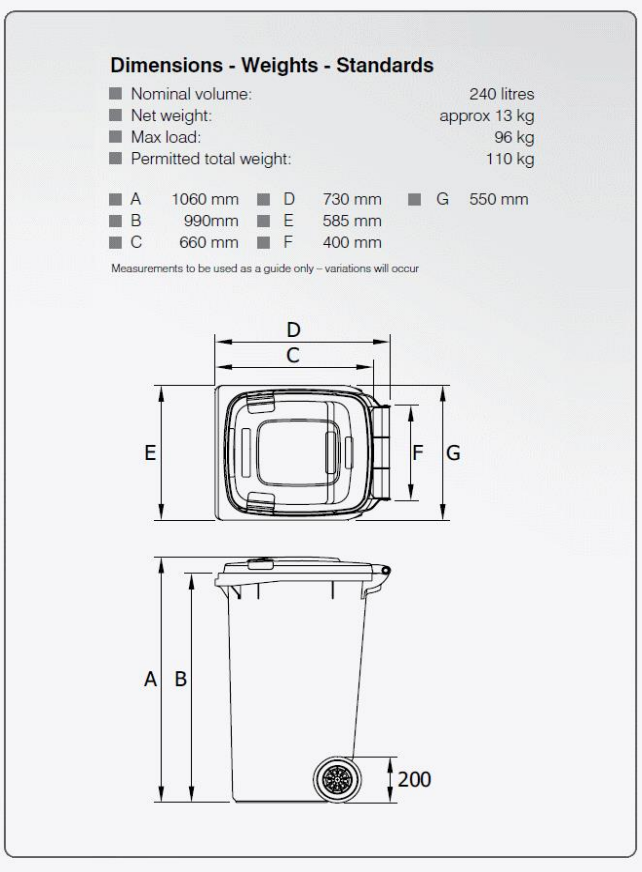
Appendix C Systems and Specifications

C.1 Typical Back of House/Office Bins

C.2 Council Collection Bins

Wheelie Bins

240L MGB



C.3 Waste Oil

Cookers
Bulk Oil System
the future of cooking oils

1300 882 299

VIC NSW SA QLD WA

ENQUIRE

HOME | SUSTAINABILITY | OIL MANAGEMENT SYSTEMS | PRODUCTS | ORGANIC OIL | VIDEOS | MEDIA | ABOUT US | CONTACT US

oil Management Systems

Retail Solutions

Cookers has developed and enhanced a reliable stainless steel tank system for the storage and handling of your cooking oil and is available to you on a Free Loan basis. All of the equipment supplied by Cookers has been manufactured in Australia.

Our standard fresh oil tank is fully stainless steel and is equipped with an electric pump, food grade hose, filler nozzle and heavy duty castors for ease of movement. The dimensions of this tank are 450mm W x 700 D x 900 H which is equivalent to a standard bench height. This tank has a holding capacity of 180 litres.

There are also other size tanks available to suit different applications and Cookers will also supply custom built tanks if required.

Lifting of drums is eliminated, OH&S is enhanced and stock management is improved.

Cookers also has a number of options when it comes to handling your waste oil.

Our standard waste oil holding tank has the same dimensions as our fresh tank - 450 W x 700 D x 900 H - and holds 200 litres. A larger tank with a capacity of 400 litres is also available.

We now have a new addition to our waste equipment with a Vacuum Waste Tank now available (Patent Pending). Again this tank has identical dimensions to our standard fresh oil tank. Simply wheel the unit up to your fryer, place the hose tip into the fryer and vacuum out the oil in less than 1 minute. This unit will be pumped out by our waste collection truck on its scheduled run.

As you can see the Cookers Bulk Oil System makes the worst job in the kitchen much safer and easier.

Fresh oil storage tanks

Waste oil tanks are compact, clean and easy to use.

Cookers
the future of cooking oils
Phone: 1300 882 299

C.4 Cardboard and Plastic Baler

Vertical balers

B-series
B5 W VD

WIDE FILLING OPENING

The B5 W VD has a vertical door opening. This is the right choice of baler where space is limited and you at the same time have a need for high capacity.

The wide filling opening is carachteristic to this baler. It makes it easy to insert bulky waste like dry soft plastic or large pieces of cardboard.

1 Compact your waste and eject the finished bale. 2 Remove and store the bale until collection. 3 With a vertical door opening you have an ergonomical working posture 4 Strap rolls are placed in front, making them easy to replace

Technical specifications	
Press force (t)	5
Power supply	1x230V 50Hz 10A
Motor (kW)	1.1
Noise level (dB)	65-68
Cycle time (sec)	33
Dimensions WxDxH (mm)	1370 x 1050 x 2610
Weight (kg)	615
Filling opening WxH (mm)	1000 x 500
Filling height (mm)	915
Chamber height (mm)	1305
Stroke (mm)	750
Bale size WxDxH (mm)	1000 x 700 x 800
Bale weight cardboard (kg)	80-110
Bale weight plastic (kg)	90-130

- **Vertical door opening**
  Perfect for where space is limited
- **Front access to strap rolls**
  Fast and easy to replace
- **Two-hand bale ejection**
  Automatic and safe operation

BRAMIDAN
www.bramidan.com

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bramidan@bramidan.dk

Scan the code and see a video of our B-series

Appendix D Refuse Signage

D.1 Refuse Signage Resource

Free signage is available from the QLD Government site using the link below.

http://www.ehp.qld.gov.au/waste/recycling/awareness_raising_materials_for_public_place_recycling.html

Example bin or wall signage

Printable Refuse Signs

Source: http://www.sulo.com.au/products/office-recycling/waste-watcher/waste-watcher-sign-frames/

Example Public Place Signage

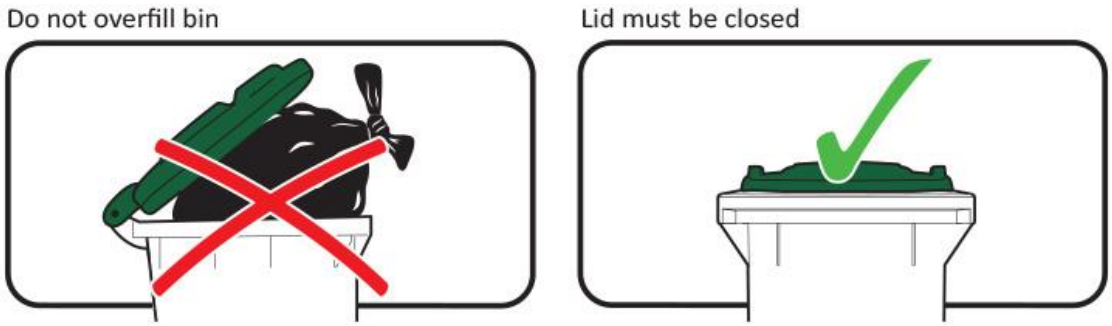
Example Oil Storage

D.2 Example Safety Signage

Safety Signs are required for refuse discharge and storage rooms / areas and must comply with Australian standards "AS 1319 Safety signs for the occupational environment". Additional state or local government requirements may also apply. Following are examples of typical signs used around a waste storage area. It should be noted however that an assessment must be completed by a qualified fire and safety consultant, prior to occupancy, to determine the correct signage to be used.

Fire Management

Refuse Room Management



ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

Dated: 07 February 2019

Engineering Infrastructure Report

Quay Street Cultural Precinct Development

PREPARED FOR ROCKHAMPTON REGIONAL COUNCIL

Calibre Professional Services Pty Ltd
55 070 683 037

17-000551 | 18 June 2018

ROCKHAMPTON REGIONAL COUNCIL

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DOCUMENT CONTROL

ISSUE	DATE	ISSUE DETAILS	AUTHOR	CHECKED	APPROVED
A	15/06/2018	WORKING DRAFT	PL	CS	
B	18/06/2018	FOR APPROVAL	PL	CS	C. Shields RPEQ 9347

Contents

Figures

Appendices

1 Introduction

Calibre Professional Services Pty Ltd has prepared the following Engineering Infrastructure Report to address relevant civil engineering related aspects of the proposed Quay Street Cultural Precinct Development, with respect to a Material Change of Use (MCU) Development Application (DA). The subject sites (Lot 3 on RP619454 & Lot 100 on SP300269) front the recently upgraded Quay Street to the North East and Quay Lane to the South West.

- Lot 3 on RP619454 (Customs House Building) – 2,160m2; and
- Lot 100 on SP300269 (three commercial use buildings) – 2,806m2.

Figure 1.1 Site Locality (Nearmap, 2018)

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2 Site Works

Site works for the development will generally consist of:

- Disconnection of existing services;
- Demolition of existing structures;
- Bulk Earthworks;
- Building works;
- Underground services installation and connection to existing;
- External roadworks, colonnade and public realm linkages; and
- Landscaping.

The works area and site compound will require appropriate traffic management, security fencing and pedestrian signage to ensure the safety of all people that will be within or adjacent to the site.

Erosion control measures are to be implemented during construction in accordance with the Capricorn Municipal Development Guidelines (CMDG) and RRC requirements. All erosion control measures are to be closely monitored by the Principal Contractor and re-established after all rain events or vandalism, for the duration of the maintenance period.

A Construction Environmental Management Plan (CEMP) will be prepared to accompany the Operational Works phases of the development. The intent of the CEMP will be to provide practical and achievable plans for the management of the project, to ensure that environmental requirements are complied with throughout the construction of the development.

3 Sewer Reticulation

3.1 Existing Infrastructure

The site is currently serviced by an existing 150mm dia. earthenware sewer main located on the North-east side of Quay Lane. From Council records, it is clear that the existing 150mm dia. sewer system falls towards the South-east and ultimately discharges to a Council sewage pump station (SPS) located near the corner of Arthur and Campbell Street, before being pumped to the South Rockhampton Sewage Treatment Plant (STP).

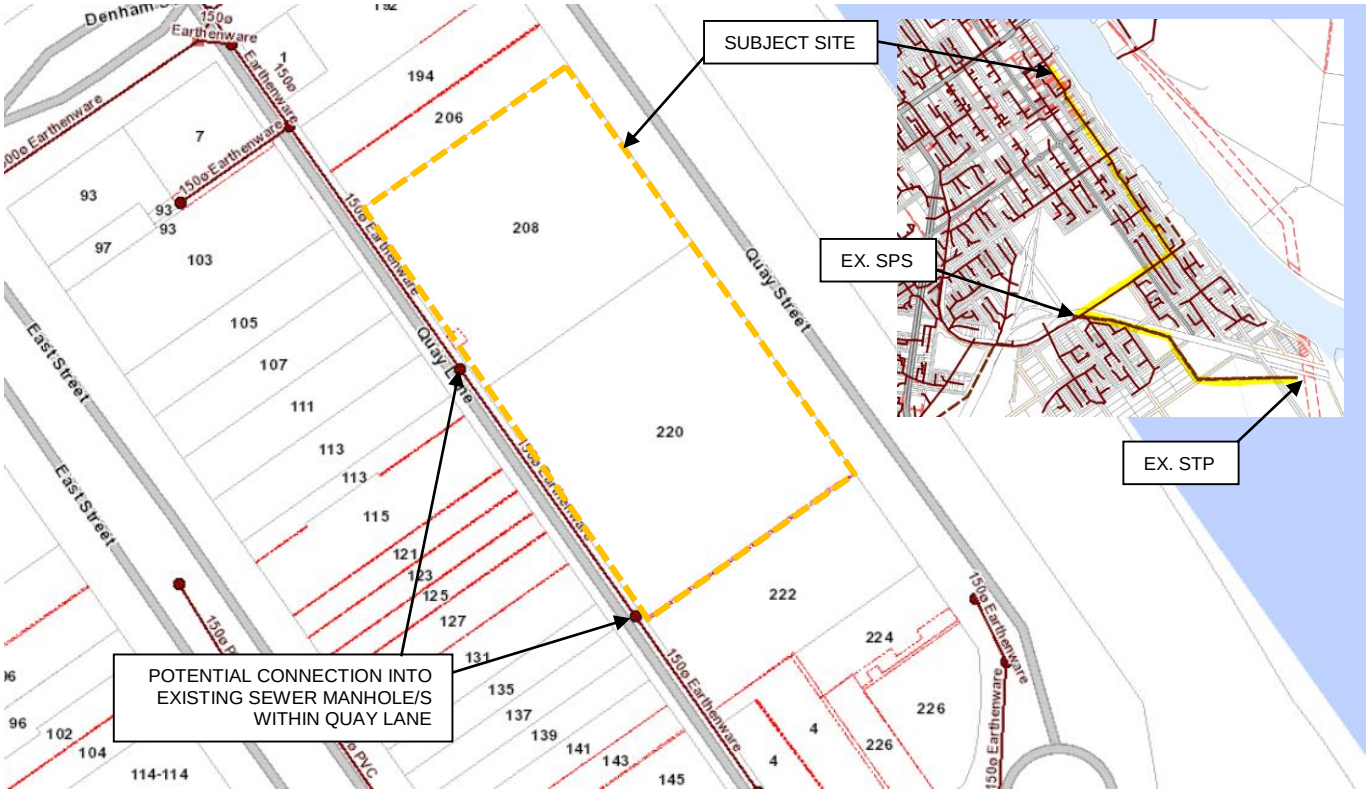

Figure 3.1 Existing Sewer Infrastructure (Rockhampton Online Mapping, 2018)

3.2 Proposed Connection Point/s

It is proposed that the new building be connected to the existing 150mm dia. earthenware system via a new connection to one (1) of the two (2) existing manholes located on the South-Western boundary of the subject site fronting Quay Lane (refer Figure 3.1). A new connection to one or both of these manholes shall be carried out by Fitzroy River Water (FRW) via a Private Works Application and shall be at the developer's expense. It is proposed that as part of this development, the existing sewer connections over the site are decommissioned, with exception to the existing Customs House (Lot 3 on RP619454) connection, which is to remain. From Council records, the invert level of the Southernmost existing manhole within Quay Lane is 4.593m making the depth to invert of this main approximately 3.6m. Given that this existing main appears to be relatively deep, it is suggested that any new connections are made into the existing manhole to avoid excessive trenching to make connections directly into the existing 150mm dia. earthenware main. Additionally, providing a new connection into one or both of these existing manholes will eliminate the need to alter the expected fragile existing earthenware pipes. All internal building sanitary drainage is to be designed and detailed by a suitable quailed person (Hydraulic Engineer) during the detailed design process.

4 Water Reticulation

4.1 Existing Infrastructure

An existing 150mm dia. recently constructed mPVC water main runs along the North-eastern side of Quay Street and currently supplies Customs House and the three existing commercial dwellings over the subject site via road crossings. From recent discussions with Rockhampton Regional Council, it is understood that a 100mm dia. connection crossing Quay Street was installed during the Quay Street revitalisation works within the area of the site frontage. It should be noted that a fire hydrant on the existing 150mm dia. mPVC water main in the Quay Street corridor is in close proximity to the proposed building.

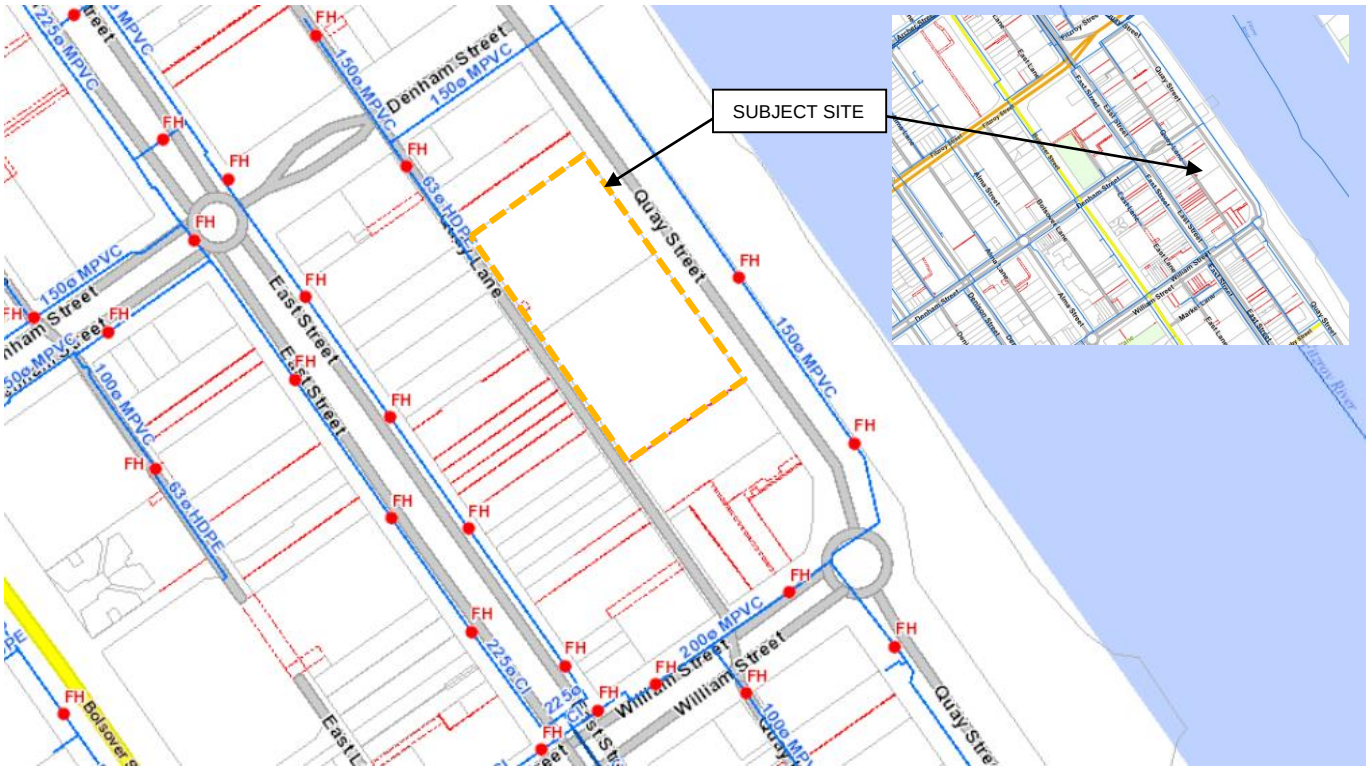

Figure 4.1 Existing Water Reticulation (Rockhampton Online Mapping, 2018)

4.2 Proposed Connection

It is proposed that the existing 100mm dia. connection recently installed as part of the Quay Street Revitalisation works to the South-west side of Quay Street be utilised as the main service connection for the proposed building. Details of the proposed fire service and domestic connection configuration have been provided by the Hydraulic engineer and can be seen in Appendix B.

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5 Stormwater Management

5.1 Existing Scenario

5.1.1 Existing Commercial Buildings

In the existing scenario, the site is discharged in multiple locations along the frontage of Quay Street and Quay Lane. Along the Quay Street frontage, roof water from the subject site is interconnected with the recently reconstructed Quay Street drainage. To the rear of the site, a portion of the existing building roof area is currently discharging to the Quay Lane kerb and channel at surface level before being collected in grated inlets within the laneway. Within Quay Lane, there is an old 750mm dia. stormwater line falling down the laneway towards the South-east that ultimately discharges to the Fitzroy River via a 1200mm dia. RCP near the Quay Street & William Street roundabout.

5.1.2 Existing Customs House

The existing Customs House discharges into a recently constructed 375mm dia. BlackMAX stormwater line along the South-eastern Customs house boundary. This recently constructed stormwater line discharges into the existing 750mm dia. stormwater line within Quay Lane and ultimately discharges to the Fitzroy River via a 1200mm dia. RCP near the Quay Street & William Street roundabout.

Figure 5.1 Existing Stormwater Reticulation (Rockhampton Online Mapping, 2018)

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Figure 5.2 Existing 375mm BlackMAX Stormwater Connection in Quay Lane

5.2 Proposed Scenario

It is proposed that all roof water from the new building shall discharge into the recently constructed 375mm dia. BlackMAX stormwater line at the Western corner of the proposed Art Gallery building. This will involve construction of a new 1050mm dia. stormwater manhole on the existing stormwater line located within the Custom's house allotment (3 on RP619454). A proposed stormwater quality improvement device (SQID) shall be located within the external colonnade in the Western corner. A preliminary layout of the proposed discharge arrangement can be seen below in Figure 5.3.

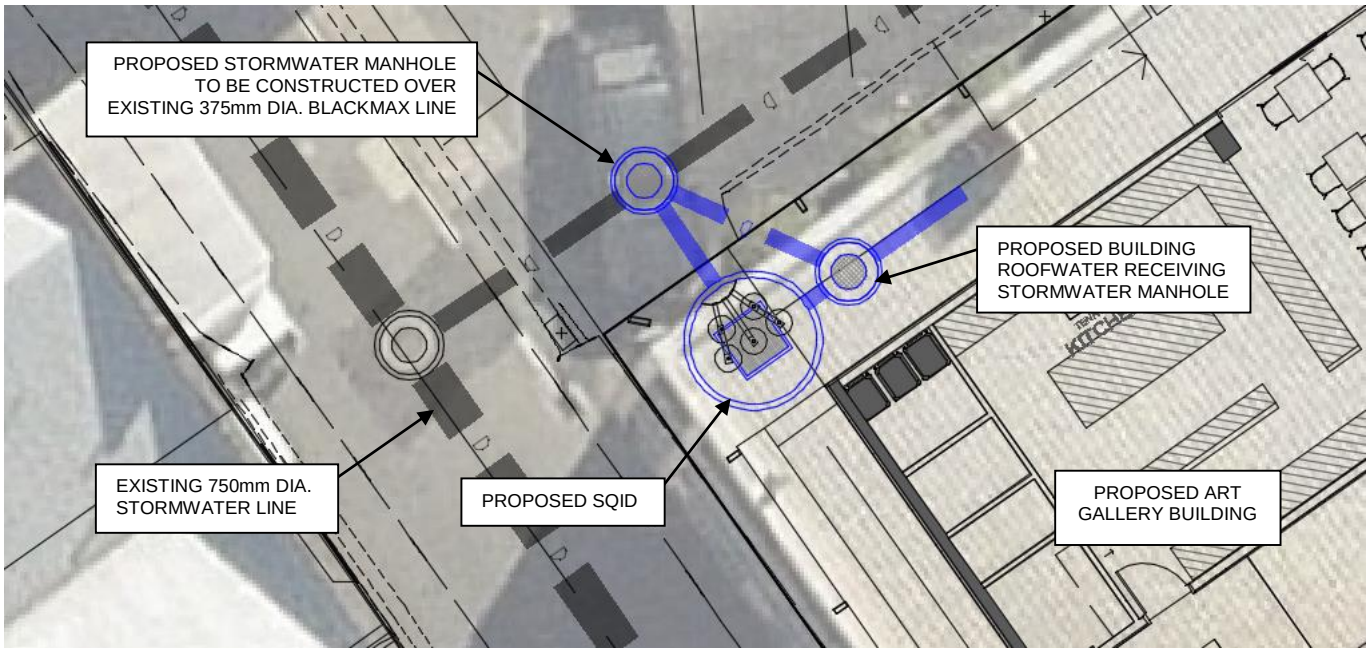

Figure 5.3 Proposed Stormwater Discharge Arrangement

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The existing roof area of the Southernmost building on the site will remain mostly unchanged by discharging to Quay Street and Quay Lane as per the existing conditions.

5.3 Quantity Mitigation

The existing site is currently in a fully developed state, with roof area of the existing three commercial buildings providing a 100% impervious surface over 220 Quay Street (Lot 100 on SP300269). The Customs House site consists of some roof areas, some hardstand at ground level, and some landscaped / grassed areas at ground level, which are not proposed to change as part of the proposed development. As the proposed scenario does not involve any increase to this impervious surface, the resulting peak discharge from the site will remain unchanged and therefore no mitigation measures (detention) are required or proposed.

5.4 Quality Treatment

Although there is to be no difference in impervious area between the existing and proposed scenarios for the subject site, the State Planning Policy (SPP) (July 2017) requires stormwater pollutants from the subject site to be appropriately treated. A single Stormwater Quality Improvement Device (SQID) has been proposed to intercept and capture the pollutants associated with the proposed development, so that the potential impacts external to the subject site will be adequately mitigated to achieve the required Water Quality Objectives (WQO's).

This section discusses:

- The identification of key stormwater pollutants associated with the proposed development;
- The Water Quality Objectives (WQO's) identified for the catchment;
- Proposed measures to mitigate the increase in pollutant export; and
- Modelling of the proposed measures and comparison to the identified WQO's.

Water quality modelling was undertaken with Model for Urban Stormwater Improvement Conceptualisation (MUSIC), generally in accordance with the Water By Design *Music Modelling Guidelines* (2010).

5.4.1 Pollutants of Concern

Pollutants typically generated during the operational phase of a development are as follows, with those presented in **bold** being the key pollutants generally targeted for treatment as part of the proposed works.

- **Litter;**
- **Sediment;**
- Oxygen demanding substances (possibly present);
- **Nutrients (N & P);**
- Pathogens/Faecal Coliforms;
- Hydrocarbons;
- Heavy Metals (often associated with the fine sediment);
- Surfactants;
- Organochlorines & organophosphates;
- Thermal Pollution; and
- pH altering substances.

5.4.2 Water Quality Objectives

The load reduction WQO's presented in below Table 5-1 have been extracted from Table B of the Queensland State Planning Policy (SPP) (July 2017):

Table 5-1: Load Reduction Water Quality Objectives.

Pollutant	Total Suspended Solids (kg/yr)	Total Phosphorus (kg/yr)	Total Nitrogen (kg/yr)	Gross Pollutants (kg/yr)
Load Reduction Target	85%	60%	45%	90%

5.4.3 Water Quality Management Strategy

To mitigate the pollutants generated by the development, a single in-ground proprietary treatment system is proposed prior to discharging into the existing piped stormwater drainage system in Quay Lane. Details of the proposed system are shown in Section 5.4.7.

5.4.4 Music Modelling Methodology

Water quality modelling of the proposed development has been undertaken using MUSIC Version 5.1, developed by eWater CRC. MUSIC enables the user to conceptualise the transfer of pollutants through a stormwater drainage system and it provides an aid in quantifying the effectiveness of the proposed stormwater quality treatment train.

5.4.5 Meteorological Data

Six minute pluviographic data was sourced from the Bureau of Meteorology (BOM). Based on the mean annual rainfall over the station's entire rainfall data period and the availability of pluviograph data, from the 24th February 1999 to 31st October 2000 was selected and adopted for modelling in MUSIC. Monthly evapotranspiration data for the period was sourced from Bureau of Meteorology and entered into the MUSIC Model.

5.4.6 Source Nodes

Source nodes utilised for the proposed catchments have been modelled based upon the proposed developed site. A summary of the source nodes are presented below:

Table 5-2: Source Node Summary

Source Node	Area (ha)	Fraction Impervious		Land Use
WQ1	0.189	100	Roof	Urban

The following screenshot from the MUSIC model shows the proposed treatment train for the above source catchments for the development:

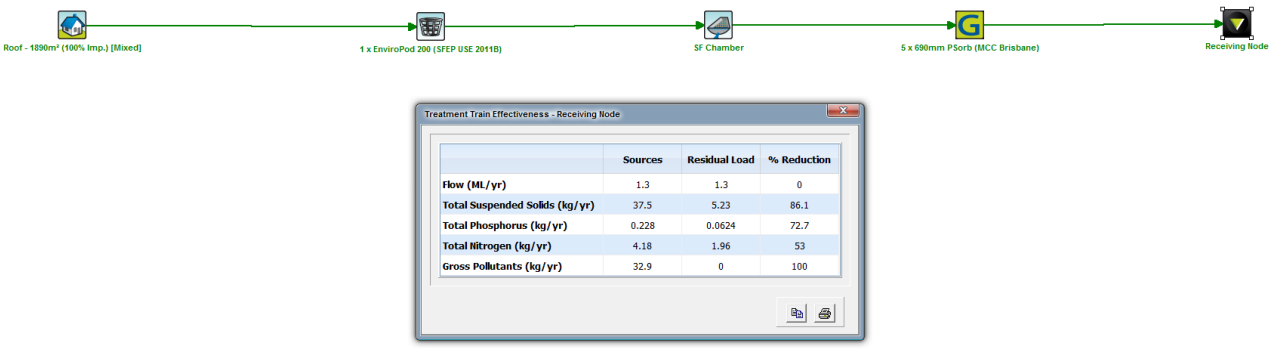

Figure 5.4 Music Model Layout

5.4.7 Treatment Node

To represent the treatment system proposed, the following treatments nodes were adopted within the MUSIC model:

- 1 x Enviropod 200; and
- Stormwater 360 Stormfilter with five 690mm PSorb Cartridges.

5.4.8 Music Modelling Results

The development has been considered holistically for water quality analysis to ensure the development meets the required water quality objectives. The results from the MUSIC model at the receiving node, including the proposed treatment measures, are shown below.

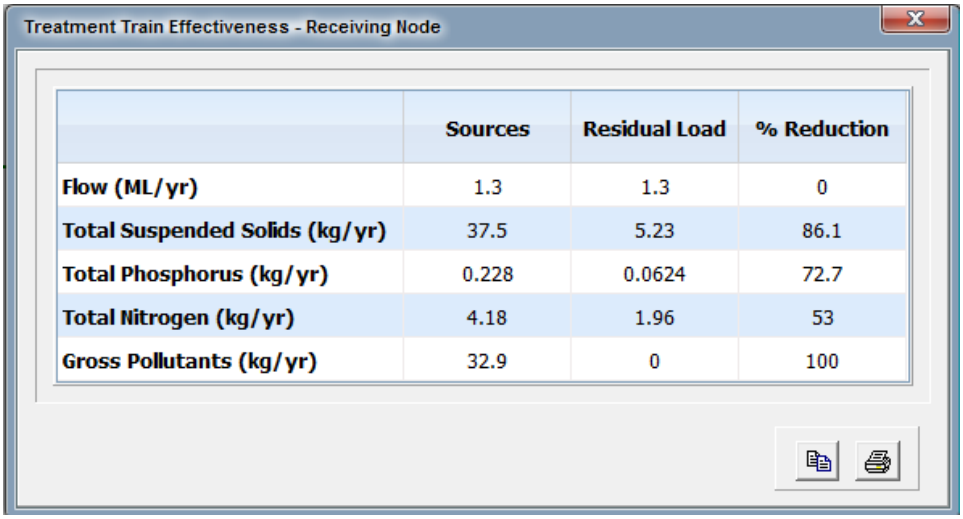

Figure 5.5 MUSIC Results – Receiving Node

The following summary table compares the MUSIC modelling analysis to the required reduction targets:

Table 5-3: Pollutant Reduction Summary (Modelled vs Target)

	Total Suspended Solids (TSS)	Total Phosphorus (TP)	Total Nitrogen (TN)	Gross Pollutants (GP)
Minimum Percentage Reductions (SSP)	85	60	45	90
Achieved Percentage Reductions	86.1	72.7	53	100
WQO's Achieved?	**Yes**	**Yes**	**Yes**	**Yes**

As can be seen within the above, the proposed Stormwater Quality Improvement Device (SQID) can effectively mitigate the expected impacts of the proposed development in accordance with the State Planning Policy – July 2017. It is recommended that these treatment elements as described above, are incorporated into the detailed design of the proposed works.

6 Parking & Access

6.1 Parking

Public parking will not be provided as part of this development, as the surrounding area consists of sufficient parking spaces to adequately service the development. Parking surrounding the site includes on-street parking on Quay Street, William Street, Denham Street and East St. Please refer to the Rockhampton CBD Redevelopment Framework and the RRC Planning Department for further details.

6.2 Delivery Vehicle Access

Delivery vehicle access (12.5m HRV) will be from the rear of the site on Quay Lane where a loading dock at the rear of the new building is proposed. Given the constrained access availability in Quay Lane, HRV vehicle swept paths have been assessed to ensure horizontal and vertical clearances are achieved. A 12.5m vehicle will reverse into the loading dock from Quay Lane to access the site. The orange line shown in figure Figure 6.1 represents a 0.5m body clearance.

Waste collection requirements have not been reviewed in this report and will be assessed separately.

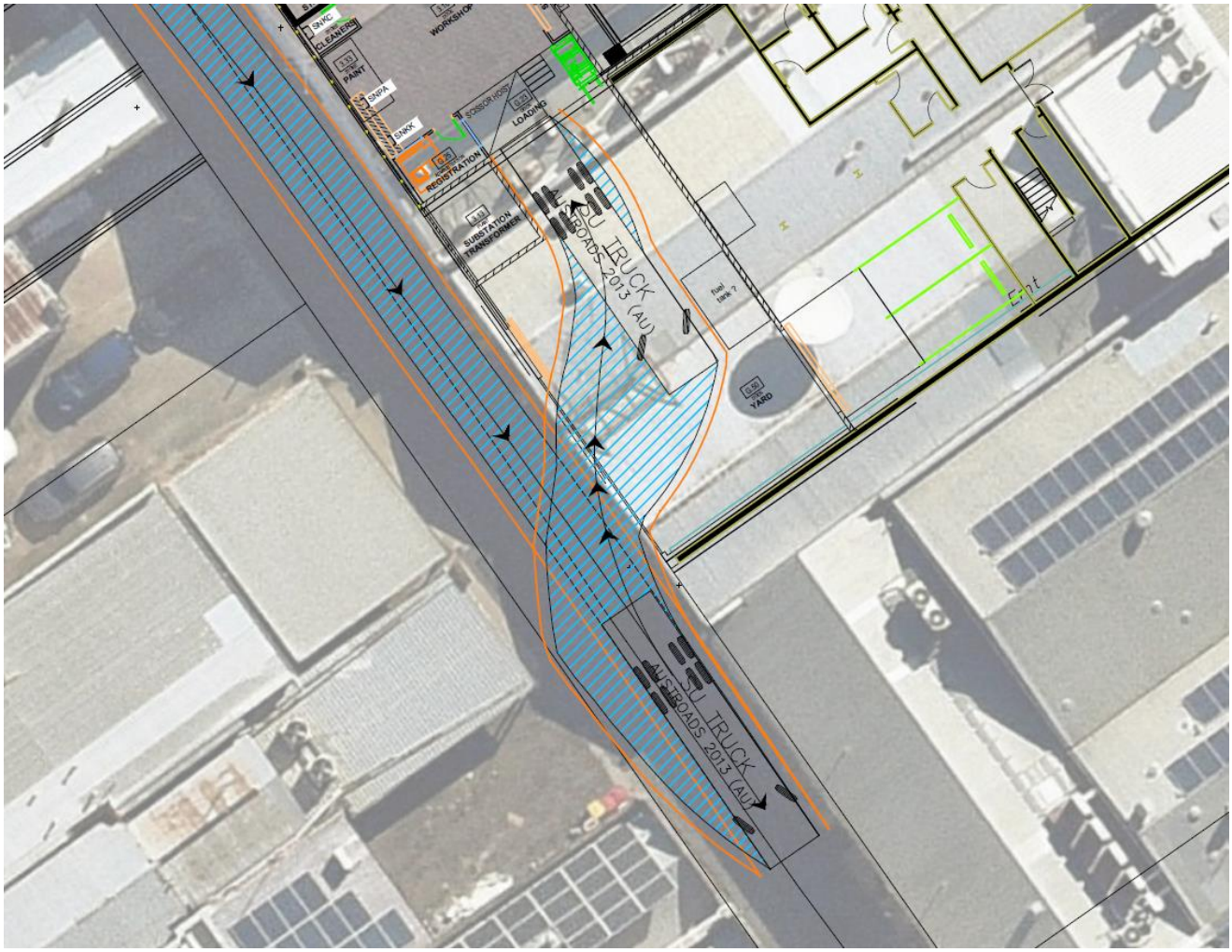

Figure 6.1 12.5m HRV Vehicle Swept Path

7 Conclusion

In conclusion, there are no insurmountable engineering issues associated with the proposed development, located at Lot 3 on RP619454 & Lot 100 on SP300269.

There is presently an acceptable design strategy for sewer and water reticulation, stormwater drainage, parking & access. Alterations to these approaches during detailed design may eventuate from further detailed analysis, however the fundamentals of the design strategy ensure that service provisions can be readily supplied to the proposed development.

All of these required engineering elements can practically be provided to the proposed development.

If you require any further information or would like to discuss this report, please don't hesitate to contact our Calibre Office in Rockhampton.

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Dated: 07 February 2019

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QUAY STREET CULTURAL PRECINCT DEVELOPMENT

Appendix A Civil Engineering Sketches

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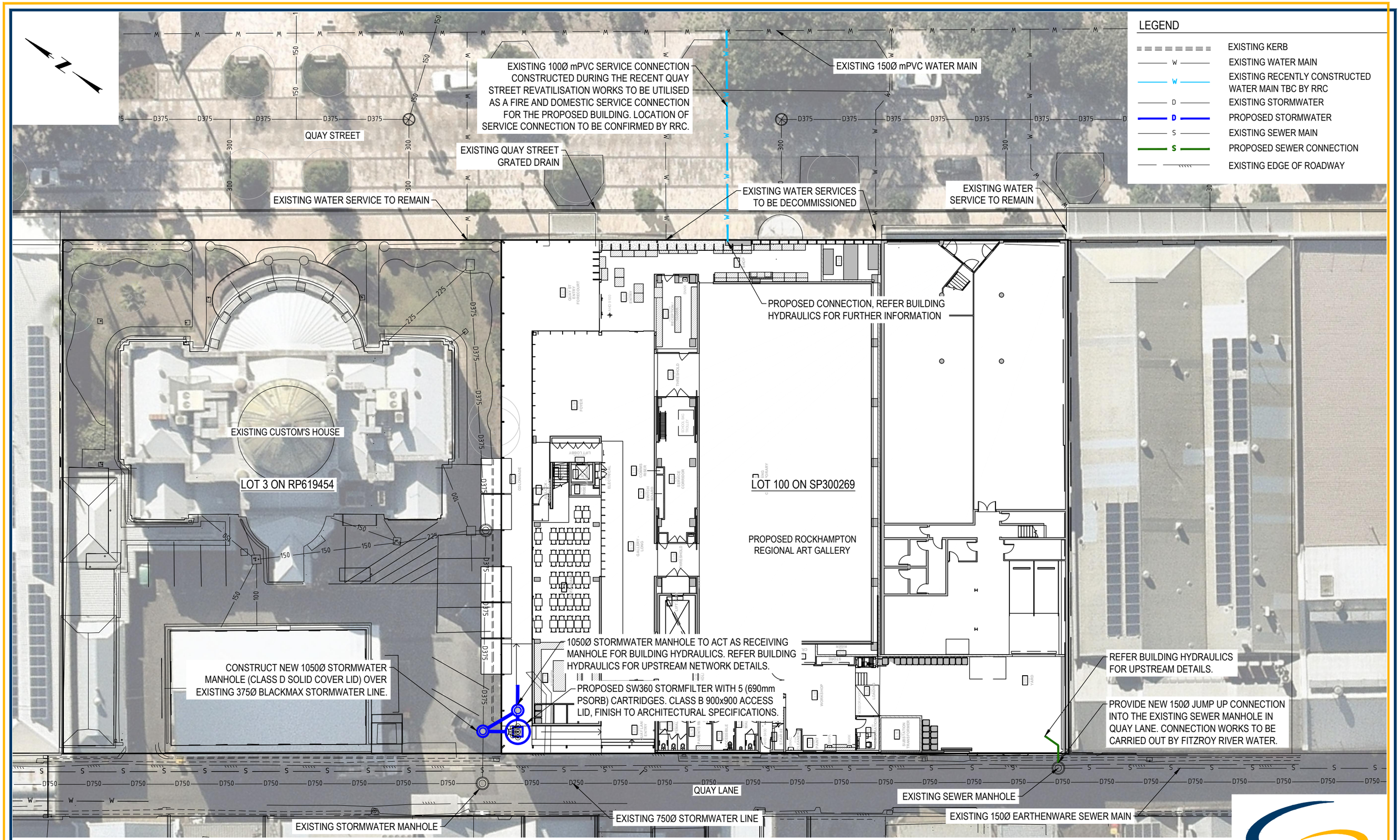

17-000551 - QUAY ST CULTURAL PRECINCT DEVELOPMENT

SK001 - PROPOSED SERVICES LAYOUT

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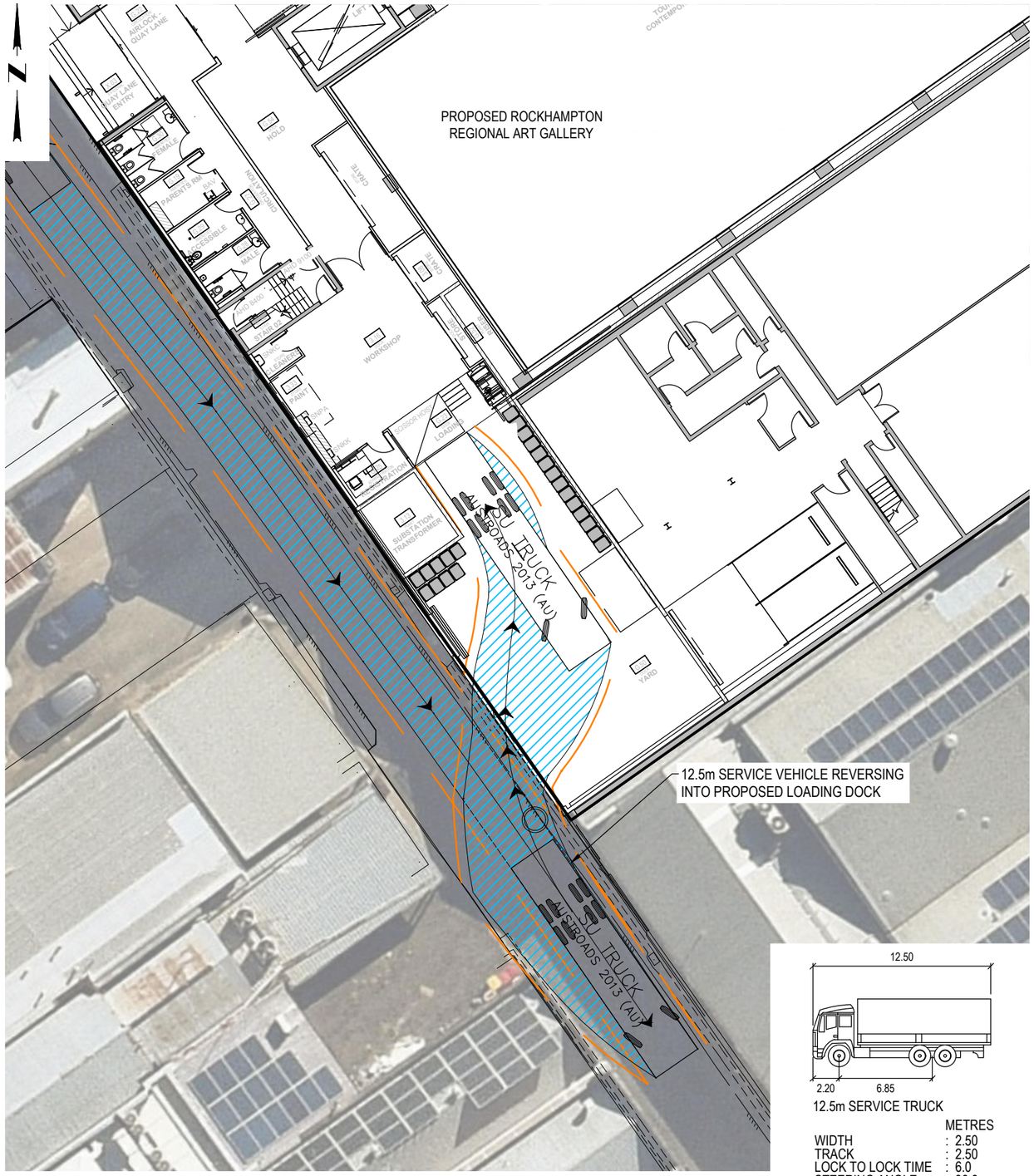
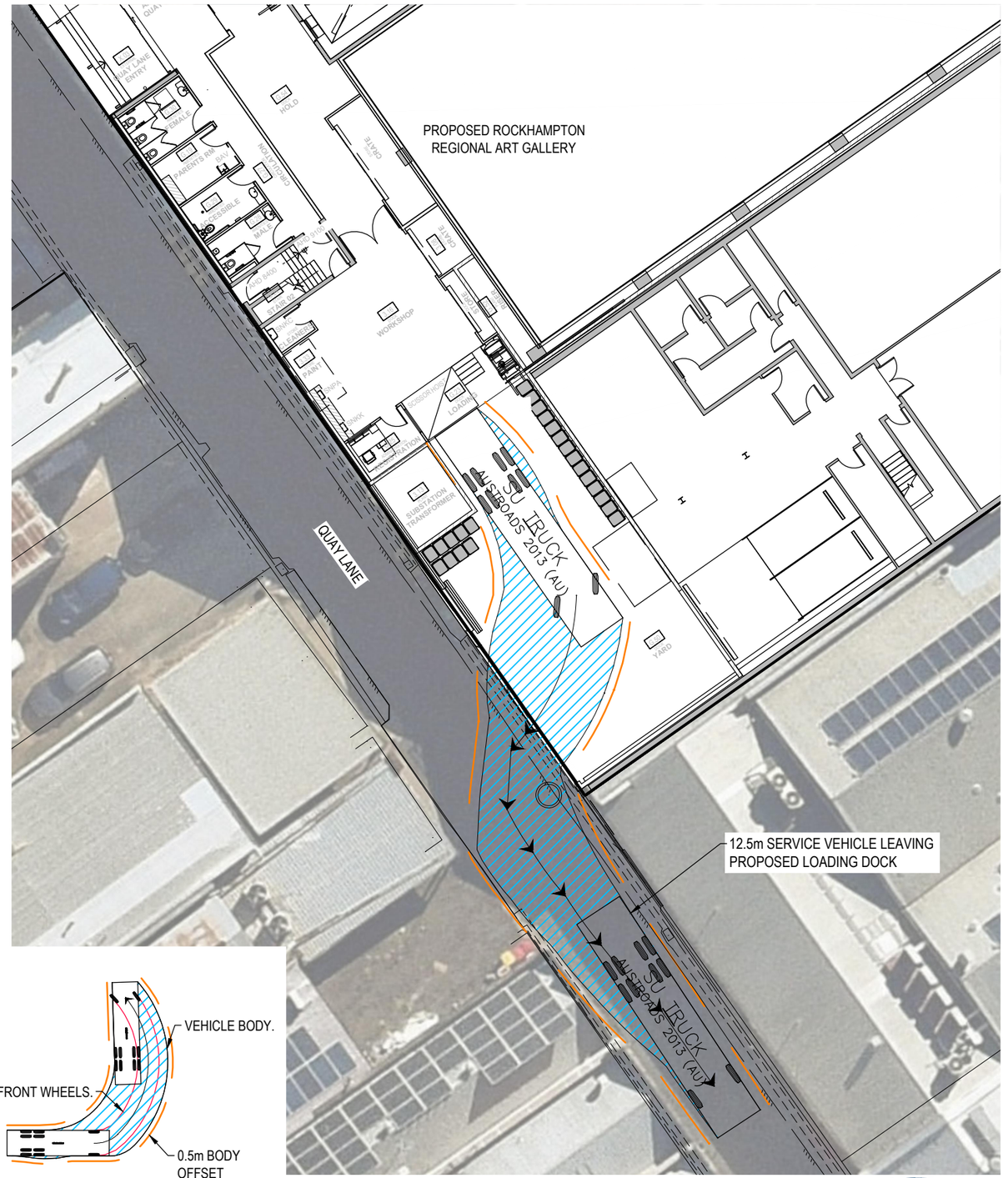
NOT TO SCALE

calibre

ROCKHAMPTON BRANCH
REFERENCE: 17-000551
REV: A DATE: 18.06.2018
DRAWN: PL





12.5m SERVICE TRUCK

	METRES
WIDTH	: 2.50
TRACK	: 2.50
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 36.6

17-000551 - QUAY ST CULTURAL PRECINCT DEVELOPMENT

SK002 - VEHICLE TURNPATH PLAN

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0 0.625 2.5
0 1.25 5.0m

1:125 (A1)
1:250 (A3)

calibre

ROCKHAMPTON BRANCH
REFERENCE: 17-000551
REV: A DATE: 18.06.2018
DRAWN: PL

QUAY STREET CULTURAL PRECINCT DEVELOPMENT

Appendix B Water Service Connection Details

ROCKHAMPTON REGIONAL COUNCIL

HYDRAULIC & FIRE SERVICES
CONSULTANTS

OUR REF: BNE17-0111

18 June 2018

Calibre Group Consulting Engineers
PO Box 1580
ROCKHAMPTON QLD 4700

Attention: Patrick Lewis
[Email: patrick.lewis@calibregroup.com]

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
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Development Permit No.: D/64-2018
Dated: 07 February 2019

Dear Patrick,

PROJECT: **QUAY STREET CULTURAL PRECINCT DEVELOPMENT - ROCKHAMPTON ART GALLERY QUAY STREET, ROCKHAMPTON**

SUBJECT: **PROPOSED WATER/ FIRE CONENCTION REQUIREMENTS**

Chris

Based on the flow and pressure tests undertaken on the Rockhampton Regional Council Water mains in the surrounding streets adjacent to the proposed new cultural Precinct it has been determined that the fire systems for this project will require the aid of a diesel pump due to the following design criteria:

- Building classifications
- Building structure and height
- Fire compartment sizes
- Separation between structures

The building will require both internal fire hydrants and will have a fire sprinkler system to the new gallery spaces.

The flow and pressure test results for Quay Street are as follows:

Static pressure:	540kpa
Full flow (36 litres per second):	510kpa
20 litres per second:	525kpa
30 litres per second:	520kpa

The current preliminary design development concept drawings are based on these flow and pressure results and obtaining a new water and fire connections from Quay Street water main where we can obtain the required flow for the fire hydrant and fire sprinkler systems.

MRP HYDRAULIC AND FIRE SERVICES CONSULTANTS PTY LTD
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PO Box 8143 Woolloongabba QLD 4102
P: (07) 3846 4379 F: (07) 5443 1136
E: accounts@mrp.com.au W: mrp.com.au
ABN: 23 126 270 326 ACN: 126 270 326
■ BRISBANE □ SUNSHINE COAST

HYDRAULIC & FIRE SERVICES CONSULTANTS

ROCKHAMPTON REGIONAL COUNCIL

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The design parameters as follows:

Fire Hydrants

Building classification:	Class 9B with Class 6 parts
Fire compartment size:	for buildings 3 storeys - larger than 1000sqm and less than 5000sqm
Flow required:	20 litres per second
Design pressure:	350kpa for attach hydrants

Fire Sprinklers

Building classification:	Class 9B with Class 6 parts
Fire sprinkler design:	light hazard
Flow required:	6 litres per second
Design pressure:	475kpa (estimate only – needs confirmation on understanding of design requirements)

Based on the flow and pressure test results and the design parameters we can achieve the required flow for both the fire hydrant and fire sprinkler systems however we can't achieve the required pressure at either the most disadvantaged fire hydrant nor the fire sprinkler estimated requirement of 475kpa and therefore a fire booster pump set is required.

The current design indicates the following infrastructure:

- Water/ fire connection from Quay Street water main
- Water / fire connection meter and valves assemblies housed in service cupboard on boundary of proposed development facing Quay Street
- Combined fire hydrant / fire sprinkler booster assembly housed within cupboard at boundary of proposed development facing Quay Street
- Combined fire hydrant / fire sprinkler booster diesel pump set housed in pump room on Quay Street side of proposed new building

Currently all indicated/ shown on the design development Hydraulic Services drawings.

Should you require any additional information please contact the undersigned direct.

Yours faithfully,

Terry McKendry
DIRECTOR

MRP HYDRAULIC AND FIRE SERVICES CONSULTANTS PTY LTD
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AHSCA

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QUAY STREET CULTURAL PRECINCT DEVELOPMENT

Appendix C Preliminary Hydraulic Plans

ROCKHAMPTON REGIONAL COUNCIL

HYDRAULIC SERVICES

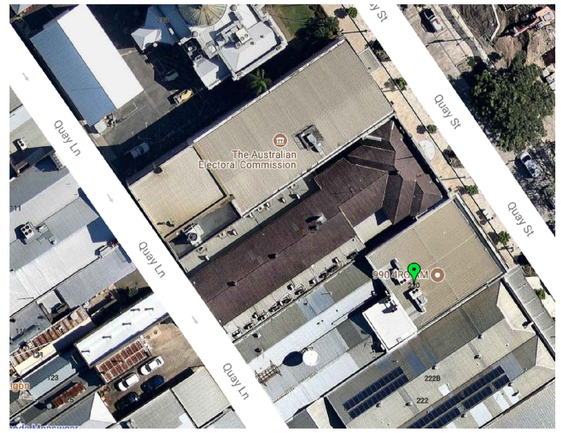
QUAY STREET CULTURAL PRECINCT DEVELOPMENT

ROCKHAMPTON ART GALLERY

212, 214 QUAY STREET, ROCKHAMPTON, QLD

Lot 5 on RP 26264 & Lot 2 on RP 605109

Rockhampton Regional Council



KEY PLAN

SCALE: NTS AT SHEET A1

PROJECT NOTES

General Notes

1. ALL INSPECTION OPENINGS TO BE BROUGHT TO THE SURFACE & CAPPED WITH A BOLTED TRAP SCREW IN A CONCRETE SURROUND TO LOCAL GOVERNMENT APPROVAL.
2. THE CONTRACTOR IS OBLIGATED TO INSPECT THE SITE & BE SATISFIED AS TO THE CONDITIONS UNDER WHICH THE WORK WILL BE CARRIED OUT PRIOR TO THE SUBMISSION OF A TENDER OFFER.
3. DO NOT SCALE DRAWINGS, REFER TO ARCHITECTURAL DRAWINGS FOR ALL SET-OUT DIMENSIONS.
4. THE CONTRACTOR SHALL ALLOW TO SUPPLY & INSTALL ALL SANITARY FIXTURES, TAPWARE & ASSOCIATED ACCESSORIES. REFER TO ARCHITECTURAL SPECIFICATION FOR SCHEDULE.
5. LAYOUTS OF SERVICE LINES, PLANT AND EQUIPMENT SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC ONLY EXCEPT WHERE FIGURED DIMENSIONS ARE PROVIDED OR CALCULABLE.
6. NO WARRANTY IS GIVEN TO THE COMPLETENESS OR ACCURACY OF EXISTING SERVICES INFORMATION WHETHER DOCUMENTED OR OTHERWISE. WHERE CONNECTION IS REQUIRED TO EXISTING SERVICES THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE PRECISE LOCATION AND DEPTH OF THE EXISTING SERVICE CONNECTION POINT PRIOR TO THE INSTALLATION OF ANY ASSOCIATED WORKS.
7. THE CONTRACTOR SHALL CO-ORDINATE ALL PIPEWORK WITH THE OTHER TRADE SERVICES PRIOR TO COMMENCEMENT OF ANY WORK.
8. ALL PIPES SHALL BE ADEQUATELY SUPPORTED & SECURED TO ADJACENT WALLS OR SLABS.
9. SUPPORTS SHALL BE GALVANIZED MILD STEEL 'UNISTRUT' CHANNEL COMPLETE WITH PURPOSE MADE GALVANIZED SPRING NUTS, FRAMING, FITTING & PIPE CLAMPS FOR EACH PIPE.
10. ALL COPPER PIPES SHALL BE SEPARATED FROM SUPPORTS BY 2mm MINIMUM THICK PVC STRIP OR SIMILAR APPROVED MATERIAL.
11. THE CONTRACTOR SHALL SUPPLY & INSTALL ALL SANITARY FIXTURES SHOWN ON THE DRAWINGS OR NECESSARY FOR THE COMPLETION OF THE PROJECT. ALLOW FOR THE SUPPLY & FIXING OF ALL FIXTURES, BOLTS, BRACKETS, PUTTY, MASTIC, SILICON FILLERS, CEMENT & SUNDRY MATERIALS NECESSARY FOR EACH INSTALLATION INCLUDING ALL CONNECTIONS TO DRAINS, WATER SERVICES ETC. GENERALLY IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.
12. ALLOW FOR ALL BENDS, SETS & INSTALLING SUFFICIENT UNIONS, FLANGES & ISOLATING VALVES FOR SATISFACTORY REMOVAL OF PIPING & FITTINGS FOR MAINTENANCE OR REPAIRS TO PRODUCE AN INSTALLATION TO THE APPROVAL OF THE SUPERINTENDENT WHETHER SUCH ITEMS ARE SHOWN ON DRAWINGS OR SPECIFIED.
13. ALLOW FOR THE COMPLETE SUPPLY & INSTALLATION OF TAPS & SUNDRY MATERIALS NECESSARY FOR THE INSTALLATION & CONNECTION IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
14. THE HYDRAULIC SERVICES CONTRACTOR SHALL BE RESPONSIBLE FOR CO-ORDINATING WITH MECHANICAL A/C SERVICE ON-SITE.
15. CONTRACTOR TO SUPPLY ON COMPLETION ALL WARRANTIES, TECHNICAL DATA, TESTING CERTIFICATES, COMPLETION & COMPLIANCE CERTIFICATES PRIOR TO HANDOVER.
16. SEAL PENETRATIONS WITH A SYSTEM CONFORMING TO AS4072.1
17. A SEPARATE HYDRAULIC SERVICES SPECIFICATION FORMS PART OF THIS DOCUMENT PACKAGE AND SHALL BE READ IN CONJUNCTION WITH THESE DRAWINGS.

Authority Requirements

1. THESE DOCUMENTS MUST BE READ IN CONJUNCTION WITH THE STAMPED APPROVED PLANS AND PLUMBING DRAINAGE AND COMPLIANCE PERMIT CONDITION (INCLUDING AMENDMENTS).
2. ALL PLUMBING AND DRAINAGE WORK OR ON-SITE SEWERAGE WORK MUST COMPLY WITH THE COUNCILS LOCAL LAWS AND POLICIES AND OTHER RELATED DEVELOPMENT PERMIT CONDITION.
3. THE CONTRACTOR SHALL PAY ALL FEES IN CONNECTION WITH APPROVALS, UTILITY PROVIDER CONSTRUCTION COSTS, TESTS & INSPECTIONS, ETC.
4. THE CONTRACTOR SHALL CARRY OUT ALL THE NECESSARY TESTING OF THE SERVICES SHOWN ON THE DRAWINGS AS REQUIRED BY THE RESPECTIVE AUTHORITIES.
5. OBTAIN CERTIFICATES FROM THE RELEVANT AUTHORITIES INDICATING SATISFACTORY COMPLETION OF SERVICES & HAND OVER TO THE SUPERINTENDENT BEFORE APPLICATION FOR CERTIFICATE OF PRACTICAL COMPLETION.
6. IF ANY DOUBTS EXIST AS TO WHETHER A SECTION OF THE DESIGN IS ABLE TO COMPLY WITH THE RELEVANT AUTHORITY'S REGULATIONS, THE SUPERINTENDENT SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF ANY WORKS. NO CONSIDERATION OF CLAIM FOR REDUNDANT WORK SHALL BE GIVEN IF THE SUPERINTENDENT IS NOT NOTIFIED.
7. CONTRACTOR TO ALLOW FOR COST OF SEWER & WATER CONNECTION TO SITE.
8. CONTRACTOR TO ALLOW ALL COST FOR PREPARATION OF 'AS CONSTRUCTED DRAWINGS' DRAWN TO THE SAME STANDARD AS APPROVED PLAN & SUBMIT TO LOCAL AUTHORITY PRIOR TO COMMENCEMENT OF FINAL INSPECTION .

Plumbing & Drainage

1. THE WHOLE OF THE PLUMBING & DRAINAGE WORKS SHALL BE IN ACCORDANCE WITH THE PLUMBING & DRAINAGE ACT 2002, NATIONAL CONSTRUCTION CODE (*PLUMBING CODE OF AUSTRALIA*), AS/NZS 3500.2:2015, & THE SPECIFIC REQUIREMENTS OF THE LOCAL AUTHORITY.
2. ALL PRIVATE SEWER DRAINAGE WORK UNDERTAKEN ON THE SITE BY THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE WORKPLACE HEALTH & SAFETY REGULATIONS
3. ALL HOUSE DRAINAGE SHALL BE 100Ø AT A GRADE OF 1:60 MINIMUM UNLESS NOTED OTHERWISE.
4. ALL VENT PIPES SHALL TERMINATE ABOVE ROOF IN ACCORDANCE WITH AS/NZS 3500.2:2015.
5. THE CONTRACTOR IS TO VERIFY THE POSITIONS OF ALL DRAINAGE PIPES & SERVICE LINES & THAT THE INVERT & SURFACE LEVELS ARE CORRECT BEFORE COMMENCING WORKS.
6. FLOOR WASTES SHALL CONSIST OF A SELF-CLEANSING 'P' TRAP & RISER WITH SCREWED CHROME PLATED BRASS GRATE SET AT A LEVEL TO ENSURE ADEQUATE DRAINAGE OF ALL FLOOR AREAS.
7. PROVIDE AN ANTI-FOAMING DEVICE TO ANY FWG RECEIVING WASTE DISCHARGE FROM LAUNDRY TUBS AND/OR WASHING MACHINES.
8. THE CONTRACTOR SHALL ALLOW TO PROVIDE TEST GATES WHERE NECESSARY FOR THE SATISFACTORY TESTING OF THE SYSTEM.
9. PROVIDE MOVEMENT CONTROL JOINTS IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS TO ACCOMMODATE ANTICIPATED MOVEMENT. (REFER GEOTECHNICAL REPORT).
10. BEDDING FOR PIPELINES TO BE WASHED 5mm SCREENING WITH A MINIMUM 150mm BELOW AND ABOVE PIPES.
11. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH AS 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER AND CERTIFICATES MADE AVAILABLE CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
12. ALL EXPOSED HYDRAULIC SERVICES PIPEWORK & FITTINGS INCLUDING TRAPS, WASTE PIPES, COVER PLATES, WATER SERVICES, VALVES & FITTINGS TO BE CHROME PLATED COPPER TUBE.

Trade Waste

1. TRADE WASTE INSTALLATION TO COMPLY WITH SEWERAGE AND WATER SUPPLY ACT AND COUNCIL REQUIREMENTS.

Stormwater

1. THE WHOLE OF THE STORMWATER DRAINAGE WORKS SHALL BE IN ACCORDANCE WITH THE NATIONAL CONSTRUCTION CODE (*PLUMBING CODE OF AUSTRALIA*), AS/NZS 3500.3:2015, & THE LOCAL GOVERNMENT WORKS DEPARTMENT GUIDELINES & REGULATIONS, & THE QUEENSLAND DEVELOPMENT CODE.
2. ALL DOWNPIPES AND STORMWATER DRAINAGE SHALL BE FREE OF LEAKS WHEN TESTED IN ACCORDANCE WITH AS/NZS 3500.3:2015 (SECTION 10).
3. PROVIDE MOVEMENT CONTROL JOINTS IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS TO ACCOMMODATE ANTICIPATED MOVEMENT. (REFER GEOTECHNICAL REPORT).
4. BEDDING FOR PIPELINES TO BE WASHED 5mm SCREENING WITH A MINIMUM 150mm BELOW AND ABOVE PIPES.
5. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH AS 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER AND CERTIFICATES MADE AVAILABLE CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.

Water Services

1. THE WHOLE OF THE WATER SERVICE WORKS SHALL BE IN ACCORDANCE WITH THE NATIONAL CONSTRUCTION CODE (*PLUMBING CODE OF AUSTRALIA*), AS/NZS 3500.1:2015 & THE SPECIFIC REQUIREMENTS OF THE LOCAL AUTHORITY.
2. ALLOW TO SUPPLY & RETICULATE 15Ø COLD WATER SUPPLY TO A SINGLE FIXTURE & 20Ø OR GREATER TO TWO OR MORE FIXTURES (UNO).
3. HOT WATER RETICULATION PIPEWORK SHALL BE 15Ø LAGGED TUBING TO EACH FIXTURE OUTLET (UNO). NOTE THAT A 20Ø CONNECTION SHALL BE REQUIRED TO BOTH THE INLET & THE OUTLET OF THE HOT WATER UNIT (UNO).
4. WATER SUPPLY PIPE SIZES SPECIFIED ON THESE DRAWINGS ARE BASED ON CALCULATIONS FOR PIPES HAVING EQUIVALENT DIMENSIONAL AND FLOW CHARACTERISTICS TO THAT OF TYPE B COPPER TUBE. WHERE ALTERNATIVE MATERIALS ARE USED AN EQUIVALENT PIPE SIZE APPROPRIATE TO THE MATERIAL BEING USED SHALL BE SELECTED.
5. PROVIDE A PLV WHERE WATER PRESSURE EXCEEDS 500kPa AT ANY OUTLET.
6. ENSURE ALL BACKFLOW PREVENTION DEVICES ARE INSTALLED TO MEET THE REQUIREMENTS OF THE LOCAL AUTHORITIES & AS/NZS 3500-1, SECTION 4.
7. WHEREVER POSSIBLE PIPES SHALL BE RUN PARALLEL WITH THE ADJACENT STRUCTURE AND/OR SERVICES. ALL BRANCH LINES TO BE TAKEN OFF AT RIGHT ANGLES.
8. SHORT PIPE EXTENSION PIECES FROM WALLS CONNECTING FIXTURES SHALL BE FITTED WITH A UNION CONNECTION TO ALLOW FOR REMOVAL OF FIXTURES.
9. ON COMPLETION ALL PIPING SHALL BE SUBJECT TO A PRESSURE TEST OF 1500KPA FOR A PERIOD OF TWO HOURS. ANY DEFECTS FOUND IN THE SYSTEM SHALL BE REMEDIED & THE TEST REAPPLIED.
10. WATER METERS SHALL BE PURCHASED FROM LOCAL AUTHORITY OR LOCAL AUTHORITY SUPPLIER.
11. METER AND VALVE PATH BOXES INSTALLED IN HARDPAVED AREAS SHALL BE FITTED WITH CAST IRON ACCESS COVERS.

Non-Drinking Water Services and Outlets

1. ALL PIPES TO BE IDENTIFIED BY PURPLE COLOUR IN ACCORDANCE WITH AS 2700.
2. WHERE PIPES ARE NOT INTEGRALLY COLOURED PURPLE, IDENTIFICATION MAY BE ACHIEVED BY MEANS OF CLOSE FITTING DURABLE SLEEVING, NETTING OR SPIRALLY WRAPPED TAPE.
3. ALL BURIED PIPES SHALL HAVE IDENTIFICATION TAPE COMPLYING WITH AS 2648.1 AND MARKED WITH THE FOLLOWING.
   3.1. CONTRASTING PURPLE LETTERING INSTALLED ON TOP OF THE PIPE, RUNNING LONGITUDINALLY, AND FASTENED TO THE PIPE AT NOT MORE THAN THAN 3m INTERVALS.
   3.2. THE FOLLOWING STATEMENT IN ACCORDANCE WITH AS 1345: 'RECYCLED OR RECLAIMED - WATER - DO NOT DRINK'
4. EXTERNAL HOSE TAPE OUTLETS SHALL COMPLY WITH THE FOLLOWING:
   4.1. THEY SHALL BE CLEARLY MARKED WITH EITHER A 'WARNING SIGN' IN ACCORDANCE WITH AS/NZS 3500.1 (Amdt.1) FIGURE 9.2. OR 'PROHIBITION SIGN' IN ACCORDANCE TO AS1319.
   4.2. THEY SHALL BE OF A TYPE THAT HAS A REMOVABLE HANDLE EXCEPT WHERE THE OUTLET IS INSTALLED 1200mm OR MORE ABOVE FINISHED SURFACE LEVEL.
   4.3. THEY SHALL BE COLOURED, POWDER COATED PURPLE.
5. OTHER OUTLETS INCLUDING FIRE SERVICE OUTLETS:
   5.1. ALL OTHER OUTLETS SHALL BE CLEARLY MARKED WITH A 'WARNING SIGN' IN ACCORDANCE WITH AS/NZS 3500.1 (Amdt.1) FIGURE 9.2.

Materials

1. WATER SUPPLY PIPE SIZES SPECIFIED ON THESE DRAWINGS ARE BASED ON CALCULATIONS FOR PIPES HAVING EQUIVALENT DIMENSIONAL AND FLOW CHARACTERISTICS TO THAT OF TYPE B COPPER TUBE. WHERE ALTERNATIVE MATERIALS ARE USED AN EQUIVALENT PIPE SIZE APPROPRIATE TO THE MATERIAL BEING USED SHALL BE SELECTED.
2.

COLD WATER	COPPER TYPE 'B'*
HOT WATER	COPPER TYPE 'B'*
SANITARY DRAINAGE \ PLUMBING	uPVC DWV
TRADE WASTE	HDPE
STORMWATER	uPVC DWV
FIRE (IN-GROUND)	uPVC PRESSURE PIPE CLASS 'M' OR 'O'
FIRE (ABOVE-GROUND)	GALVANISED STEEL
GAS (IN-GROUND)	CROSS LINKED POLYETHYLENE
GAS (ABOVE-GROUND)	COPPER TYPE 'B'

* PIPE AND FITTING MATERIALS MAY BE SUBSTITUTED PROVIDED ALTERNATIVE MATERIALS ARE AUTHORIZED FOR USE IN ACCORDANCE WITH THE PLUMBING CODE OF AUSTRALIA (PCA) & WRITTEN APPROVAL OF HYDRAULIC SERVICES CONSULTANT.
FOR WATER SERVICES REFER ALSO: AS/NZS3500.1 SECTION 2 AND APPENDIX B – ACCEPTABLE PIPE AND FITTINGS.

Typical Warning Signs & Prohibition Signs

MP4.1 - Sustainable Buildings (Class 1 & 2)

1. CONTRACTOR TO ENSURE BUILDING HYDRAULICS SERVICES ARE ENERGY EFFICIENT & WATER EFFICIENT IN ACCORDANCE WITH THE MANDATORY PROVISIONS OF MP4.1 - SUSTAINABLE BUILDINGS.

P4. ALL SHOWER ROSES TO HAVE A MIN 3-STAR WATER EFFICIENCY LABELLING & STANDARDS (WELS) RATING.

P5. ALL TOILET CISTERNS
   a) HAVE A DUAL FLUSH FUNCTION & 4-STAR WELS RATING
   b) ARE COMPATIBLE WITH THE SIZE OF THE TOILET BOWL TO ALLOW PROPER FUNCTIONING OF THE TOILET

P6. TAP WARE HAS A MINIMUM 3-STAR WELS RATING FOR TAPS SERVING
   a) Laundry tubs; and
   b) KITCHEN SINKS; and
   c) BASINS

NOTE: PART 6 NOTE APPLICABLE TO ALLITERATIONS & ADDITIONS TO EXISTING BUILDINGS

Fire Services

1. FIRE HYDRANT SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH AS2419.
2. HYDRANT LANDING VALVES SHALL BE COMPATIBLE WITH QLD ROUND THREAD PATTERN
3. ATTACH NOTICE OF TEST/WORKING PRESSURES & BLOCK PLAN OF INSTALLED FIRE SERVICES SYSTEM WITHIN BOOSTER CABINET IN ACCORDANCE WITH AS2419.1 SECTION 7
4. NON CERTIFIED MATERIAL USED FOR THE SOLE PURPOSE OF A FIRE SERVICE INSTALLATION SHALL BE INSTALLED DOWNSTREAM OF A TESTABLE BACKFLOW PREVENTION DEVICE AND/OR AS DIRECTED BY THE LOCAL AUTHORITY.
5. EXTERNAL HYDRANT SHALL BE POSITIONED NOT LESS THAN 10m FROM ANY PART OF THE BUILDING UNLESS PROTECTED BY A STRUCTURE HAVING AN FRL OF 90/90/90 WHICH EXTENDS 2m EITHER SIDE OF THE HYDRANT AND 3m ABOVE FINISHED GROUND LEVEL (UNLESS INSTRUCTED OTHERWISE).
6. HYDRANTS (INCLUDING FIRE BRIGADE BOOSTER ASSEMBLIES) SHALL BE POSITIONED NOT LESS THAN 10m AWAY FROM HIGH VOLTAGE ELECTRICAL EQUIPMENT, LPG CYLINDERS & OTHER COMBUSTIBLE STORAGE.
7. HYDRANT SYSTEM SHALL BE IDENTIFIED AND SUPPORTED IN ACCORDANCE WITH AS2419.1 2005 CLAUSE 8.6
8. FIRE SYSTEM PUMPS AND ASSOCIATED EQUIPMENT SHALL BE PROVIDED IN ACCORDANCE WITH AS2941.
9. FIRE HOSE REEL SYSTEMS SHALL BE PROVIDED IN ACCORDANCE WITH AS2441 & AS1221
10. FIRE HYDRANTS AND FIRE HOSE REELS MUST BE SEALED. THE SEAL MAY ONLY BE BROKEN FOR FIRE FIGHTING OR MAINTENANCE PURPOSES.
11. FINAL FLOW AND PRESSURE TEST AND PERFORMANCE CERTIFICATION OF ANY FIRE SYSTEM ASSOCIATED WITH THIS DEVELOPMENT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
12. PIPE AND PIPE FITTINGS SHALL BE ADEQUATELY RESTRAINED WITH THRUST BLOCKS. THRUST BLOCKS SHALL BE STRICTLY INSTALLED IN ACCORDANCE WITH AS3500.1 CLAUSE 5.9. PLUMBING CONTRACTOR TO SEEK ADVICE FROM A QUALIFIED GEO-TECHNICAL ENGINEER FOR THE CONSTRUCTION OF THRUST BLOCKS

Building Information

BUILDING CLASSIFICATION	
STOREYS CONTAINED	
SOIL CLASSIFICATION	

Hydrant System Design Parameters

BUILDING FLOOR AREA	>500m² <1000m²
LARGEST FIRE COMPARTMENT FLOOR AREA	>500m² <1000m²
NUMBER OF FIRE HYDRANTS REQUIRED TO FLOW SIMULTANEOUSLY	1 (@ 10l/s)

NCC Vol. 1 Section J

1. HOT WATER SUPPLY SYSTEMS TO SATISFY THE REQUIREMENTS OF NCC SECTION J(7.2) AND AS3500.4 SECTION 8.

SYMBOLS

- SERVICE No.
- SERVICE NAME
- SERVICE SIZE
- : DOWNPIPE SPREADER
- : HOT & COLD WATER POINT
- : WATER POINT
- : STOP VALVE
- : ISOLATION VALVE
- : ISOLATION VALVE IN PATH BOX
- : PRESSURE LIMITING VALVE
- : WATER METER
- : NON-RETURN VALVE or CHECK VALVE
- : THERMOSTATIC MIXING VALVE
- : TEMPERING VALVE
- : BEAM PENERATION
- : HOSE COCK
- : PUMP
- : 36m FIRE HOSE REEL
- : DUAL PILLAR HYDRANT
- : REDUCE PRESSURE ZONE DEVICE ASSEMBLY INCLUDING ISOLATION VALVE AND LINE STRAINER
- : END CAP
- : TUNDISH
- : AIR ADMITTANCE VALVE
- : DROPPER
- : RISER / WASTE POINT
- : BUCKET TRAP

LINETYPES - EXISTING

- SEWER

LINETYPES - PROPOSED

- CAST IN PIPEWORK
- COLD WATER
- FIRE SERVICE
- HOT WATER
- SANITARY DRAINAGE / PLUMBING
- STORMWATER
- TEPID WATER
- TW TRADEWASTE
- VENT
- NUWB NEW UTILITY WATER BRANCH

ABBREVIATIONS

AAV	: Air Admittance Valve	IOS	: Inspection Outlet To Surface
B	: Basin	IV	: Isolation Valve
BDO	: Balcony Drain Outlet	IWD	: Independent Waste Dropper
BT	: Bucket Trap	MD	: Medium Duty
BWU	: Boiling Water Unit	MH	: Manhole
CM	: Coffee Machine	ORG	: Overflow Relief Gully
CON	: Connector	POLY	: Polythene
CWD	: Cold Water Dropper	PVC	: Polyvinyl Chloride
CWR	: Cold Water Riser	RWO	: Rain Water Outlet
CS	: Cleaners Sink	RV	: Relief Vent
CV	: Check Valve	RPZD	: Reduced Pressure Zone Device
CU	: Copper	SDP	: Syphonic Down Pipe
DF	: Drinking Fountain	SEW	: Sewer
DP	: Down Pipe	SHR	: Shower
DPH	: Double Pillar Hydrant	SK	: Sink
DW	: Dishwasher	SL	: Surface Level
EGO	: Eaves Gutter Outlet	SMH	: Sewer Manhole
e	: Existing	SP	: Surcharge Pit
FFL	: Finished Floor Level	SSD	: Subsoil Drain
FFP	: First Flush Pit	ST	: Stack
FH	: Fire Hydrant	STV	: Stack Vent
FHR	: Fire Hose Reel	STY	: Safe Tray
FSD	: Fire Services Dropper	SW	: Stormwater Drain
FSL	: Finished Surface Level	SWMH	: Stormwater Manhole
FU	: Fixture Unit Rating	TD	: Tundish
FWG	: Floor Waste Gully	TG	: Test Gate
G	: Gully	TMV	: Thermostatic Mixing Valve
GIT	: Grease Interceptor Trap	TV	: Tempering Valve
GTV	: Grease Trap Vent	TWV	: Trade Waste Vent
HC	: Hose Cock	UR	: Urinal
HW	: Hot Water	UPVC	: Unplasticised Polyvinyl Chloride
GTV	: Grease Trap Vent	VP	: Vent Pipe
HWU	: Hot Water Unit	VPR	: Vent Pipe Riser
HV	: Hydrant Valve	VC	: Vent Cowl
HYD	: Hydrant	WC	: Water Closet
IC	: Inspection Chamber		
IL	: Invert Level		
IO	: Inspection Outlet		

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

Dated: 07 February 2019

DATE	STAGE	DESCRIPTION	REV. No.	AUTH.
06.06.18	DD	DESIGN DEVELOPMENT ISSUE	02	TM
25.05.18	DD	50% DESIGN DEVELOPMENT ISSUE	01	TM

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BSA: 1137134 ABN: 23 126 270 326 QBCC: 1137134

VERIFIED BY: DATE

DESIGNER: TERRY McKENDRY DATE: MAY 2018

PROJECT DESCRIPTION & ADDRESS

QUAY St CULTURAL PRECINCT DEVELOPMENT
ROCKHAMPTON ART GALLERY
212, 214 QUAY STREET
ROCKHAMPTON QLD

HYDRAULIC SERVICE SHEET DESCRIPTION

COVER SHEET

-

PRELIMINARY REVIEW

NOT FOR APPROVAL, TENDER OR CONSTRUCTION

PROJECT NUMBER	SCALE	SHEET SIZE
BNE17-0111	NTS	A1

SHEET NUMBER	REVISION NUMBER
H-101	02

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SYPHONIC STORM WATER AND GRAVITY STORM WATER TO CIVIL DETENTION & GROSS POLLUTANT TRAP. LOCATION TO BE CONFIRMED BY CIVIL ENGINEER AND ARCHITECT

AHD 8600

AHD 9000

AHD 9100

AHD 8400

AHD 8270

1:20

1:13

1500 R.C.C SEWER

COLONNADE

CAFE

BINS

KITCHEN

AIRLOCK - COLONNADE

STAIR 01

LIFT

LIFT LOBBY

FUNCTIONS - FOYER

QUAY ST ENTRY FORECOURT

AIRLOCK - ENTRY

RECEPTION / CLOAK

SHOP

QUAY LANE ENTRY

FEMALE

PARENTS

HALL

MALE

STAIR 02

STORE - CLEANERS

DOCK - HOLD / WORKSHOP

REGISTRATION

DOCK - LOADING

SUBSTATION TRANSFORMER

WASTE

SERVICE ENTRY

GALLERY - LONG

ART LIFT

THRESHOLD

SERVICE CORRIDOR

GALLERY - TOURING CONTEMPORARY

DRY LIFT PIT (450x450mm) WITH Ø150 DRAIN TO Ø225 INSPECTION RISER WITHIN BOH AREA FOR PUMPING OUT

DRY LIFT PIT (450x450mm) WITH Ø150 DRAIN TO Ø225 INSPECTION RISER WITHIN BOH AREA FOR PUMPING OUT

100Ø PVC @ 1:60 min

1000 HDPE @ 1:60min

1000 PVC @ 1:60 min

1500 PVC @ 1:150 min

2000L HALGAN MGTS2000 SERIES IN GROUND GREASE ARRESTOR COMPLETE WITH EXTRA HEAVY DUTY CLASS 'D' LIDS AND FRAMES

FOX DIVERSION VALVE TO BUNDED WASH DOWN AREA (NOTE WASH DOWN AREA UNROOFED, STORMWATER DISCHARGE TO STORMWATER, WHEN HOSE TAP ENGAGED, THE WASTE DISCHARGE TO BE DIVERTED TO TRADE WASTE)

STORMWATER TO DISCHARGE TO CIVIL OR KERB AND CHANNEL IN QUAY LANE. TO BE CONFIRMED WITH CIVIL ENGINEER.

1500 PVC @ 1:150 min

NEW 150Ø SANITARY DRAINAGE CONNECTION STUB INTO EXISTING MANHOLE (BY CIVIL)

eSMH

GRATED DRAIN (450x450mm) TO PUMP ROOM

BUNDED (450x450mm) GRATED PIT FOR SPRINKLER VALVE TEST DRAINS

ROCKHAMPTON REGIONAL COUNCIL

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BSA: 1137134 ABN: 23 126 270 326 QBCC: 1137134

VERIFIED BY: DATE

DESIGNER: TERRY McKENDRY DATE: MAY 2018

PROJECT DESCRIPTION & ADDRESS

QUAY St CULTURAL PRECINCT DEVELOPMENT
ROCKHAMPTON ART GALLERY
212, 214 QUAY STREET
ROCKHAMPTON QLD

HYDRAULIC SERVICE SHEET DESCRIPTION

GROUND
DRAINAGE LAYOUT
-

PRELIMINARY REVIEW
NOT FOR APPROVAL, TENDER OR CONSTRUCTION

PROJECT NUMBER	SCALE	SHEET SIZE
BNE17-0111	1:100	A1

SHEET NUMBER	REVISION NUMBER
H-201	02

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10 09 08 07 06 05 04 03 02 01

A B C D E F G

AHD 8600 · 1:20 · AHD 9000 · AHD 9100 · AHD 8400 · AHD 8270

COLONNADE

BINS · KITCHEN · RESTAURANT · AIRLOCK - COLONNADE · STAIR 01 · LIFT · LOBBY · FUNCTIONS - FOYER · QUAY ST ENTRY FORECOURT

40Ø CW METER TO CAFE IN CEILING WITH A/P. AMR TYPE METER FOR TRADE WASTE MONITORING. REMOTE READ METER PANEL LOCATED AT LOADING DOCK. SIZE OF KIT METER & SUPPLY TBC ON RECEIPT OF KIT PLANS.

QUAY LANE ENTRY · AIRLOCK - QUAY LANE · GALLERY - LONG · AIRLOCK - ENTRY

TMV RECESS IN STAINLESS STEEL CABINET IN WALL BEHIND DOOR SWING COMPLETE WITH IV'S

FEMALE · PARENTS RM · ACCESS · MALE · HOLD · LIFT 2 ART · THRESHOLD · SERVICE CORRIDOR · THRESHOLD · RECEPTION / CLOAK

STIEBEL ELTRON DHCE 6/50 INSTANTANEOUS SINGLE PHASE HOT WATER UNIT UNDER (7.1 KW 30 AMPS). PROVIDE IV ON CW SUPPLY BELOW BENCH

SHOP

DUAL PILLAR FIRE HYDRANT WITHIN RECESS WITH EXTERNAL ACCESS DOORS

STAIR 02 · STORE - CRATE · STORE - CLEANERS · DOCK - HOLD / WORKSHOP · PLANT · REGISTRATION · DOCK - LOADING · SUBSTATION TRANSFORMER · WASTE · SERVICE ENTRY · GALLERY - TOURING CONTEMPORARY

FIRE HYDRANT PUMP - KWIKFLO MODEL (2000mm x 600mm FOOTPRINT) COMPLETE WITH JACKING PUMP (400mm x 400mm FOOTPRINT) ADJACENT. ENSURE MINIMUM OF 1000mm CLEARANCE IS MAINTAINED AROUND PUMP WITHIN PLANT ROOM

CONTROL PANEL TO FIRE PUMP

SPRINKLER VALVES ASSEMBLY 2600mm x 500mm SPATIAL ALLOWANCE TO SOUTHWEST WALL(S) OF PLANT ROOM. ENSURE 1000mm OF CLEARANCE IS MAINTAINED IN FRONT OF VALVES ASSEMBLY

COMBINED FIRE HYDRANT AND FIRE SPRINKLER BOOSTER ASSEMBLY WITHIN CABINET RECESS. ACCESS TO BOOSTER ASSEMBLY TO BE FROM QUAY STREET VIA CUPBOARD DOORS WITH APPROPRIATE SIGNAGE. FRL 90/90/90 REQUIRED 3m ABOVE AND 2m EITHER SIDE FOR COMPLIANCE WITH AS 2419.

JACKING PUMP

DOUBLE DOOR ACCESS INTO PLANT ROOM 1600mm WITH APPROPRIATE SIGNAGE. REQUIRED FOR BRIGADE ACCESS AND TO REMOVE PUMP IF EVER NECESSARY

PROVIDE DUAL PILLAR HYDRANT WITHIN BOOSTER CABINET TO PROVIDE COVERAGE TO GROUND FLOOR FROM THE QUAY STREET

FIRE BRIGADE TRUCK HARDSTAND WITHIN 8M OF BOOSTER ASSEMBLY

1006 · 600 · 1905 · 1005 · 900 · 1600 · 2450

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/64-2018

Dated: 07 February 2019

DATE	STAGE	DESCRIPTION	REV. No.	AUTH.
06.06.18	DD	DESIGN DEVELOPMENT ISSUE	02	TM
23.05.18	DD	50% DESIGN DEVELOPMENT ISSUE	01	TM

ARCHITECT \ BUILDING DESIGNER

CONRAD GARGETT

26/240 QUEEN STREET
BRISBANE, QLD, 4000
P: 07 3229 3555

CLIENT

Rockhampton Regional Council

HYDRAULIC CONSULTANT

MRP HYDRAULIC & FIRE SERVICES CONSULTANTS PTY LTD

■ BRISBANE □ SUNSHINE COAST

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W: mrp.com.au

BSA: 1137134 ABN: 23 126 270 326 QBCC: 1137134

VERIFIED BY: · DATE

DESIGNER: TERRY McKENDRY · DATE: 10.03.14

PROJECT DESCRIPTION & ADDRESS

QUAY St CULTURAL PRECINCT DEVELOPMENT
ROCKHAMPTON ART GALLERY
212, 214 QUAY STREET
ROCKHAMPTON QLD

HYDRAULIC SERVICE SHEET DESCRIPTION

GROUND
WATER LAYOUT
-

PRELIMINARY REVIEW
NOT FOR APPROVAL, TENDER OR CONSTRUCTION

PROJECT NUMBER: BNE17-0111 · SCALE: 1:100 · SHEET SIZE: A1

SHEET NUMBER: H-301 · REVISION NUMBER: 02

W:\Survey\Projects\BNE17-0111 Quay Street Cultural Precinct Development - Rockhampton Art Gallery\3_MRP\Dwg_Current Drawing Files - saved by Steven - plot by - Steven Campbell