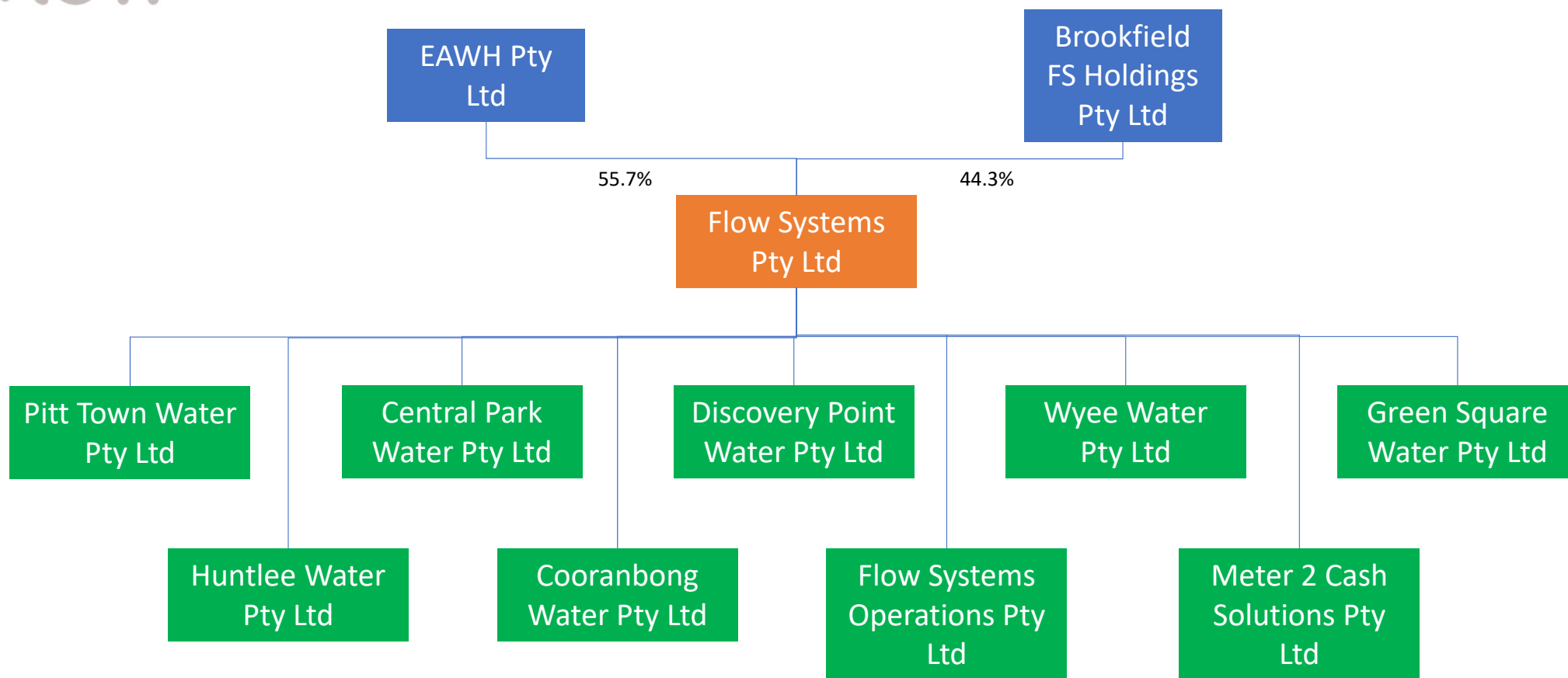




Ownership Structure



Position Description

Position Title	Managing Director/Chief Executive Officer
Reporting to	Board of Directors
Functional team	Executive
Location	Sydney

PURPOSE OF ROLE

The primary purpose of this role is to manage the Flow Systems* Group including its businesses, senior executive staff, and key business relationships to implement the strategies required to achieve the corporate objectives as set out in the Business Plan.

(*to be read as including all Flow Systems' subsidiaries)

KEY RELATIONSHIPS

Direct Reports

- Chief Operating Officer
- Exec Manager Business Development
- Exec Manager Communications & Marketing

Internal stakeholders

- Flow Systems Exec team
- Brookfield Infrastructure
- Board members

External stakeholders

- Clients
- Government
- Regulatory bodies
- Public Utilities
- Regulators (IPART, EPA)
- Key contractors & suppliers

WHS ACCOUNTABILITIES

- Executing a duty of care that ensures the health, wellbeing and safety of self and others at all times
- As a member of the Executive, demonstrating leadership in safe workplace practices consistent with Flow Systems' WHS Policy and Management System procedures
- Proactively identifying unsafe workplace conditions and/or practices and taking preventive and corrective actions as applicable

KEY RESPONSIBILITIES

- Ensure ongoing re-appraisal and updating of Flow Systems' Business Plan and annual budgets
- Provide leadership and direction to the Executive management team to meet the Business Plan targets and objectives
- Review existing corporate policy and develop new policy in conjunction with the Board and in consultation with major stakeholders
- Coordinate and manage key strategic issues related to decentralised utility networks and retail regulation
- Manage the preparation and delivery of reports, consultation papers, guidelines and decisions on matters relating to project origination, network operation and retail businesses

- Plan and implement strategic consultation processes involving key stakeholders such as developers, customers and their representatives, other regulators, government departments and ministers, industry bodies, and other interested parties
- Provide assistance and input into the planning, scoping and management of the work program undertaken by Flow Systems
- Provide support to the Executive team in budgeting, resource and corporate planning and management
- Ensuring the Flow Systems businesses are conducted in accordance with all relevant laws, regulations, and ethical standards and otherwise in line with best market practice
- Represent Flow Systems at meetings of State and Federal development bodies
- Advocate in media and political forums for the efficient use of water through recycled water applications, and the evolution of the private water utility sector in Australia
- Represent Flow Systems on relevant industry associations at board or committee level to determine new initiatives, opportunities, and to enhance the company profile
- Chief spokesperson for the Flow Systems Group
- Increase the profile of Flow Systems by monitoring all opportunities to ensure optimum promotion of the organisation, and represent Flow Systems at a wide variety of events

SKILLS AND EXPERIENCE

- Entrepreneurial, with a vision for the Australian water sector
- Highly developed leadership skills including the ability to maintain positive working relationships
- High-order strategic management skills, together with a proven record of success in the strategic management of other organisations
- Highly developed advocacy, negotiation and stakeholder management skills
- Ability to develop a workplace culture that balances teamwork and independent initiative in a small enterprise environment
- Ability to improve business performance through change management
- Strong skills in troubleshooting, problem-solving, and conflict resolution
- Ability to contribute to a workplace environment that fosters learning, teaching, personal and professional growth, risk-taking, innovation and fun
- Straight forward, self-confident and high self-awareness

KNOWLEDGE AND QUALIFICATIONS

- A strong background and understanding of the water and/or utilities industry
- Highly developed knowledge of the legislative and regulatory frameworks for the water and utilities industries
- At least 15 years' general experience in all aspects of management at a senior level including senior management roles in infrastructure development and delivery projects
- Relevant tertiary qualifications

Position Title	Chief Operating Officer
Reporting to	Managing Director/Chief Executive Officer
Functional team	Executive
Location	Sydney

PURPOSE OF ROLE

The primary purpose of this role is to manage all operational activities of the Flow Systems* Group ensuring the implementation of overall organisational strategy.

(*to be read as including all Flow Systems' subsidiaries)

KEY RELATIONSHIPS

Direct Reports

- Exec Manager Project Delivery
- Exec Manager Utility Ops
- Exec Manager Retail Ops
- Finance Manager
- Chief Technology Officer

Internal stakeholders

- Flow Systems Exec team
- Brookfield Infrastructure
- Board members

External stakeholders

- Clients
- Government
- Regulatory bodies
- Public Utilities
- Regulators (IPART, EPA)
- Key contractors & suppliers

WHS ACCOUNTABILITIES

- Executing a duty of care that ensures the health, wellbeing and safety of self and others at all times
- As a member of the Executive, demonstrating leadership in safe workplace practices consistent with Flow Systems' WHS Policy and Management System procedures
- Proactively identifying unsafe workplace conditions and/or practices and taking preventive and corrective actions as applicable

KEY RESPONSIBILITIES

- Support the MD/CEO with ongoing re-appraisal and updating of Flow Systems' Business Plan and annual budgets
- Providing strategic direction, leading, managing and directing all operational activities of the organisation
- Accountability for the overall profitability of the operational activities of the organisation
- Building and aligning the organisational capability to deliver on the Business Plan strategy
- People development, risk and quality management, and innovation to drive growth
- Ensuring all corporate and business unit strategies and plans are aligned, reviewed and successfully implemented – taking remedial action where necessary
- Building relationships between all business units and ensuring the business units receive

adequate operational support

- Providing support and assistance to the MD/CEO on corporate and group issues where required
- Communicating with the MD/CEO to ensure he/she remains fully informed of all significant operating issues
- Acting, as required or in the absence of the MD/CEO, as the chief spokesperson for the organisation
- Directing and motivating direct reports to achieve agreed targets
- Provide support to the Executive team in budgeting, resource and corporate planning and management
- Ensuring the Flow Systems businesses are conducted in accordance with all relevant laws, regulations, and ethical standards and otherwise in line with best market practice
- Oversight of all regulatory compliance monitoring and reporting associated with the respective group businesses
- Develop and support any business relationships vital to the success of Flow Systems
- Ambassador for maintaining/improving the Flow Systems brand to all stakeholders including clients, customers, supply chain, and regulators

SKILLS AND EXPERIENCE

- High-order skills in strategic planning, resource management, financial management, reporting and analysis
- Highly developed advocacy, negotiation and stakeholder management skills
- Excellent communication and presentation skills
- Ability to foster a workplace culture that balances collaboration and independent initiative in a small enterprise environment
- Ability to improve business performance through motivation and change management
- Strong skills in troubleshooting, problem-solving, and conflict resolution
- Ability to contribute to a workplace environment that fosters learning, teaching, personal and professional growth, risk-taking, innovation and fun
- Straight forward, self-confident and high self-awareness

KNOWLEDGE AND QUALIFICATIONS

- A strong background and understanding of business management and corporate processes
- Well-developed knowledge of the legislative and regulatory frameworks for the water and utilities industries
- At least 15 years' general experience in all aspects of business management at a senior level
- Relevant tertiary qualifications

Position Description

Position Title	Executive Manager Project Delivery
Reporting to	Chief Operating Officer
Functional team	Project Delivery
Location	Sydney based, with travel to all site locations as required

PURPOSE OF ROLE

The primary purpose of this role is to manage the Project Delivery function of the Flow Systems* business, with overall accountability for project planning, procurement, contract management, design, construction, and project management of all new water industry facilities and network infrastructure delivered by Flow Systems.

(*to be read as including all Flow Systems' subsidiaries)

KEY RELATIONSHIPS

Direct Reports

- Project Managers
- Project Engineers

Internal stakeholders

- Flow Systems Exec team
- Brookfield Infrastructure
- Board members

External stakeholders

- Property Developers
- Other clients (eg. Councils)
- Contractors & Suppliers
- Public Utilities
- Regulators (IPART, EPA)

WHS ACCOUNTABILITIES

- Executing a duty of care that ensures the health, wellbeing and safety of self and others at all times
- As a member of the Executive, demonstrating leadership in safe workplace practices consistent with Flow Systems' WHS Policy and Management System procedures
- Proactively identifying unsafe workplace conditions and/or practices and taking preventive and corrective actions as applicable
- Leading contributor to workplace safety improvements, particularly in relation to infrastructure design, construction and commissioning practices

KEY RESPONSIBILITIES

- CAPEX cost estimating and project delivery methodology and program input to business development and proposals
- Determine the resources needed to achieve project deliverables
- Oversee project program, cost and risk controls to maintain or better the budgeted margin
- Contract management to protect the company's commercial position with both client and supply chain
- Effectively communicate project expectations to team members and stakeholders

- Effectively liaise with project stakeholders on an ongoing basis
- Prepare and present management reports that concisely and accurately provide relevant information concerning the status of projects in delivery phase to the Executive and Board
- Close liaison with Utility Operations and Retail Operations functional teams to provide inputs to project delivery process
- Develop and keep current the systems, standards, policies and procedures required to enable and support industry best practice in all Project Delivery activities
- Educate staff and contractors to ensure implementation of Flow Systems' corporate systems, standards, policies and procedures to meet HSE and QA requirements
- Coordination of all regulatory compliance monitoring and reporting associated with the design and construction of all Flow Systems infrastructure
- Develop and support any business relationships vital to the success of Flow Systems
- Ambassador for maintaining/improving the Flow Systems brand to all stakeholders including clients, customers, supply chain, and regulators

SKILLS AND EXPERIENCE

- Advanced project portfolio/program management, organisational and delegation skills to oversee activities carried out across multiple projects and sites
- Advanced procurement and commercial management skills for large value contracts
- Ability to identify and mitigate risks associated with the delivery of infrastructure
- General understanding of supporting activities and relative sequencing associated with the design and construction of water industry infrastructure (eg. commissioning, metering, customer billing and administration)
- Extensive experience in stakeholder management in a project delivery context
- Ability to work independently in a small enterprise environment
- Ability to improve business performance through change management
- Strong skills in troubleshooting, problem-solving, and conflict resolution
- Ability to contribute to a workplace environment that fosters learning, teaching, personal and professional growth, risk-taking, innovation and fun
- Straight forward, self-confident and high self-awareness

KNOWLEDGE AND QUALIFICATIONS

- A strong background and understanding of the water and/or utilities industry
- Advanced knowledge of statutory and regulatory frameworks for the design and construction of water industry infrastructure and associated utilities
- At least 15 years' experience in project management of infrastructure projects
- At least 10 years' experience in the design and construction of urban infrastructure
- Relevant tertiary qualifications

Position Description

Position Title	Executive Manager Utility Operations
Reporting to	Chief Operating Officer
Functional team	Utility Operations
Location	Sydney based, with travel to all site locations as required

PURPOSE OF ROLE

The primary purpose of this role is to manage the Utility Operations area of the Flow Systems* business, with overall accountability for the commissioning, operation and maintenance of Flow Systems' water industry facilities and network infrastructure.

(*to be read as including all Flow Systems' subsidiaries)

KEY RELATIONSHIPS

Direct Reports

- Utility Operations staff

Internal stakeholders

- Flow Systems Exec team
- Brookfield Infrastructure
- Board members

External stakeholders

- Property Developers
- Public Utilities
- Local Councils
- Regulators (IPART, EPA)
- Contractors & Suppliers

WHS ACCOUNTABILITIES

- Executing a duty of care that ensures the health, wellbeing and safety of self and others at all times
- As a member of the Executive, demonstrating leadership in safe workplace practices consistent with Flow Systems' WHS Policy and Management System procedures
- Proactively identifying unsafe workplace conditions and/or practices and taking preventive and corrective actions as applicable
- Leading contributor to workplace safety improvements, particularly in relation to commissioning, operation and maintenance activities

KEY RESPONSIBILITIES

- Operational input to design, construction and commissioning of all Flow Systems infrastructure
- Approval for handover acceptance and ownership of all Flow Systems infrastructure upon satisfactory completion of inspection/test/commissioning
- Validation and verification of all Flow Systems infrastructure as appropriate
- Coordination of day to day operation and maintenance of all Flow Systems infrastructure
- Close liaison with Retail Operations functional team in support of customer enquiries of a technical nature

- Develop and keep current the systems, standards, policies and procedures required to enable and support industry best practice in all Utility Operations activities
- Coordination of all regulatory compliance monitoring and reporting associated with the operation and maintenance of all Flow Systems infrastructure
- Develop and support any business relationships vital to the success of Flow Systems
- Ambassador for maintaining/improving the Flow Systems brand to all stakeholders including clients, customers, supply chain, and regulators

SKILLS AND EXPERIENCE

- Advanced workforce management, organisational and delegation skills to oversee activities carried out across multiple Utility Operations sites
- Ability to identify, implement and manage all forms of technology associated with water industry infrastructure
- Understanding of project delivery activities and sequencing so as to provide timely and relevant input to ensure future commissioning, operations and maintenance of new assets are optimised
- Extensive experience in customer liaison and service delivery
- Ability to work independently in a small enterprise environment
- Ability to improve business performance through change management
- Strong skills in troubleshooting, problem-solving, and conflict resolution
- Ability to contribute to a workplace environment that fosters learning, teaching, personal and professional growth, risk-taking, innovation and fun
- Straight forward, self-confident and high self-awareness

KNOWLEDGE AND QUALIFICATIONS

- A strong technical background and understanding of the water and/or utilities industry
- Advanced knowledge of statutory and regulatory frameworks for the operation of water industry infrastructure and associated utilities
- At least 15 years' experience in the operation and maintenance of sewage and recycled water treatment facilities
- At least 10 years' experience in the operation and maintenance of water and sewerage reticulation systems
- Relevant tertiary qualifications

Flow Systems Utilities

PROJECT NO.	PROJECT NAME	RSL Status	LOCATION			SERVICES				CLIENT DETAILS		UTILITY DETAILS					
			LOCATION	STATE	LGA	WASTEWATER	RECYCLED WATER	DRINKING WATER	ULTIMATE RESIDENTIAL CAPACITY	CLIENT	Construction to commence	UTILITY NAME	NETWORK OPERATOR	WICA NOL No.	RETAILER	WICA RSL No.	DATE OF RSL VARIATION
1	PITT TOWN	Confirmed	Pitt Town	NSW	Hawkesbury	W	R		943	JPG	2010 Q4	Pitt Town Water	Pitt Town Water P/L	10_014	Flow Systems P/L	13_001R	11/11/2010
2	DISCOVERY POINT	Confirmed	Wolli Creek	NSW	Rockdale	W	R	D	1,654	FRASERS	2014 Q1	Discovery Point Water	Discovery Point Water P/L	13_025	Flow Systems P/L	13_001R	7/07/2014
3	CENTRAL PARK	Confirmed	Chippendale	NSW	City of Sydney	W	R	D	2,166	FRASERS	2013 Q2	Central Park Water	Central Park Water P/L	12_022	Flow Systems P/L	13_001R	17/04/2013
4	WYEE	Confirmed	Wyee	NSW	Lake Macquarie	W	R	D	818	WYEE DEV'T FUND	2014 Q1	Wyee Water	Wyee Water P/L	14_026	Flow Systems P/L	13_001R	20/10/2014
5	HUNTLEE	Confirmed	North Rothbury	NSW	Cessnock & Singleton	W	R	D	7,500	LWP	2016 Q2	Huntlee Water	Huntlee Water P/L	15_030	Flow Systems P/L	13_001R	27/08/2015
6	GREEN SQUARE TOWN CENTRE	Confirmed	Zetland	NSW	City of Sydney		R		4,100	CITY OF SYDNEY	2015 Q1	Green Square Water	Green Square Water P/L	15_031	Flow Systems P/L	13_001R	27/08/2015
7	COORANBONG	Confirmed	Cooranbong	NSW	Lake Macquarie	W	R	D	2,104	JPG	2017 Q1	Cooranbong Water	Cooranbong Water P/L	15_033	Flow Systems P/L	13_001R	22/05/2015
8	BELLBIRD	Submitted	Bellbird	NSW	Cessnock	W	R	D	1,650	JPG	2019	Bellbird Water	Flow Systems Operations P/L	TBC	Flow Systems P/L	13_001R	TBC
9	BOX HILL	Confirmed	Box Hill	NSW	The Hills	W	R		4,100	CELESTINO	2016 Q2	Box Hill Water	Flow System Operations P/L	16_037	Flow Systems P/L	13_001R	12/05/2016
10	SHEPHERDS BAY	Confirmed	Meadowbank	NSW	Ryde	W	R	D	1,786	HOLDMARK, BROOKFIELD	2016 Q3	Shepherds Bay Plus	Flow Systems Operations P/L	17_042	Flow Systems P/L	13_001R	13/10/2017
11	GLOSSODIA	Submitted	Glossodia	NSW	Hawkesbury	W	R	?	580	CELESTINO	2019	Glossodia Water	Flow Systems Operations P/L	TBC	Flow Systems P/L	13_001R	TBC

Shepherds Bay



LEGEND

- Property boundary
- Existing NOL17_042 boundary
- Proposed NOL17_042 and RSL13_001R boundary

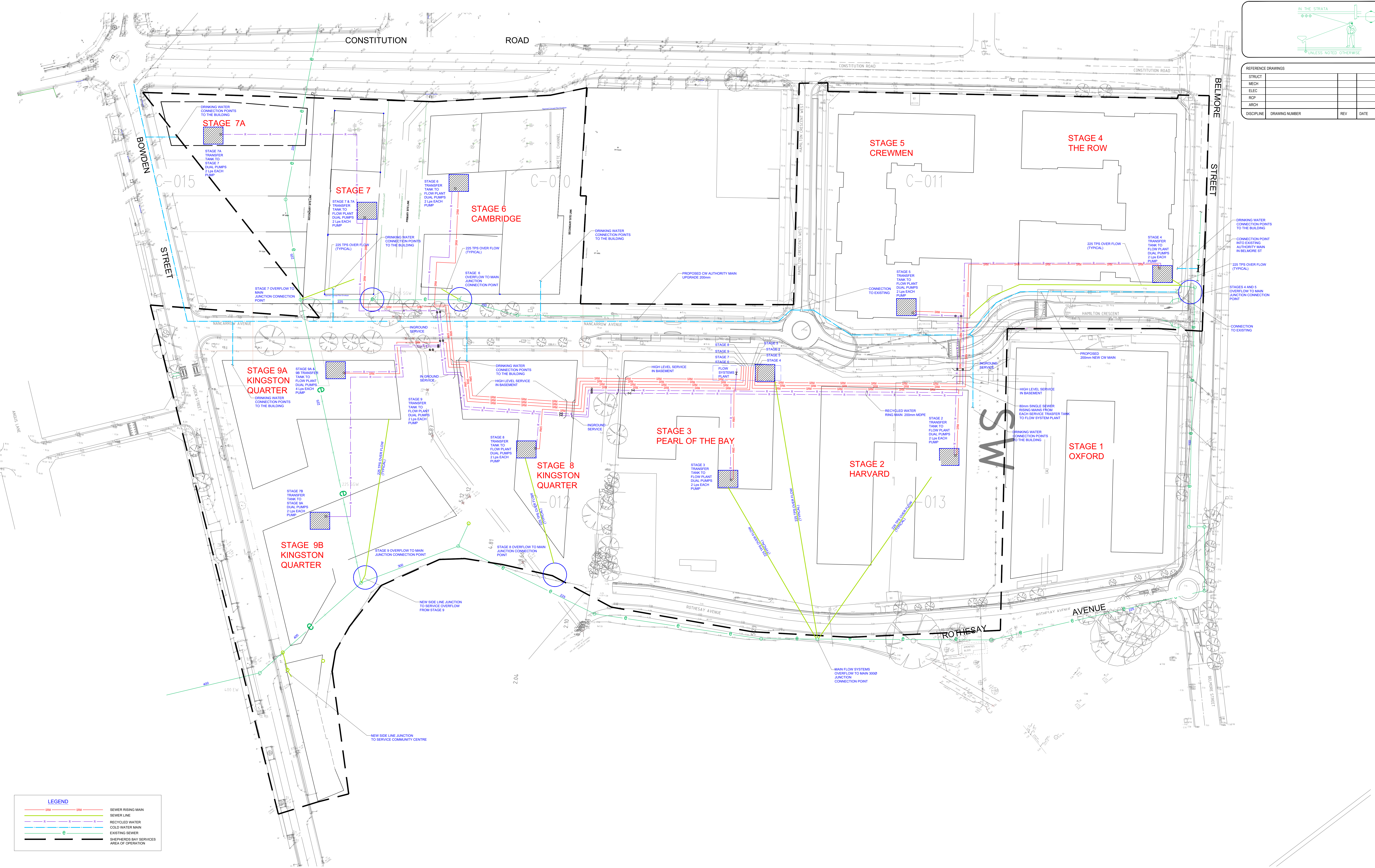


SHEPHERDS BAY

MEADOWBANK



Shepherds Bay



IN THE STRATA

REFERENCE DRAWINGS			
STRUCT			
MECH			
ELEC			
RCP			
ARCH			
DISCIPLINE	DRAWING NUMBER	REV	DATE

LEGEND

	SEWER RISING MAIN
	SEWER LINE
	RECYCLED WATER
	COLD WATER MAIN
	EXISTING SEWER
	SHEPHERDS BAY SERVICES AREA OF OPERATION

NORTH

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REVISION			REVISION			ARCHITECT / PROJECT MANAGER			CLIENT			HYDRAULIC & FIRE SERVICES CONSULTANTS			PROJECT			DRAWING TITLE		
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE	
AB	AS BUILT	27/02/19																		
ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE															

flow

ALIGN ENGINEERING GROUP

PO BOX 8013
PORT MACQUARIE
NSW 2444
T:0403 852 312
ABN2878949310

PROJECT

SHEPHERDS BAY
FLOW INFRASTRUCTURE
MEADOWBANK 2114

PROJECT No.	DATE	DRAWN	No IN SET	SCALE
AEG133	27.02.19	AT	01 OF 01	1:100

DRAWING TITLE

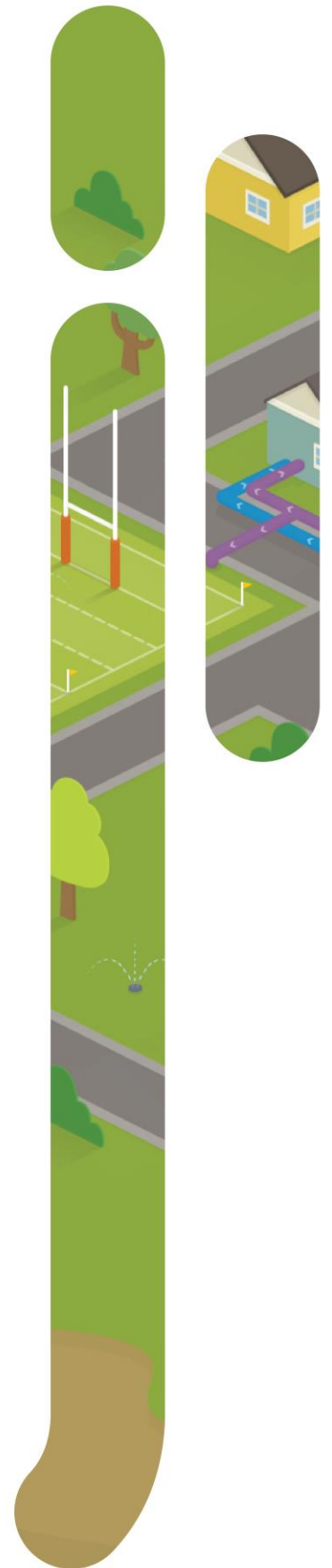
HYDRAULIC SERVICES
LEVEL
DRAINAGE SERVICES

DRAWING No.	REVISION
FAI-100	AB



Shepherds Bay Scheme Management Plan (Scheme MP)

Shepherds Bay  Plus



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NEW SOUTH WALES GOVERNMENT

Water Industry Competition Act 2006 (NSW)

Network operator's licence

Licence no. 17_042

Flow Systems Operations Pty Ltd

(ACN 603 106 305)

PRELIMINARY

1. Summary

- 1.1. This Licence is granted under section 10(1) of the Act.
- 1.2. The Act prohibits a person from constructing, maintaining or operating any water industry infrastructure otherwise than under the authority of a licence. This Licence authorises the Licensee and other Authorised Persons to carry out such activities that would otherwise be prohibited under the Act.

2. Outline

- 2.1. This Licence is divided into the following sections and schedules:

Section 1 authorises the construction, maintenance and operation of water infrastructure for non-potable water (if applicable).
Section 2 authorises the construction, maintenance and operation of water infrastructure for drinking water (if applicable).
Section 3 authorises the construction, maintenance and operation of sewerage infrastructure (if applicable).
Schedule A sets out special Ministerially-imposed licence conditions that are specific to this Licence.
Schedule B sets out Ministerially-imposed licence conditions that generally apply to network operators' licences granted under the Act.
Schedule C sets out definitions and interpretation provisions.

- 2.2. In addition to the conditions in Schedules A and B to this Licence, the Act and Regulation also contain conditions that apply to this Licence. Nothing in Schedules A or B modify or affect the conditions imposed on this Licence by the Act or Regulation.

SECTION 1 – ACTIVITIES AUTHORISED: NON-POTABLE WATER

Subject to the conditions imposed by the Act, the Regulation and Schedules A and B of this Licence, this Licence authorises the Licensee and any Authorised Persons specified in Table 1.1 to construct, maintain and operate the water industry infrastructure specified in Table 1.2:

- a) for one or more of the purposes for water industry infrastructure specified in Table 1.2; and
- b) within the area of operations specified in Table 1.3.

The non-potable water supplied by means of the water industry infrastructure specified in Table 1.2 may only be used for the authorised purposes for non-potable water specified in Table 1.4.

Table 1.1 Authorised Persons

. Flow Systems Pty Ltd (ACN 136 272 298)
--

Table 1.2 Water industry infrastructure and purposes for water industry infrastructure

- | |
|--|
| <ul style="list-style-type: none">1) A treatment plant for non-potable water and other water infrastructure used, or to be used, in connection with the treatment plant, where components of the treatment plant or other water infrastructure may be used for one or more of the following purposes for water industry infrastructure:<ul style="list-style-type: none">a) production of non-potable water;b) treatment of non-potable water;c) filtration of non-potable water;d) storage of non-potable water; ande) conveyance of non-potable water.2) A reticulation network for non-potable water and other water infrastructure used, or to be used, in connection with the reticulation network, where components of the reticulation network or other water infrastructure may be used for one or more of the following purposes for water industry infrastructure:<ul style="list-style-type: none">a) production of non-potable water;b) treatment of non-potable water;c) filtration of non-potable water;d) storage of non-potable water; ande) conveyance of non-potable water. |
|--|

Table 1.3 Area of operations

The land situated under the following folio identifiers:

Lot	DP
1 - 7 and 9 -17	19585
1	122205
2	792836
102	1037638
1 - 2	810552
1	713706
1 - 2	930584
1	104280
4	548406
3 and 11 - 18	7130
1	703858
1	322641
1	1205357
2	550006
1 - 2	982743

Table 1.4 Authorised purposes for non-potable water

Toilet flushing, clothes washing, cooling tower top up, car washing, water features and irrigation (including public open space irrigation).

SECTION 2 – ACTIVITIES AUTHORISED: DRINKING WATER

Subject to the conditions imposed by the Act, the Regulation and Schedules A and B of this Licence, this Licence authorises the Licensee and any Authorised Persons specified in Table 2.1 to construct, maintain and operate the water industry infrastructure specified in Table 2.2:

- a) for one or more of the purposes for water industry infrastructure specified in Table 2.2; and
- b) within the area of operations specified in Table 2.3.

Table 2.1 Authorised Persons

Flow Systems Pty Ltd (ACN 136 272 298)
--

Table 2.2 Water industry infrastructure and purposes for water industry infrastructure

A reticulation network for drinking water and other water infrastructure used, or to be used, in connection with the reticulation network, where components of the reticulation network or other water infrastructure may be used for the conveyance of drinking water.

Table 2.3 Area of operations

The land situated under the following folio identifiers:
--

Lot	DP
1 - 7 and 9 -17	19585
1	122205
2	792836
102	1037638
1 - 2	810552
1	713706
1 - 2	930584
1	104280
4	548406
3 and 11 - 18	7130
1	703858
1	322641
1	1205357
2	550006
1 - 2	982743

SECTION 3 – ACTIVITIES AUTHORISED: SEWERAGE SERVICES

Subject to the conditions imposed by the Act, the Regulation and Schedules A and B of this Licence, this Licence authorises the Licensee and any Authorised Persons specified in Table 3.1 to construct, maintain and operate the water industry infrastructure specified in Table 3.2:

- a) for one or more of the purposes for water industry infrastructure specified in Table 3.2; and
- b) within the area of operations specified in Table 3.3.

Table 3.1 Authorised Persons

Flow Systems Pty Ltd (ACN 136 272 298)
--

Table 3.2 Water industry infrastructure and purposes for water industry infrastructure

- | |
|--|
| <ul style="list-style-type: none">1) A treatment plant for sewage and other sewerage infrastructure used, or to be used, in connection with the treatment plant, where components of the treatment plant or other sewerage infrastructure may be used for one or more of the following purposes for water industry infrastructure:<ul style="list-style-type: none">f) production of treated non-potable water from sewage;g) treatment of sewage;h) filtration of sewage;i) storage of sewage; andj) conveyance of sewage.2) A reticulation network for sewage and other sewerage infrastructure used, or to be used, in connection with the reticulation network, where components of the reticulation network or other sewerage infrastructure may be used for one or more of the following purposes for water industry infrastructure:<ul style="list-style-type: none">a) production of treated non-potable water from sewage;b) treatment of sewage;c) filtration of sewage;d) storage of sewage; ande) conveyance of sewage. |
|--|

Table 3.3 Area of operations

The land situated under the following folio identifiers:

Lot	DP
1 - 7 and 9 -17	19585
1	122205
2	792836
102	1037638
1 - 2	810552
1	713706
1 - 2	930584
1	104280
4	548406
3 and 11 - 18	7130
1	703858
1	322641
1	1205357
2	550006
1 - 2	982743

1. Notification of changes to Authorised Person

- 1.1. If an Authorised Person ceases, proposes to cease, or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services, or a later date approved by IPART in writing. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.

2. Limits of Approval

- 2.1. The Licensee must only construct, maintain and operate, and must ensure that any Authorised Person only constructs, maintains and operates, the water industry infrastructure specified in paragraph 2) of Table 1.2 or paragraph 2) of Table 3.2 to the extent that such construction, maintenance or operation:
- a) has been granted development consent under the EP&A Act as at the date this Licence is granted; or
 - b) is exempt development under the EP&A Act and may be carried out without development consent under section 76(3)(a) of the EP&A Act; or
 - c) is the subject of the REF.
- 2.2. The Licensee must undertake, and must ensure that any Authorised Person undertakes, the activities set out in the REF that is approved by the Minister, that are authorised by the Licence, in a manner that is substantially consistent with the REF, if applicable. Those activities include, but are not limited to, the environmental mitigation measures set out in the REF.

SCHEDULE B – GENERAL MINISTERIALLY-IMPOSED LICENCE CONDITIONS

1. Ongoing capacity to operate

- 1.1. The Licensee must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licensee ceases to have this capacity, it must report this to IPART in accordance with the Reporting Manual.

2. Maintaining appropriate insurance

- 2.1. The Licensee must hold insurance that is appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence.
- 2.2. The Licensee must provide a copy of each certificate of currency of the insurance maintained by the Licensee to IPART in accordance with the Reporting Manual.
- 2.3. Before commencing to commercially operate the Specified Water Industry Infrastructure under this Licence, the Licensee must demonstrate that the insurance held is appropriate for the size and nature of those commercial operation activities, by providing a report to IPART from an Insurance Expert that:
- a) certifies that in the Insurance Expert's opinion, the type, scope and limit of the insurance held by the Licensee is appropriate for the size and nature of those commercial operation activities; and
 - b) is in the form prescribed by the Reporting Manual.
- 2.4. [Not applicable]
- 2.5. If, in relation to the activities authorised by this Licence, there is, or is to be, a change in either of the following, the Licensee must provide a report to IPART in accordance with the Reporting Manual:
- a) the insurer or underwriting panel in respect of an insurance policy held by the Licensee; or
 - b) the type, scope or limit on the amount of insurance held by the Licensee.
- 2.6. From time to time when requested in writing by IPART, the Licensee must provide a report to IPART, in the manner and form and within the timeframes specified by IPART, from an Insurance Expert certifying that in the Insurance Expert's opinion the type, scope and limit on the amount of insurance held by the Licensee is appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence.

[Note: The circumstances in which IPART may request a report under clause 2.6 include (but are not limited to) the following:

- where IPART considers that there may be a change in the type, scope or limit on the amount of insurance held by the Licensee in relation to activities that the Licensee is carrying out under this Licence;*
- where there is a change in the type or extent of activities authorised by this Licence; or*
- where IPART or an approved auditor considers that the type, scope or limit on the amount of insurance held by the Licensee may not be appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence.]*

3. Complying with NSW Health requirements

- 3.1. The Licensee must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that:
- a) IPART has agreed to; and
 - b) are notified from time to time to the Licensee by IPART in writing.

4. Complying with Audit Guidelines

- 4.1. The Licensee must comply with any Audit Guidelines issued by IPART.

5. Reporting in accordance with the Reporting Manual

- 5.1. The Licensee must prepare and submit reports in accordance with the Reporting Manual.

6. Reporting information in relation to the register of licences

- 6.1. The Licensee must notify IPART, and provide IPART with details, of any change in relation to the following, in accordance with the Reporting Manual, within 14 days of the change:
- a) any source from which the water handled by the Specified Water Industry Infrastructure is derived;
 - b) the identity of each licensed retail supplier or public water utility that has access to the infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of supplying water to its customers;

- c) any other water infrastructure to which the Specified Water Industry Infrastructure is connected;
- d) in the case of non-potable water, the authorised purposes for that water;
- e) the identity of each licensed retail supplier or public water utility that has access to infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of providing sewerage services to its customers;
- f) any other sewerage infrastructure to which the Specified Water Industry Infrastructure is connected; and
- g) the arrangements for the disposal of waste from the water industry infrastructure specified in section 3, Table 3.2.

7. Monitoring

- 7.1. The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause 7.
- 7.2. The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan:
 - a) the date on which the sample was taken;
 - b) the time at which the sample was collected;
 - c) the point or location at which the sample was taken; and
 - d) the chain of custody of the sample (if applicable).
- 7.3. The Licensee must ensure that analyses of all samples taken for the purposes of Verification Monitoring are carried out by a laboratory accredited for the specified tests by an independent body that is acceptable to NSW Health, such as the National Association of Testing Authorities or an equivalent body.

8. Delineating responsibilities

- 8.1. If a code of conduct has not been established under clause 25 of the Regulation, the Licensee must, by a date specified by IPART, establish a code of conduct (**Licensee's Code of Conduct**) in accordance with this clause 8.
- 8.2. Before the Licensee brings the Specified Water Industry Infrastructure into commercial operation or by a later date specified by IPART (if any), the Licensee's Code of Conduct must be agreed in writing between:
 - a) the Licensee; and
 - b) each licensed network operator, licensed retail supplier and/or public water utility that:

- i) supplies water or provides sewerage services by means of any water industry infrastructure that is connected to the Specified Water Industry Infrastructure; or
- ii) constructs, maintains or operates any water industry infrastructure that is connected to the Specified Water Industry Infrastructure.

8.3. [Not applicable]

8.4. The Licensee's Code of Conduct must set out the respective responsibilities of the entities specified in clause 8.2 by, at a minimum, providing for:

- a) who is responsible for repairing, replacing or maintaining any pipes, pumps, valves, storages or other infrastructure connecting the Specified Water Industry Infrastructure to the other water industry infrastructure;
- b) who is responsible for water quality;
- c) who is liable in the event of the unavailability of water;
- d) who is liable in the event of failure of any water industry infrastructure;
- e) the fees and charges payable in respect of the use of the water industry infrastructure; and
- f) who is responsible for handling customer complaints.

8.5. The Licensee must not contravene the Licensee's Code of Conduct to the extent that it makes the Licensee responsible or liable for the matters set out in it.

9. Notification of changes to end-use

9.1. If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply non-potable water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART, the Licensee must notify IPART in writing at least 3 months before commencing such operation.

10. Notification of commercial operation

10.1. Each time the Licensee has brought any new Specified Water Industry Infrastructure into commercial operation, the Licensee must:

- a) notify IPART in accordance with the Reporting Manual that it has brought the relevant Specified Water Industry Infrastructure into commercial operation; and
- b) provide such notification within 10 days after it has brought the relevant Specified Water Industry Infrastructure into commercial operation.

11. Notification of non-compliant Plumbing

- 11.1. If the Licensee becomes aware that a customer's Plumbing is not Code Compliant, the Licensee must, within 10 days, notify the customer and the Plumbing Regulator, in writing, of that fact.

SCHEDULE C – INTERPRETATION AND DEFINITIONS

1. Interpretation

1.1. In this Licence, unless the context requires otherwise:

- a) the singular includes the plural and vice versa;
- b) headings are used for convenience only and do not affect the interpretation of this Licence;
- c) a reference to a document includes the document as modified from time to time and any document replacing it;
- d) a reference to a “person” includes a natural person and any body or entity whether incorporated or not;
- e) a reference to a clause is to a clause in this Licence;
- f) a reference to a section is to a section in this Licence;
- g) a reference to a schedule is to a schedule to this Licence;
- h) a reference to a law or statute includes regulations, rules, codes and other instruments under it, and consolidations, amendments, re-enactments or replacements of them; and
- i) explanatory notes do not form part of this Licence, but in the case of uncertainty may be relied on for interpretation purposes.

2. Definitions

2.1. Expressions used in this Licence that are defined in the Act or the Regulation have the meanings set out in the Act or the Regulation.

2.2. In this Licence:

Act means the Water Industry Competition Act 2006 (NSW).

Audit Guidelines means the document titled “*Audit Guideline – Water Industry Competition Act 2006*”, which is prepared by IPART and is available on IPART’s website at www.ipart.nsw.gov.au, and any other guidelines issued by IPART in relation to audits under the Act.

Authorised Person	means each person specified in, as applicable: <ul style="list-style-type: none"> a) section 1, Table 1.1; b) section 2, Table 2.1; and c) section 3, Table 3.1.
Code Compliant	has the meaning given to that term under section 7 of the <i>Plumbing and Drainage Act 2011</i> (NSW).
EP&A Act	Means the <i>Environmental Planning and Assessment Act 1979</i> (NSW)
Insurance Expert	means an insurance broker which holds an Australian financial services licence under Part 7.6 of the <i>Corporations Act 2001</i> (Cth) that authorises the broker to provide financial product advice for, and deal in, contracts of insurance within the meaning of Chapter 7 of that Act.
IPART	means the Independent Pricing and Regulatory Tribunal of New South Wales established under the <i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW).
Licence	means this network operator's licence granted under section 10 of the Act.
Licensee	means Flow Systems Operations Pty Ltd (ACN 603 106 305).
Licensee's Code of Conduct	has the meaning given in Schedule B, clause 8.1.
Minister	means the Minister responsible for Part 2 of the Act.
NSW Health	means the Water Unit of NSW Ministry of Health and any of the local health districts as defined by the NSW Ministry of Health.

Plan	means any infrastructure operating plan, water quality plan or sewage management plan that the Licensee is required to prepare under the Regulation.
Plumbing	means any pipe, fitting or apparatus that is situated: <ul style="list-style-type: none"> a) downstream of the customer's connection point to a water main, where the water main is Specified Water Industry Infrastructure; b) upstream of a customer's connection point to a sewer main, where the sewer main is Specified Water Industry Infrastructure; or c) upstream of a customer's connection point to a stormwater drain, where the stormwater drain is Specified Water Industry Infrastructure.
Plumbing Regulator	has the meaning given to that term under section 3 of the <i>Plumbing and Drainage Act 2011</i> (NSW).
REF	means the document titled "REF for proposed sewage and recycled water reticulation systems. Shepherds Bay, New South Wales", version 3, prepared by RPS Australia East Pty Ltd, version 3, and dated 2 June 2017 and does not include any modified version of that document or any other document replacing it.
Regulation	means the Water Industry Competition (General) Regulation 2008 (NSW).
Reporting Manual	means the document titled "Network Operator's Reporting Manual", which is prepared by IPART and is available on IPART's website at www.ipart.nsw.gov.au .
Specified Water Industry Infrastructure	means the water industry infrastructure specified in, as applicable: <ul style="list-style-type: none"> a) section 1, Table 1.2; b) section 2, Table 2.2; and c) section 3, Table 3.2.

Verification Monitoring	means verification monitoring as described in the document titled " <i>Australian Drinking Water Guidelines</i> " or the document titled " <i>Australian Guidelines for Water Recycling</i> " as the case may be.
Water Quality Plan	means the water quality plan that the Licensee is required to prepare under the Regulation.



New South Wales

Water Industry Competition Act 2006 (NSW)

Notice of approval to bring new infrastructure into commercial operation

I, The Hon. Don Harwin, MLC, Minister for Energy and Utilities, under clause 2 of Schedule 1 to the *Water Industry Competition (General) Regulation 2008* (NSW) (**Regulation**), approve Flow Systems Operations Pty Ltd (ACN 603 106 305) (**FSO**) to bring into commercial operation, all new infrastructure which:

1. is infrastructure to which FSO's network operator's licence (licence no. 17_042) (**Licence**) applies;
2. existed as at 17 October 2017; and
3. is of the kind described in each of Table 2.2 and Table 3.2(2) of the Licence.

I have considered the request from FSO for this approval, as well as the following report, which was prepared by an 'approved auditor' within the meaning of the Regulation.

1. "Flow Systems Operations (Shepherds Bay) New Infrastructure Audit (Sewage Collection and Water Distribution)", dated 17 October 2017 (included as **Attachment A**).

I am satisfied that the report indicates that the new infrastructure:

1. complies with the requirements of the Regulation and the conditions of the Licence; and
2. is capable of operating safely and in accordance with FSO's infrastructure operating plan, water quality plan and sewage management plan.

The Hon. Don Harwin, MLC
Minister for Energy and Utilities

Dated this **1st** day of **November** 20**17**



Environmental Approvals Summary Table

Date June 2019

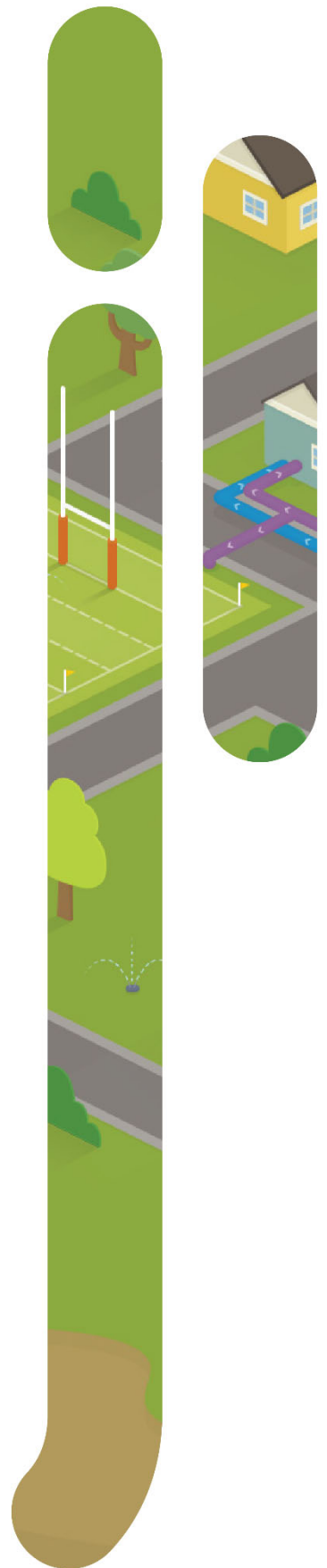


Table 1 Environmental approvals summary table

Infrastructure Component	Part 3A applicable? ¹	Part 4 consent required or given? ²	Part 5 applicable? ³	Status
Reticulated sewage and recycled water system Stage 2-3	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p> <p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf Refer to page 14 of the environmental assessment report located here for the inclusion of the Stage 2-3 allotments in the Concept Plan.</p>	<p>LDA2015/0018 approved 20/10/2015 (assessed as NOL17_042)</p> <p>In summary, the development provides for the construction of two (2) multi storey mixed use developments comprising of 453 apartments, with associated basement parking and landscaping.</p> <p>The Statement of Environmental Effects (SSE) prepared to support the application for development consent for Stages 2 & 3 (LDA2015/0018) identifies the development site in Figure 3.</p> <p>The SEE (Section 4.1) includes the maintenance/augmentation of the services and infrastructure on the site in the general description of the proposed development. All utility infrastructure and services within the development footprint are covered by this element of the description of the proposed development. The conditions of consent include general requirements for the utility infrastructure required to service the development including compliance with the requirements of any relevant utility provider in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.</p> <p>The proposed sewage and recycled water reticulation infrastructure within the development footprint for stages 2 & 3 are consistent with the development as approved and covered by the existing development consent.</p>	No	Approved and constructed
Reticulated sewage and recycled water system Stage 4-5	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p> <p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf Refer to page 14 of the environmental assessment report located here for the inclusion of the Stage 4-5 allotments in the Concept Plan.</p>	<p>LDA2015/0019 approved 18/9/2015 (assessed as NOL17_042)</p> <p>In summary, the development provides for two (2) residential flat buildings comprising of 511 apartments with associated basement parking and landscaping.</p> <p>The Statement of Environmental Effects (SSE) prepared to support the application for development consent for Stages 4 & 5 (Development application number LDA2015/19) identifies the development site in Figure 3.</p> <p>The SEE includes maintenance/augmentation of the services and infrastructure on the site in the general description of the proposed development. All utility infrastructure and services within the development footprint are covered by this element of the description of the proposed development.</p> <p>The conditions of consent include general requirements for the utility infrastructure required to service the development including compliance with the requirements of any relevant utility provider in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.</p>	No	Approved and constructed

		The proposed sewage and recycled water reticulation infrastructure within the development footprint for stages 4 & 5 (including the Nancarrow Avenue extension works) are consistent with the development as approved and covered by the existing development consent		
Reticulate d sewage and recycled water system Stage 6-7	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p> <p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf Refer to page 14 of the environmental assessment report located here for the inclusion of the Stage 6-7 allotments in the Concept Plan.</p>	<p>LDA2015/0032 approved 15/12/2015 (assessed as NOL17_042)</p> <p>In summary, the development provides for two (2) residential flat buildings inclusive of 311 apartments with associated basement parking and landscaping.</p> <p>The SSE prepared to support the application for development consent for Stages 6 & 7 (Development application number LDA2015/0032) identifies the development site in Figure 2.</p> <p>The SEE (Section 4.1) includes infrastructure works in the general description of the proposed development. All utility infrastructure and services within the development footprint are covered by this element of the description of the proposed development.</p> <p>The conditions of consent include general requirements for the utility infrastructure required to service the development including compliance with the requirements of any relevant utility provider in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.</p> <p>The proposed sewage and recycled water reticulation infrastructure within the site boundary of Stages 6 & 7 and the adjacent section of Nancarrow Road are consistent with the development as approved and covered by the existing development consent.</p>	No	Approved and constructed
Reticulate d sewage and recycled water system Stage 8-9	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p> <p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf Refer to page 14 of the environmental assessment report located here for the inclusion of the Stage 8-9 allotments in the Concept Plan.</p>	<p>LDA2015/0031 approved 15/12/2015 (assessed as NOL17_042)</p> <p>In summary, the development provides for three (3) residential flat buildings inclusive of 422 apartments with associated basement parking and landscaping.</p> <p>The SEE for Stage 8 & 9 (development application number LDA2015/31) identifies the site as Lot 2 in DP 792836 and Lot 102 in DP 1037638.</p> <p>The SEE (Section 4.1) includes infrastructure works in the general description of the proposed development. All utility infrastructure and services within the development footprint are covered by this element of the description of the proposed development.</p> <p>The conditions of consent include general requirements for the utility infrastructure required to service the development including compliance with the requirements of any relevant utility provider in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.</p> <p>The proposed sewage and recycled water reticulation infrastructure within the site boundary of Stages 8 & 9, Nancarrow Road (to the centreline) and within the road reserve of Nancarrow Lane are consistent with the development as approved and covered by the existing development consent.</p>	No	Approved and constructed

Reticulate d sewage and recycled water system Stage 7A	<p>Not applicable. Stage 7A was removed from the Concept Plan Approval (MP09_0216) as landowners consent had not been granted at the time of submission. Stage 7A allotments were however included in the environmental assessment report for the Concept Plan.</p>	<p>LDA2018/0048 granted Deferred Development Consent 13/12/2018 In summary, the development provides for five (5) residential flat buildings inclusive of 44 apartments with associated basement parking and landscaping.</p> <p>The SEE for Stage 7A (development application number LDA2018/0048) identifies the site in Figure 2. The SEE (Section 2.2) includes site infrastructure in the brief proposal description of the proposed development. All utility infrastructure and services within the development footprint are covered by this element of the description of the proposed development.</p> <p>The SEE states that in accordance with Clause 1.4 of the <i>Ryde Local Environment Plan (LEP)</i>, the proposal includes rooms with area and facilities such as water, sewer and electricity, which render them usable as dwellings.</p> <p>The conditions of consent include general requirements for the utility infrastructure required to service the development including compliance with the requirements of any relevant utility provider in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.</p> <p>The proposed sewage and recycled water reticulation infrastructure within the site boundary of Stages 7A are consistent with the development as approved and covered by the existing development consent.</p>	No	Approved. Not yet constructed.
Sewage treatment plant (Local Water Centre)	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p> <p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf Refer to page 14 of the environmental assessment report located here for the inclusion of the allotment of the LWC in the Concept Plan.</p>	<p>LDA2017/0426 approved 13/3/2018 The approved network operator licence and DA includes the installation of a water recycling facility, as defined under the <i>Ryde Local Environmental Plan 2014</i>, and will be located within the basement of Buildings 2 and 3 as identified in LDA 2015/0018 (Stages 2 &3).</p>	No	Approved. Not yet constructed.
Water Industry Infrastructure as defined in the <i>Water Industry Competition Act 2006</i> (WICA)	<p>Part 3A Concept Plan Approval (ref: MP09_0216) approved 6 March 2013</p> <p>MP09_0216 (Mod 1) approved 16 October 2014</p> <p>MP09_216 (Mod 2) approved 16 January 2017</p>	Development permitted without consent under Part 4 of the <i>Environmental Planning and Assessment Act 1979</i>	<p>Yes</p> <p>Pursuant to State Environmental Planning Policy (Infrastructure) 2007, once a WICA licence has been granted for the proposed reticulation systems, no development consent under Part 4 of the <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i> is required. The infrastructure is an 'activity' as defined in Part 5 of the EP&A Act. A REF was prepared in a manner that is consistent with environmental impact assessments carried out in accordance with the requirements of Part 5 of the EP&A Act.</p>	Approved and constructed.

	<p>Concept Plan Approval includes utility upgrades as noted on Page 17 of the environmental assessment report located here: https://majorprojects.accelo.com/public/d1911e98e78d9302cda473058af62abb/MP09_0216%20%20MP09_0219%20%20EA%20Exec%20Sum%20and%20Part%20A.pdf</p> <p>Refer to page 14 of the environmental assessment report located here for the inclusion of the allotment of the LWC in the Concept Plan.</p>		<p>Before granting the WICA licence, the Minister for Energy and Utilities determined that the applicant has the capacity to carry out the activities that the licence authorised in a manner that did not present a significant risk of harm to the environment. A REF for Proposed Sewage and Recycled Water Reticulation Systems was prepared to assist the Minister with that decision and was considered in the granting of NOL 17_042 for the Existing NOL. That REF is referenced in the Existing NOL at Schedule A Condition 2.</p>	
			<p>A REF Addendum has been included in this NOLV1 Application for the inclusion of water industry infrastructure (sewer rising main and recycled water main) connecting to Stage 7A and the sewer pumps and transfer tanks to be located in the basements of stages 2, 3, 4, 5, 6, 7, 7A, 8 and 9.</p>	<p>Not approved. Not constructed.</p>




Statement of Environmental Effects

Residential Apartment Development

102 - 104 Bowden Street,
Meadowbank (Stage 7A)

Submitted to City of Ryde
On Behalf of Holdmark Property Group Pty Ltd

Report Revision History

Revision	Date Issued	Prepared by	Reviewed by	Verified by
01	29/11/17	Mark Purdy <i>Senior Project Planner</i>	Carlo Di Giulio <i>Associate Director</i>	Sue Francis <i>Executive Director</i>
02	1/12/17	Carlo Di Giulio <i>Associate Director</i>	Carlo Di Giulio <i>Associate Director</i>	
03	19/12/17	Carlo Di Giulio <i>Associate Director</i>	Sue Francis <i>Executive Director</i>	

This document is preliminary unless approved by a Director of City Plan Strategy & Development

CERTIFICATION

This report has been authorised by City Plan Strategy & Development, with input from a number of other expert consultants, on behalf of the Client. The accuracy of the information contained herein is to the best of our knowledge not false or misleading. The comments have been based upon information and facts that were correct at the time of writing this report.

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Appendices

Appendix	Document	Prepared by
1	Response to Pre-DA minutes	City Plan Strategy & Development (CPSD)
2	DCP Table of Compliance	CPSD
3	Clause 4.6 Exception Request (height)	CPSD
4	Survey Plan	LTS Lockley
5	Architectural Plans	Robertson + Marks
6	Design Verification Statement Apartment Design Guide Assessment	Robertson + Marks
7	Capital Investment Value Assessment	Altus Group
8	Traffic Impact & Parking Assessment	Thompson Stanbury Associates
9	Stormwater Plans	Australian Consulting Engineers
10	Landscape Plan	Site Image
11	BASIX Assessment & Certification	Building Sustainability Assessments
12	BCA Report	Vic Lilli & Partners Consulting
13	Accessibility Assessment	Design Confidence
14	Waste Management Report	Elephant's Foot
15	Noise Impact Assessment Report	DK Acoustics
16	Geotechnical Assessment	Assetgeo
17	Contamination Assessment	Martens Consulting Engineers

1. Executive Summary

1.1 Brief Introduction & Proposal Description

City Plan Strategy & Development Pty Ltd (CPSD) has prepared this Statement of Environmental Effects (SEE) to accompany a Development Application (DA) to Ryde City Council (RCC). The DA relates to land at 102 - 104 Bowden Street, Meadowbank (the subject development site), commonly referred to as Stage 7A. The proponent for the DA is Holdmark Property Group Pty Ltd (the proponent).

A detailed description of the proposal is provided in Section 3 of this report. However, in summary, the proposal includes:

- Earthworks and vegetation removal;
- Construction of a five (5) level residential flat building (RFB) inclusive of 44 dwellings.
- Construction of two (2) levels of basement parking below the RFB, providing a total of 59 car spaces;
- Landscaping works around the buildings including the creation of common open space areas and publicly accessible pedestrian paths;
- Ancillary items such as service rooms, community rooms, Communal terrace on the roof, site infrastructure and the like; and
- Vehicle access to the development is proposed via basement links between the proposed development and the adjoining Stage 7 development located at 37 -53 Nancarrow Avenue, Meadowbank.

The proposed development's Capital Investment Value (CIV) is approximately \$15.4 million, as provided by the Cost Estimate report at **Appendix 7**. Therefore, the proposal does not represent 'regional development', as provided by Clause 20 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Rather, the application will be assessed and determined by Council.

The site's southern boundary forms part of the approved Concept Plan MP09_216 (Mod 2). Specifically, the land located at 37-53 Nancarrow Avenue, Meadowbank forms the approved Stages 6 and 7 of the approved Concept Plan. This DA is therefore generally referred to as 'Stage 7A', notwithstanding that it does not form part of the approved Concept Plan.

Holdmark Property Group Pty Ltd are the proponents for Stages 6,7 and '7A'. This effectively ensures a high level of integration and consistency in the design and delivery of developments and the public realm will be achieved. In recognition of this, the proposal includes a shared vehicular access via a basement link between Stages 6&7 and 7A. This innovative design solution effectively removes the need for an additional vehicle crossing over footpaths (on a corner lot), thereby ensuring a high quality public domain that benefits from pedestrian comfort and safety.

The access to the shared basement will be delivered via a separate, but concurrently submitted modification to existing Development Consent LDA2015/0032, which relates to Stage 6 and 7. The application will be submitted pursuant to Section 96(1A) of the EP&A Act.



Figure 1: Proposed Constitution Road streetscape (Source: Robertson + Marks)

2. Introduction

2.1 Purpose

City Plan Strategy & Development Pty Ltd (CPSD) has prepared this Statement of Environmental Effects (SEE) to accompany a Development Application (DA) to Ryde City Council (LCC). The DA relates to land at 102 - 104 Bowden Street, Meadowbank (the subject development site). The proponent for the DA is Holdmark Property Group Pty Ltd (the proponent).

This SEE has been prepared pursuant to Section 78A of the Environmental Planning and Assessment Act, 1979 and Clause 50 of the Environmental Planning and Assessment Regulation, 2000. It is proposed to:

- describe the proposed development and its context;
- assess the proposal against the applicable planning controls and guidelines; and
- assess the potential environmental impacts and mitigation measures.

2.2 Brief Proposal Description

A detailed description of the proposal is provided in Section 3 of this report. However, in summary, the proposal includes:

- Earthworks and tree removal;
- Construction of a five (5) level residential flat building (RFB) inclusive of 44 dwellings.
- Construction of two (2) levels of basement parking below the RFB, providing a total of 59 car spaces;
- Landscaping works around the buildings including the creation of common open space areas and publicly accessible pedestrian paths;
- Ancillary items such as service rooms, community rooms, Communal terrace on the roof, site infrastructure and the like; and
- Vehicle access to the development is proposed via basement links between the proposed development and the adjoining Stage 7 development located at 37 -53 Nancarrow Avenue, Meadowbank.

The proposed development's Capital Investment Value (CIV) is approximately \$15.4 million, as provided by the Cost Estimate report at **Appendix 7**. Therefore, the proposal does not represent 'regional development', as provided by Clause 20 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Rather, the application will be assessed and determined by Council.

The land directly adjoining the site's eastern boundary forms part of the approved Concept Plan MP09_216 (Mod 2). Specifically, the land located at 37 -53 Nancarrow Avenue, Meadowbank forms the approved Stages 6 and 7 of the approved Concept Plan. This DA is therefore generally referred to as 'Stage 7A', notwithstanding that it does not form part of the approved Concept Plan.

Holdmark Property Group Pty Ltd are the proponents for Stages 6,7 and 7A. This effectively ensures a high level of integration and consistency in the design and delivery of developments and the public realm will be achieved. In recognition of this, the proposal includes a shared vehicular access via a basement link between Stages 6&7 and 7A. This innovative design solution effectively removes the need for an additional vehicle crossing over footpaths (on a corner lot), thereby ensuring a high quality public domain that benefits from pedestrian comfort and safety. A concurrent Modification Application will be submitted to seek consent to link the basements.

It is expected that a condition of consent will be imposed requiring the creation of rights of way for vehicle access and site servicing with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.



Figure 2: Subject development site outlined in red.

2.3 Supporting Information

This SEE has been prepared with information from the following specialist services:

- Architectural plans by Robertson + Marks.
- Site survey by LTS Lockley.
- Acoustic assessment by DK Acoustics.
- Clause 4.6 exception request (height) by CPSD.
- Ryde DCP Table of Compliance by CPSD.
- Cross flow ventilation assessment by Robertson + Marks.
- Solar access assessment by Robertson + Marks.
- SEPP 65 & ADG Assessment by Robertson + Marks.
- Energy efficiency and BASIX assessment by Building Sustainability Assessments.
- Waste management plan by Elephant's Foot.
- CIV assessment by Altus Group.
- Accessibility assessment by Design Confidence.
- Traffic assessment by Thompson Stanbury Associates.
- Landscape plan by Site Image.
- Phase 1 contamination assessment by Martens Consulting Engineers.
- BCA assessment by Vic Lilli & Partners Consulting.
- Geotechnical assessment by Assetgeo.

2.4 Pre - DA & Urban Design Review Panel meeting

Ongoing consultation with Ryde City Council in relation to the detailed design of this site has been undertaken, including a formal pre-lodgement meeting held with Council's Urban Design Review Panel (UDRP) and Pre-DA on 19 October 2017 in which Council generally expressed their support for this application. The meeting was attended by the proponent, representatives from CPSD, UDRP Panel members as well as senior staff from Council's relevant departments. The minutes of the meeting, as provided by Council, are provided at **Appendix 1** of this SEE.

Consideration of the minutes suggests no fundamental objections were raised by Council to the proposal. The main items for consideration as suggested by Council include various design and building management related matters. The table below itemises each of the matters raised by Council at the URDP and Pre-DA, as well as the manner in which each has been responded to as part of this DA.

Table 2: Response to URDP and Pre-DA minutes

Item raised at Pre-DA meeting	DA Response
1. The design of Constitution Road is currently in progress. Demonstration of the successful integration of private and public spaces/street should be provided.	<p>The architectural package and landscape plan provided at Appendix 5 and 11 respectively, demonstrate that the development has been carefully designed to provide an appropriate interface with surrounding streets and public domain.</p> <p>The ground floor plane is suitably activated, having regard to the constraints imposed due to the fall of the site. The buildings are stepped with the fall of the site and individual entries are provided to the northern ground floor apartments, which activates the ground floor plane of the development. The use of deep planted terraces at the front of the courtyards for the northern ground floor apartments also creates a pleasant landscape and private courtyard setting.</p> <p>An accessway from the site boundary is provided from Bowden Street and Constitution Road, activating the dual frontage of the site and providing for an interesting corner interface.</p> <p>Facades are proposed to be built to the street edge behind the 6-metre setback from Constitution Road and 4 metre setback from Bowden Street. In this regard, the proposed development appropriately defines the public domain with generous landscaped setbacks, whilst also ensuring that the ground floor integrates with the private domain around the building.</p>
2. The proposal exceeds the height controls of 15.5m at the eastern end of level 3 and the majority of level 4. The proposed height breach may be supported subject to a satisfactory argument as part of Clause 4.6 of the LEP variation to development standards.	<p>A Clause 4.6 variation report accompanies this DA and is provided at Appendix 3. The Clause 4.6 variation demonstrates robust justification for the height breach and that it causes no significant detrimental impacts on the streetscape or neighbouring properties in respect of solar access, privacy or loss of views.</p>

<p>3. The internal circulation at ground level is excessive and the long dead-end corridor to the lift lobby is well hidden from the Constitution Road entry on level 3. A multi-core building may be a better solution for access.</p>	<p>Refer to the SEPP 65 & ADG Assessment by Robertson + Marks Architects at Appendix 6.</p> <p>Careful consideration has been given to ensuring the development provides suitable sight lines from, towards or within lift lobbies. In addition, the design also allows for passive surveillance from the apartments to the circulation and lift lobbies.</p> <p>In addition, two separate pedestrian access points are proposed from Bowden Street and Constitution Road. The dual entries provide opportunities for casual social interaction among residents and the comfortable and safe movement of residents and guests. The indentation on the building envelope on the southern façade in combination with the widows on the eastern façade also assist to ensure ample daylight is provided into the space. The generous lobby areas and high ceilings provided by the void above the lobby further ensure a comfortable light filled environment is provided at the building entry, the lift lobby and apartment entry doors.</p>
<p>4. The Panel supports the shared vehicle access through the adjacent Stage 6&7 and recommends that the design be further refined to maximise legibility to parking and to ensure day to day waste management is convenient within the building.</p>	<p>Refer to the Waste Management Report and Traffic Impact Assessment provided at Appendix 15 and 9 respectively. The reports demonstrate that compliant visitor and resident parking has been provided on site and that suitable access will be provided for site servicing within Stages 6&7. It is expected that a condition of consent will be imposed requiring the creation of rights of way for site servicing with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site. Further, the architectural plans (sheets A881/A, A885/a and A886/A) clearly demonstrate the operation of the shared facilities.</p>
<p>5. The Panel encourages the design to be amended to accommodate ground level apartments at the eastern end of the building to address the link with Stages 6&7 through provision of individual apartment entries.</p>	<p>The architectural package and landscape plan (see drawing number 101 Issue D) provided at Appendix 5 and 11, respectively demonstrate that the development has been carefully designed to address the link with Stages 6&7. In particular, the east facing, ground floor dwellings include balconies which directly overlook the through site link. The main corridor also leads and opens to the link. It is considered that minimising the number of entries directly facing the links minimises crime risk. It should also be noted that Lower Ground dwellings LG004 and LG005 have direct pedestrian access to/from Constitution Road.</p>
<p>6. Cross ventilation with a high number of single aspect apartments is not yet achieved and could be improved by adding a second core and increasing the number of dual</p>	<p>Refer to the SEPP 65 & ADG Assessment by Robertson + Marks at Appendix 6 confirming</p>

aspect units. It is not clear how Unit 1134 and similar on above level achieves cross ventilation.	that the ADG is satisfied with respect to natural ventilation. 70% of all proposed dwellings are naturally cross ventilated, which exceeds the ADG recommended minimum of 60%.
7. The proposal should aim to achieve sustainability measure above the minimum requirements of BASIX	The BASIX Certificate for the proposed development provided at Appendix 11 demonstrates that a range of suitable active and passive measures will be implemented to minimise energy and water consumption.
8. The ground level and its resolution with site levels, individual ground floor unit entries and building entries should reinforce the streetscape and create a pleasant landscape and private courtyard setting.	Refer to the response provided in Item 1 of this Table.
9. Communal open space on the roof of level 3 should be carefully designed to provide amenity for residents all year around including shade. The roof-top Communal Open Space area is to be setback from the eastern side of the building to satisfy the visual privacy requirements of the ADG (i.e. 18m from the balconies and habitable rooms of the neighbouring building).	The ADG Assessment and Landscape Plan provided at Appendix 6 and 10 respectively, demonstrate that the development provides for suitable consideration of all year-round amenity for residents. Further, the extent of the rooftop communal open space has been increased such that a separation of 22m is achieved between the nearest multi storey building, being Stage 7, ensuring compliance with the ADG.
10. Open space along the southern side of the site would be better allocated to adjacent apartments as private open space rather than as long linear communal space with limited use.	Refer to the Architectural Plans prepared by Robertson + Marks at Appendix 5 . In summary, apartments on the lower ground floor apartments have been provided with generous areas of private open space, while the deep soil zone has been suitably landscaped to provide a buffer to properties adjoining the site to the south.
11. At the eastern end of the building, the 5th storey above ground level does not meet the ADG 18m separation distance. The proposal should demonstrate how separation requirement can be met or provide alternative solutions as per the ADG.	Refer to the SEPP 65 & ADG Assessment by Robertson + Marks Architects at Appendix 6 concluding that although non-compliant, suitable amenity will be achieved. In summary, this is achieved by eliminating any windows which may have looked directly east, or directly to Stage 7.
12. Clear sight lines to lift lobbies would improve legibility and way finding for both residents and guests.	Refer to the response provided in Item 3 of this Table.
13. The number of units to the one lift core exceeds the requirements of the ADG. The distance from the lift to the eastern end unit is also considered excessive (30m).	Refer to the SEPP 65 & ADG Assessment by Robertson + Marks Architects at Appendix 6 . The ADG design criteria in section 4F-1 outlines that maximum number of apartments off a circulation core on a single level is eight. Notwithstanding this, the design guidance provides that "Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level".

	<p>The proposed development includes a maximum of nine apartments off a circulate core on Level G, 1, 2 and 3.</p> <p>The Ground Floor provides additional entries from private terraces for 2 dwellings, thereby ensuring only 7 apartments are reliant on the circulation core on this level.</p> <p>In relation to the upper levels the proposed design includes several innovative features which ensure access to ample daylight:</p> <ul style="list-style-type: none"> ▪ provision of a north facing window to the void overlooking the ground floor lobby; ▪ indentation in the building envelope on the southern façade; ▪ a window on the eastern façade; and, ▪ seating <p>The ADG design guidance requires corridors greater than 12m in length from the lift core to be articulated. The eastern end of level LG, G, 1, 2 and 3 contain four apartments per level that are located on a corridor greater than 12m from the lift core. The corridors are provided with multiple windows as well as seating.</p>
14. A suitable mix of unit types and adaptable units should be included as per council's requirements.	<p>Refer to the Access Report prepared by Design Confidence at Appendix 13.</p> <p>In summary the Ryde DCP 2014 requires that residential flat buildings must provide an accessible path of travel to all units as well as the provision of 10% adaptable units. It is proposed that the development provide four (4) adaptable units. The application is accompanied by an Access Report prepared by Design Confidence which demonstrates that the development can comply with the access requirements subject to the design modifications recommended in the report.</p> <p>Further, the proposal includes 1 studio dwelling, 15 one-bedroom dwellings, 24 two bedroom dwellings, and 4 three bedroom dwellings.</p>
15. The Panel encourages a more nuanced approach to the façade and roof design by incorporating vertical elements, expressing the base of the building, integrating elements into a cohesive whole and creating an intentional building silhouette and roof line. The exterior of the building is to be redesigned to relate with the high-quality architecture exhibited in Meadowbank.	<p>Refer to the SEPP 65 Assessment by Robertson + Marks at Appendix 6. In summary, the exterior of the building has been designed to provide a suitable façade and roof design that relates to the high-quality architecture exhibited in Meadowbank. It includes varied, and interesting external finishes in particular.</p>
16. East facing windows to bedrooms on Level 03 to be deleted to satisfy ADG Building Separation/Visual Privacy requirements. The the east facing window to the Studio should also be relocated to the southern elevation.	<p>Refer to the SEPP 65 & ADG Assessment by Robertson + Marks Architects at Appendix 6. East facing window has been deleted.</p>

17. As the basement carpark will need to be tanked, ventilation will need to be installed through the building to the roof.	Ventilation now included in Drawing Number AR WD A103/J by Robertson + Marks.
18. A traffic and parking assessment report is required, with assessment of the intersection at Bowden Street and Constitution Road, swept path diagrams and demonstration that all servicing requirements are to be provided on-site, compliant parking rates and loading bays designed to accommodate a minimum of 12.5m heavy rigid vehicle with 4.5m minimum height clearance.	A Traffic Impact Assessment has been provided at Appendix 8 . The report demonstrates that compliant visitor and resident parking has been provided on site. Suitable access will be provided for site servicing within Stages 6&7. A right of way will be registered on title of the neighbouring property at 37-53 Nancarrow Avenue. It is expected that a condition of consent will be imposed requiring the creation of rights of way for site servicing with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.
19. As the site will be accessed via Stage 7 vehicle entry point, a right of way will be required over the neighbouring lot.	A right of way will be registered on title of the neighbouring property at 37-53 Nancarrow Avenue. It is expected that a condition of consent will be imposed requiring the creation of rights of way with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.
20. The logistics of providing access to visitor spaces will be required, noting that visitors will be required to enter through two access points.	Refer to the response provided in Item 17 of this Table.
21. The development should be reconfigured to accommodate larger service vehicles (delivery trucks/waste vehicles).	Refer to the response provided in Item 17 of this Table.
22. The development is to consider existing flood conditions and basement should be protected from PMF Flood level.	The site is not within a flood prone area. As such, no flood related impacts are anticipated. Typical construction methods will be adopted for the basement, as provided by the Building Code of Australia, the Australian Standards, and any relevant consulting engineer, to ensure the proposed basement is adequate in terms of protection from water.
23. The development will require a drainage easement to be formalised over the downstream properties so as to discharge to Nancarrow Avenue.	A drainage easement will be registered on title of the neighbouring property (i.e. Stage 6 & 7). It is expected that a condition of consent will be imposed requiring the creation of the drainage easement with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.
24. The development is to incorporate WSUD measures and the discharge to the kerb would warrant the discharge rate be restricted to 30L/s.	A Stormwater Management Plan has been provided at Appendix 9 , which demonstrates that suitable WSUD measures have been incorporated. Refer to stormwater plans for discharge rates and other technical information.
25. A waste management plan is required.	A Waste Management Plan has been provided at Appendix 14 .

26. A concept landscape plan to be submitted with the DA showing all public domain works proposed	A Concept Landscape Plan has been provided at Appendix 10 , which shows all proposed public domain works.
27. A geotechnical report will be required to provide validation in terms of site contamination in accordance with the procedures as required under SEPP 55	A Geotechnical Report and a Contamination Assessment have been provided at Appendix 16 and 17 . Refer to Section 6.3 of this report for discussion regarding SEPP 55.

3. Site and Context Description

3.1 Site Identification

The subject site is formally referred to as Lot 1 in DP 730371 and SP20107. It is commonly referred to as 102-104 Bowden Street, Meadowbank. The subject site is located at the intersection of Bowden Street and Constitution Road.

An aerial view of the subject site is provided below.



Figure 3: Aerial view with subject site outlined in red (Source: Six Maps & CPSD)

3.2 Dimensions, Area & Topography

The survey plan accompanying the application at **Appendix 4**, prepared by LTS Lockley Surveyors, can be referenced for a detailed understanding of the site's dimensions, area and topography. A summary of each site is provided below:

- Lot 1 in DP 730371 is rectangular in shape. Its width is approximately 15.7m, its depth is approximately 66.6m, and site area is 1,044 sqm. It has a maximum north east to south east gradient of 5.6m.
- SP 20107 is rectangular in shape. Its width is approximately 15.6m, its depth is approximately 62.1m, and site area is 974 sqm.

3.3 Existing Development

Existing development on each of the subject lots is outlined below:

- Lot 1 in DP 730371 is currently used for light industrial purposes. It contains a single level industrial building with a ramped concrete driveway and bitumen car park on the sites frontage. Historically, the site was used for furniture recovery and upholstery. Currently, however, the site is used for warehousing. A single immature eucalyptus tree with a trunk diameter of 0.4m is located to the rear of the site.

- SP 20107 is currently used for light industrial purposes. It contains a two-level industrial building with a ramped concrete driveway and bitumen car park on the sites frontage. Historically, the site was used for warehousing and continues to be used as such.
- Pedestrian and vehicular access to the site is currently available from individual driveways on Bowden Street. Constitution Road is comprised a main elevated component as well as a lower parallel southern branch, which provides accesses to the rear of the subject site.

The photographs of the subject site below illustrate the existing development and built form.



Figure 4: Frontage of 102 Bowden Street (Lot 1 in DP 730371) (Source: Google Earth & CPSD)



Figure 5: Eastern elevation of 102 Bowden Street and lower parallel southern branch of Constitution Road (Source: Google Earth & CPSD)

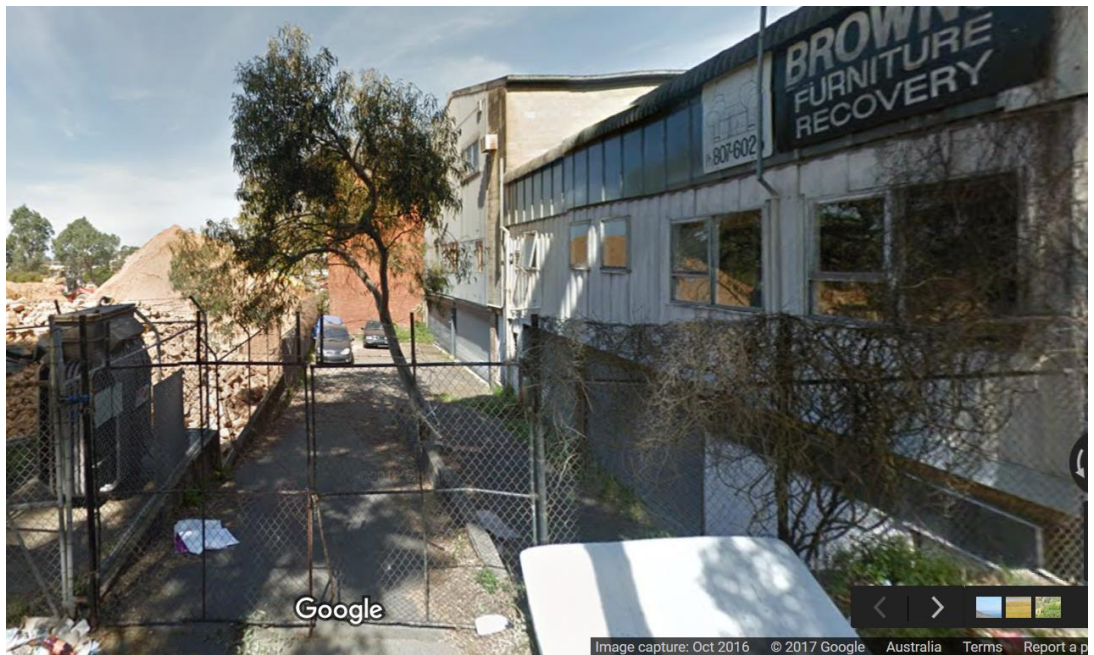


Figure 6: Southern elevation of 102-104 Bowden Street (Source: Google Earth & CPSD)



Figure 7: Frontage of 104 Bowden Street (SP 20107) (Source: Google Earth & CPSD)

3.4 Adjoining Properties

The subject site is surrounded by a mixture of residential apartments, light industrial/commercial developments and detached housing as described in detail below:

- The land located north of Constitution Road is primarily comprised of single and two storey residential dwellings and the Ann Thorn Park.
- To the east of the subject site is 32-37 Nancarrow Avenue, which is referred to as Stage 6 and 7 in the approved Concept Plan MP09_216 (Mod 2). Development consent (LDA2015/0032) was granted on this site for the construction of two residential

flat buildings with a maximum height of 8 storeys (LDA2015/0032). The site is currently being cleared and prepared for construction.

- To the immediate south of the subject site are industrial buildings of varying size and styles. As shown in the Concept Plan Image below, further to the south of the site, across Nancarrow Avenue are Stages 8 and 9 in the Concept Plan. Development consent (LDA2015/0031) was granted on Stages 8 and 9 for the construction of three residential flat buildings with a maximum height of 10 storeys. The site is currently vacant and being prepared for construction.
- To the immediate west of the subject site is 2 Angas Street, which is a 7-storey mixed use building currently under construction. The property located at 117 Bowden Street is also approved for a 7-storey apartment building (LDA2015.0220) and is currently vacant. It is understood that adjoining light industrial buildings will also be redeveloped for residential apartments in the future.

The Concept Plan provided in **Figure 8** illustrates development on allotments adjoining the subject site, as well as the locality generally.

Figure 9-11 demonstrate land uses and buildings on allotments adjoining the subject site. They are indicative of built form and land uses in the locality generally.



Figure 8: Extract from the Masterplan of the Shepherds Bay redevelopment site prepared by Place Planning dated June 2013 which identifies the boundary of the Concept Plan Site and the subject site in red.



Figure 9: To the west of the subject site, demonstrating RFB and vacant land (Source: Google Earth)



Figure 10: To the south of the subject site, showing existing light industrial buildings typical of the locality (Source: Google Earth)

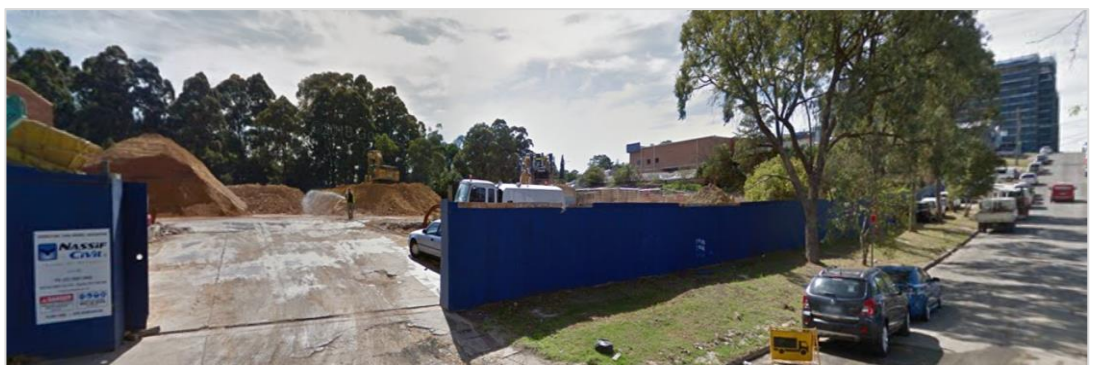


Figure 11: To the east of the subject site, views of vacant land where RFBs will be constructed as part of Stage 6 & 7 of the Concept Plan (Source: Google Earth)

3.5 Locality Description

3.5.1 Shepherd's Bay

The Shepherd's Bay area is located approximately 14 kilometres north-west of the Sydney CBD and on Foreshore between Ryde and Meadowbank.

Council's stated vision for the urban renewal of Shepherds Bay *"is to create a higher density transit-orientated neighbourhood, providing for a mix of residential and commercial/retail uses"* (Ryde DCP 2014). It is a vision of an appealing and lively community with benefits for future and existing residents and visitors to Meadowbank and safer waterfront access for the public.

Shepherds Bay has historically been characterised as a light industrial and manufacturing area. More recently, the area has been undergoing pronounced revitalisation and renewal, with the character of the area transitioning to provide high quality residential development. The transformation of historic industrial land uses with large scale residential precincts is representative of a wider trend of urban renewal, as seen in surrounding foreshore areas such as Rhodes and Breakfast Point.

Shepherds Bay benefits from local retail centres including the Meadowbank shops and West Ryde Marketplace, as well as major retail centres in Rhodes and Top Ryde. There are extensive existing parks and recreation facilities including Olympic Park and access to the Parramatta River. Shepherd's Bay benefits from being in the vicinity of regular rail, ferry and bus services. In this regard the site is within walking distance of the Meadowbank Railway Station, the Village Plaza and the Meadowbank Ferry Wharf.

3.5.2 The Shepherds Bay Concept Plan Site

As indicated earlier in this SEE, the land surrounding the site benefits from detailed master planning and an approved Concept Plan MP09_216 (Mod 2).

The Planning Assessment Commission (PAC) approved Concept Plan MP09_0216 on 6 March 2013. In summary, the concept approval includes multiple, multi storey residential or mixed-use buildings, basement parking, infrastructure works as well as public open space.

The principal portion of the Concept Plan site forms an amalgamated precinct bounded by Bowden Street, Constitution Road, Belmore Street and Rothesay Avenue. The site is also dissected by Nancarrow Avenue and Hamilton Crescent.

Of relevance to the Concept Plan Approval, the subject site does not form part of the Concept Approval.

Figure 12 below has been extracted from the relevant instrument of determination. Those areas outlined in red demonstrate the sites which form part of the Concept Approval.



Figure 12: Extract of Concept Approval (Source: NSW Department of Planning and Environment).

3.6 Strategic Planning Context

3.6.1 A Plan for Growing Sydney

A Plan for Growing Sydney aims to provide a strong global city and a great place to live. The goals of the Plan are:

- a competitive economy with world-class services and transport;
- a city of housing choice with homes that meet our needs and lifestyles;
- a great place to live with communities that are strong, healthy and well connected; and
- a sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources. The Metropolitan Strategy divides Sydney into sub-regions. The subject site is located within the Central sub-region.

The proposed development is not inconsistent with the priorities of the sub-region or the goals of A Plan for Growing Sydney.

3.6.2 Draft Greater Sydney Region Plan

The draft *Greater Sydney Region Plan* was released in October 2017 and is the first Region Plan by the Greater Sydney Commission (GSC). Once adopted, this Plan will replace *A Plan for Growing Sydney*.

The draft Plan encompasses a global metropolis of three cities – the Western Parkland City, the Central River City and the Eastern Harbour City. It is envisioned that people of Greater Sydney will live within 30 minutes of their jobs, education and health facilities, services and great places.

Key directions of the draft Plan include:

- *Sustainability*: Introduce distributed energy, recycled water and smart waste management infrastructure.
- *Housing*: Support a greater range of housing types across the Eastern Harbour City, supported by provision of social and green infrastructure.
- *Lifestyle*: Increase community open space and sport and recreation facilities, including sharing existing green assets with the local community.
- *Transport*: Improve public transport links to the Harbour CBD and strategic centres to improve business-to-business links and support the 30-minute city.

The proposal is consistent with the draft Plan in providing increased housing supply within 30 minutes of jobs, education, health and other services.

3.6.3 Draft North District Plan

The site is located within the North District, as part of the Eastern Harbour City, identified in the draft *Greater Sydney Region Plan*.

In the draft *North District Plan*, the Ryde LGA has the potential to accommodate additional dwellings to assist in reaching the targets of 7,600 additional dwellings between 2016 and 2021.

Increasing residential densities within appropriate locations including Shepherds Bay make these places more vibrant and improve housing choice. Redevelopment of the subject site will assist in achieving the desired regional objectives and especially contribute to the housing targets set by the draft *North District Plan*.



Figure 13: Approximate location of site within Draft North District Plan

4. Proposal Description

4.1 Brief Proposal Description

In summary, the DA proposes a

- Earthworks works and vegetation removal;
- Construction of five (5) level RFB above two (2) basement levels inclusive of 44 dwellings and 59 basement car parking spaces;
- Typical stormwater infrastructure through the site;
- Landscaping within the site and on the communal roof terrace; and
- Vehicle access to the development is proposed via basement links between the proposed development and the adjoining Stage 7 development located at 37 -53 Nancarrow Avenue, Meadowbank.

4.2 Detailed Proposal Description

Each level of the DA's proposed RFB, and associated parking levels, is described in detail below:

Table 2: Detailed Description

Level	Description	Car parking Spaces/Bedrooms
Basement Level 2	<ul style="list-style-type: none">▪ A total of twenty-six (26) car spaces for residents.▪ 20sq m of bicycle parking.▪ One (1) lift and two (2) emergency stair wells providing access to the lower ground level, ground level and entire building envelope.▪ A total of 141.12m3 of storage space for residents.▪ One (1) secure vehicular access point for cars to/from the Level 1 Basement of the adjoining Stage 7 building (located at 37 -53 Nancarrow Avenue). This point enables vehicular access to both the proposed Basement Level 1, the Lower Ground Level of the Stage 7 building and the vehicular entry located at the southern end of Stage 7 building.▪ The vehicular access includes a sliding fire door, enabling the basement to be sealed off from the Stage 7 building in the event of a fire.	
Basement Level 1	<ul style="list-style-type: none">▪ A total of thirty-three (33) car spaces for residents and their visitors, including nine (9) visitor spaces and 5 accessible spaces.▪ One (1) lift and two (2) emergency stair wells providing access to the lower ground level, ground level and the entire building envelope.▪ A total of 114m3 of storage space for residents.▪ A garbage room accommodating a total of 8 x 240L bins and 3 x 1100L as well as an adjoining bulk items room.▪ One (1) secure vehicular access point for cars to/from the Lower Ground Floor of the adjoining Stage 7 building (located at 37 -53 Nancarrow Avenue). This point enables vehicular access to both the proposed Basement Level 2 and the vehicular entry located at the southern end of Stage 7 building.	
Lower Ground Level	<ul style="list-style-type: none">▪ Pedestrian access to/from Constitution Road.▪ A total of five (5) dwellings, each with external private open space (POS), comprising:<ul style="list-style-type: none">▪ 1 x 1-bedroom dwellings.▪ 4 x 2-bedroom dwellings.▪ 30.9m3 storage area for all dwellings.	

	<ul style="list-style-type: none"> One (1) lift and three (3) emergency stair wells providing access to the ground level and building perimeter. A 65m² community room. A central corridor providing access to each of the proposed dwellings. Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like. Void over mechanical services suspended over car park. 596m² landscaped area around the perimeter of the lower ground level.
Ground Level	<ul style="list-style-type: none"> Pedestrian access to/from Constitution Road. A total of nine (9) dwellings, each with external private open space (POS), comprising: <ul style="list-style-type: none"> 3 x 1-bedroom dwellings. 5 x 2-bedroom dwellings. 1 x 3-bedroom dwellings. 23.04m³ storage area for all dwellings. One (1) lift and three (3) emergency stair wells. A 596m² landscaped area (shared with Lower Ground Level). A lobby area and central corridor providing access to each of the proposed dwellings. Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like. Landscaping around the perimeter of the ground level building footprint inclusive of pathways, lighting, shrubs, turf and the like.
Level 1	<ul style="list-style-type: none"> A total of nine (9) dwellings, each with external private open space (POS), comprising: <ul style="list-style-type: none"> 3 x 1-bedroom dwellings. 5 x 2-bedroom dwellings. 1 x 3-bedroom dwellings. One (1) lift and two (2) emergency stair wells. An awning, a void of the lobby and central corridor providing access to each of the proposed dwellings. Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like.
Level 2	<ul style="list-style-type: none"> A total of nine (9) dwellings, each with external private open space (POS), comprising: <ul style="list-style-type: none"> 2 x 1-bedroom dwellings. 6 x 2-bedroom dwellings. 1 x 3-bedroom dwellings. One (1) lift and three (2) emergency stair wells. Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like.
Level 3	<ul style="list-style-type: none"> A total of nine (9) dwellings, each with external private open space (POS), comprising: <ul style="list-style-type: none"> 1 x studio dwelling. 5 x 1-bedroom dwellings. 3 x 2-bedroom dwellings. One (1) lift and two (2) emergency stair wells.

	<ul style="list-style-type: none"> Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like.
Level 4	<ul style="list-style-type: none"> A total of three (3) dwellings, each with external private open space (POS), comprising: <ul style="list-style-type: none"> 1 x 1-bedroom dwellings. 2 x 2-bedroom dwellings. A roof top terrace with 439m2 communal area. A central corridor providing access to each of the proposed dwellings and to each lift core. One (1) lift and one (1) emergency stair well. Various plant and service rooms for garbage chutes, service ducts, emergency equipment and the like.

4.3 Development Statistics

The key statistics and elements of the proposal are summarised in **Table 2** below:

Table 4: Development Statistics

Element	Proposal
Site Area	1,946m2
Gross Floor Area (GFA)	3,869m2
Floor Space Ratio (FSR)	1.95:1
Maximum Height	16m to the top of the main envelope, or RL 27.7. A height of 18m, or RL 29.1, is achieved to the top of the lift over run and emergency stairwell.
Total Dwellings	44 dwellings over 5 levels comprising: <ul style="list-style-type: none"> 1 x Studio (2.3%) 15 x 1 Bedroom (34.1%) 24 x 2 Bedroom (54.5%) 4 x 3 Bedroom (9%)
Total Car Parking	<ul style="list-style-type: none"> 59 spaces for residents. 4 bicycle spaces located in Basement Level 1 and 8 in Basement Level 2.
Landscaping	<ul style="list-style-type: none"> Total landscaped area = 596m2 or 30% of site area. Deep soil as defined by ADG = 301m2 or 15% of site area. Total deep soil area is 470m2 or 24% of site area.
Range of excavation depth to basement	Approximately 2.1m (towards southern end of footprint) to 7.7 metres (towards northern end of footprint)

4.4 Cost of Construction

The proposal's CIV is approximately \$15.4 million as provided in the Quantity Surveyor's assessment provided at **Appendix 7** of this SEE.

5. Environmental Planning Framework

This section of the SEE identifies the environmental planning framework applicable to the subject proposal. This includes legislation, environmental planning instruments such as SEPPs and LEPs, as well as non-statutory instruments such as DCPs, developer contribution plans, policies and the like. **Section 6** of this SEE provides an assessment of the proposal against the identified framework.

- Environmental Planning and Assessment Act, 1979 (EP&A Act);
- Environmental Planning and Assessment Regulation 2000 (EP&A Regulations);
- State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55);
- State Environmental Planning Policy No. 65 - Design Quality of Residential Apartment Development (SEPP 65) & Apartment Design Guide (ADG);
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX SEPP);
- State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP);
- State Environmental Planning Policy (State and Regional Development) 2017;
- Sydney Regional Environmental Planning Policy (Sydney Harbour Catchment) 2005 (Sydney Harbour Catchment SREP);
- Ryde Local Environmental Plan 2014 (RLEP 2014); and
- Ryde Development Control Plan 2010.

6. Environmental Planning Assessment

This section of the SEE provides an assessment of the proposal against the framework identified in **Section 5** above. The assessment identifies the proposal's consistency, or otherwise, with the objectives, merit based expectations, development standards and non-statutory controls of the relevant framework.

6.1 EP&A Act

6.1.1 Section 5 - Objects

The EP&A Act is the principle planning and development legislation guiding development in New South Wales (NSW). As prescribed by Section 5, the objectives of the EP&A Act are to encourage:

- i. *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- ii. *the promotion and co-ordination of the orderly and economic use and development of land,*
- iii. *the protection, provision and co-ordination of communication and utility services,*
- iv. *the provision of land for public purposes,*
- v. *the provision and co-ordination of community services and facilities, and*
- vi. *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- vii. *ecologically sustainable development, and*
- viii. *the provision and maintenance of affordable housing, and..."*

The proposal is principally for a high density residential development. As will be demonstrated later in this SEE, the proposal is a permissible land use, and substantially compliant with the relevant objectives, development standards and/or numerical controls prescribed by the relevant environmental planning framework.

The proposal has been designed to increase housing opportunities for a range of household types. It also adopts contemporary design principles, as well as materials and finishes. Typical measures intended to minimise natural environmental impacts are also included, such as stormwater control, passive solar design, as well as BASIX measures.

In light of the above, this SEE provides that the proposal is consistent with the objects of the EP&A Act.

6.1.2 Section 79C - Evaluation

Section 79C of the EP&A Act specifies the matters which a consent authority must consider when determining a DA. Those matters in Section 79C of the EP&A Act of relevance to this DA are addressed in **Table 3** below, and elsewhere in this SEE.

Table 3: Section 79C(1)(a) Considerations

Section	Comment
Section 79(1)(a)(i) Any environmental planning instrument	Consideration of relevant instruments is discussed in Section 6.3 to 6.12 .
Section 79C(1)(a)(ii) Any draft environmental planning instrument	Consideration of relevant draft instruments is discussed in Section 6.3 to 6.12 .
Section 79C(1)(a)(iii)	Consideration of relevant development control plan/s is discussed in Section 6.12 .

Any development control plan	
Section 79C(1)(a)(iia) Any planning agreement	Planning agreements do not apply to the subject site or subject development site.
Section 79C(1)(a)(iv) Matters prescribed by the regulations	Any relevant matters prescribed by the regulations are addressed in Section 6.2 .
Section 79C(1)(a)(v) Any coastal zone management plan	Coastal zone management plans do not apply to the subject site.
Section 79C(1)(b) The proposal's likely impacts	The proposal's likely impacts are evaluated in Section 6.10 .
Section 79C(1)(c) Site suitability	The subject development site's suitability for the proposal is considered in Section 6.11 .
Section 79C(1)(d) Any submissions	Public submissions are addressed at Section 6.10 , or can be addressed as requested.
Section 79C(1)(e) The public interest	The proposal is considered with respect to the public interest in Section 6.10 .

6.1.3 Section 91 Integrated Development

This section of the Act defines integrated development as matters which require consent from Council and one or more approvals under related legislation. In these circumstances, prior to granting consent Council must obtain from each relevant approval body their General Terms of Approval (GTA) in relation to the development.

The proposed development is not nominated as an integrated development at this stage. IN particular, the Geotechnical Assessment has not identified any likelihood of dewatering for the purpose of construction.

6.2 EP&A Regulation 2000

6.2.1 Clause 50(1-1AB) - How must a development application be made

This clause of the EP&A Regulations states that a DA for a residential apartment development must be accompanied by a design verification statement from a qualified designer, which confirms:

- a) *that he or she designed, or directed the design, of the development, and*
- b) *provide an explanation that verifies how the development:*
 - i. *addresses how the design quality principles are achieved, and*
 - ii. *demonstrates, in terms of the Apartment Design Guide, how the objectives in parts 3 and 4 of the guide have been achieved.*

A Verification Statement, prepared by Robertson + Marks (registered Architect's Number 9889) accompanies this SEE at **Appendix 6**. An Apartment Design Guide (ADG) compliance table has also been prepared by Robertson + Marks, and is provided at **Appendix 6**. The statement and the compliance table provide that the design quality principles of SEPP 65, as well as the outcomes expected by the ADG, are met by the proposal.

In addition, Clause 50 refers to Schedule 1 of the EP&A Regulations, which provides that any DA for residential apartment development to which SEPP 65 applies, must also be accompanied certain information. Architectural plans, landscape plans and the like are provided at **Appendix 5** and **10** of this SEE, in accordance with Schedule 1. These items are

provided in addition to the previously mentioned Design Verification Statement and the ADG compliance table (**Appendix 6**), but which are also required pursuant to Schedule 1.

6.3 SEPP 55

6.3.1 Clause 2 - Object of this Policy

SEPP 55 establishes State-wide provisions to promote the remediation of contaminated land. In particular, the policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment:

- by specifying when consent is required, and when it is not required, for a remediation work, and
- by specifying certain considerations that are relevant in rezoning land and in determining development applications in general and development applications for consent to carry out a remediation work in particular, and
- by requiring that a remediation work meet certain standards and notification requirements.

6.3.2 Clause 7 - Contamination and remediation to be considered in determining development application

This clause requires that a consent authority must not grant consent to a development unless it has considered whether a site is contaminated, and if it is, that it is satisfied that the land is suitable (or will be after undergoing remediation) for the proposed use.

Martens Consulting Engineers were engaged to assess and report on the existing conditions of the site. Their assessment is provided at **Appendix 17** of this SEE. In summary, the assessment provides that the site can be made suitable for the proposed development, subject to various additional testing. It is expected that such testing would be required as a condition of any consent.

In light of the above, this SEE provides that the proposal satisfies the relevant objectives and clauses of SEPP 55.

6.4 SEPP 65 and ADG

6.4.1 Clause 2 - Aims, objectives etc

SEPP 65 aims to improve the design quality of residential apartment development in NSW by, in summary:

- Ensuring such buildings contribute to sustainable development;
- Provide sustainable housing in social and environmental terms;
- Achieve better built form and aesthetics of buildings, streetscapes and the public spaces they define;
- Better satisfy the increasing demand, changing social and demographic profile of the community;
- Maximise amenity, safety and security for the benefit of occupants and the wider community
- Minimise the consumption of energy from non-renewable resources

To assist with meeting these objectives, the SEPP prescribes nine (9) design quality principles which must be met by any respective DA. As referenced earlier, SEPP 65 also

prescribes the ADG which provides further detailed measures to assist with satisfying the objectives and design principles.

The development meets the definition of a residential flat building. As such the provisions of SEPP 65 are applicable to the proposed development.

As stated earlier, this SEE is accompanied by a Design Verification Statement as well as an ADG compliance table at **Appendix 6**. Both appendices confirm that the SEPP's design principles as well as the ADG's requirements would be met by the proposal.

6.4.2 Apartment Design Guidelines

Robertson + Marks, the registered architect who led the proposal's design, have prepared a compliance table demonstrating the proposal's consistency or otherwise, with the ADG. The table is provided at **Appendix 6**. In summary, the table demonstrates that the proposal is generally consistent with relevant objectives, and substantially compliant with the ADG's numerical recommendations. The following summary demonstrates how the main numerical controls are addressed:

- Apartment depths range from 6.1m to 9.6m.
- Proposed setbacks reflect adjoining residential development and in particular, the elevations of the approved residential buildings facing Constitution Drive.
- A total of 493m² of communal open space is provided, which equates to 24% of the site area (ADG recommended minimum is 20%).
- At least 90% of the abovementioned communal open space receives a minimum of 2 hours sunlight between 9am and 3pm at June 21 (ADG recommended minimum is at least 50%). Specifically, most of the communal open space is provided on the roof.
- A total of 301m² is provided as deep soil zones as defined by the ADG, which equates to 15% of the development site area (ADG recommended minimum is 7%).
- 70% of living rooms and POS (or 31 dwellings) of all proposed dwellings receive at least 2 hours direct sunlight between 9am and 3pm at June 21 (ADG recommended minimum is 70%).
- 13% of proposed dwellings receive do not direct sunlight between 9am to 3pm at June 21 (ADG recommended maximum number of dwellings without any direct sunlight is 15%).
- 61% of all proposed dwellings (or 27 dwellings) are naturally cross ventilated (ADG recommended minimum is 60%).
- The proposal includes:
 - studio dwellings with a minimum area of 40m² (ADG recommended minimum is 35m²).
 - 1-bedroom dwellings with a minimum area of 50m² (ADG recommended minimum is 50m²).
 - 2-bedroom dwellings with a minimum area of 71m² (ADG recommended minimum is 70m²).
 - 3-bedroom dwellings with a minimum area of 99m² (ADG recommended minimum is 90m²).
- The proposal includes:
 - studio dwellings with a minimum balcony area of 8m² (ADG recommended minimum is 4m²).
 - 1-bedroom dwellings with a minimum area of 9m² (ADG recommended minimum is 8m²).

- 2-bedroom dwellings with a minimum area of 10m² (ADG recommended minimum is 10m²).
- 3-bedroom dwellings with a minimum area of 12m² (ADG recommended minimum is 12m²).
- The proposal includes:
 - studio dwellings with a minimum additional storage area of 7m³ (ADG recommended minimum is 4m³).
 - 1-bedroom dwellings with a minimum additional area of 7-11m³ (ADG recommended minimum is 6m³).
 - 2-bedroom dwellings with a minimum additional storage area of 8-12m³ (ADG recommended minimum is 8m³).
 - 3-bedroom dwellings with a minimum additional storage area of 10m³ (ADG recommended minimum is 10m³).
- A variety of dwellings types are provided catering for a variety of household sizes.
- The proposal's car parking provisions are consistent with the requirements prescribed by the Ryde Cove DCP.
- The proposal will achieve a minimum separation of 12m from the adjoining development to the east. Pursuant to the ADG, the 5th storey is required to achieve a separation of 18m. The ADG Assessment by Robertson + Marks provides an alternative solution as per the ADG. Specifically, the proposal avoids windows on its eastern elevation to ensure adequate privacy despite the non-compliance.
- The proposal includes one (1) circulation core, with a maximum of nine (9) dwellings off the core (ADG recommended maximum is 8 apartments) with a maximum distance of 33m from the lift core (ADG recommended maximum 12m). The ADG Assessment by Robertson + Marks provides an alternative solution as per the ADG. In summary, the proposal exceeds the recommendation by one dwelling only, and this isn't considered excessive. Further, the core is provided with a large east facing window to generate suitable internal amenity.

6.5 BASIX SEPP

The aim of this Policy is to establish a scheme to encourage sustainable residential development (the BASIX scheme). The BASIX SEPP, together Schedule 1 of the EP&A Regulations 2000, require the submission of a BASIX certificate for any BASIX affected building/s, which is defined in the EP&A Regulations 2000 as any building that contains one or more dwellings, but does not include a hotel or motel.

The proposal is regarded as a BASIX affected building given it includes 44 proposed dwellings. The DA includes BASIX certification number 12539, as provided in **Appendix 11** of this SEE. The certificate confirms that the proposal achieves the minimum efficiency targets. As such, the proposal satisfies BASIX requirements as prescribed by the BASIX SEPP and the EP&A Regulations 2000.

6.6 Infrastructure SEPP

Clause 45 - Determination of development applications - other development

In summary, this clause requires a consent authority to seek comments from the relevant electricity supply authority in relation to any DA which involves:

- the penetration of ground within 2m of an underground electricity power line or an electricity distribution pole or within 10m of any part of an electricity tower,
- development carried out:
 - within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists), or

- immediately adjacent to an electricity substation, or
- within 5m of an exposed overhead electricity power line,
- installation of a swimming pool any part of which is:
 - within 30m of a structure supporting an overhead electricity transmission line, measured horizontally from the top of the pool to the bottom of the structure at ground level, or
 - within 5m of an overhead electricity power line, measured vertically upwards from the top of the pool,
- development involving or requiring the placement of power lines underground, unless an agreement with respect to the placement underground of power lines is in force between the electricity supply authority and the council for the land concerned.

The proposal involves excavations within 2m of an underground electricity power line located generally along the subject development site's Constitution Road frontage and within 5m of an overhead electricity power line located on Bowden Street. In this case, RCC is required to seek the electricity supply authority's comments in relation to the proposal. It is not expected that any such comments would alter the proposal's fundamental nature.

Clause 102 and 104 - noise vibration and traffic generating development

- In accordance with Clause 102, the site is not located adjacent to a road with an annual average daily traffic volume or more than 40,000 vehicles. Consequently, the acoustic criteria of the SEPP does not apply to the proposed development.
- In accordance with Clause 104, the proposed development is comprised of 44 residential apartments. Consequently, the DA is not required to be referred to the RMS for comment.

6.7 Sydney Harbour Catchment SREP

Clause 2 - Aims of plan

In summary, the Sydney Harbour Catchment SREP aims to improve the health of the harbour, its foreshore, and its tributaries. Another key objective is to maximise accessibility to the harbour and its foreshore for the general public. For the purposes of the SREP, access is generally considered in terms of physical as well as visual access.

Clause 3 - Land to which plan applies

The Ryde LGA is within the Sydney Harbour Catchment. Therefore, the Sydney Harbour Catchment SREP applies to the proposal. The subject site is also included within the Foreshores and Waterways Area Map. The site is not, however, within a 'zone' prescribed by the SREP, not nominated within the 'Heritage Map, not a 'Wetlands Protection Area', nor within the 'Critical Habitat Map'.

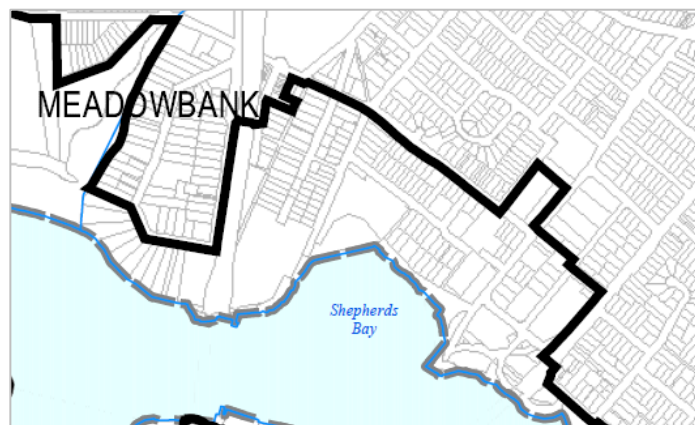


Figure 14: Extract of Sydney Harbour Catchment SREP map showing site within the foreshore boundary (Source: Sydney Harbour Catchment SREP)

Clause 14 to 15 - Planning Principles

The proposal is consistent with the planning principles set out in these clause, as follows:

- the proposal is for the construction of one new building that has been designed to ensure no adverse impacts on the water quality of the River, public access to the foreshore, or to the natural assets and unique environmental quality of the foreshore due to its setback from the River; and
- the proposal is it is of a high architectural quality which will contribute positively and enhance the appearance of the locality.
- Notwithstanding that views from the Parramatta River will likely be obscured by other buildings along Bowden Street, the proposal seeks to adopt the existing site gradient, by including a quarter length fifth floor. It is therefore provided that the proposal adopts suitable measures to maintain views to Rhodes Peninsula, the Railway Bridge and the like.

Clause 20 to 27 - Environmental Considerations

Clauses 20 to 27 of the Sydney Harbour Catchment SREP prescribe several matters which must be considered by a consent authority prior to determining a DA. The matters generally relate to preserving and improving the health of and access to the catchment's natural environmental features.

The proposal is a substantial distance from any nearest water body and its foreshore (i.e. approximately 238 metres). It will be designed in accordance with typical stormwater capture, filtration and release measures to ensure its stormwater generation does not unreasonably affect the health of the harbour or its foreshores. The development will not result in any impact to the equitable use of the waterway, ecology of the harbour or function of the working harbour. The subject site does not have direct access to the foreshore of the Parramatta River.

Notwithstanding that views from the Parramatta River will likely be obscured by other buildings along Bowden Street, the proposal seeks to adopt the existing site gradient by including a quarter length fifth floor. In doing so the development adopts suitable measures to maintain potential views to Rhodes Peninsula, the Railway Bridge and the like.

The schemes multi-storey nature would also increase the number of people who could visually access the harbour. Whilst the proposal is multi-storey in nature, it achieves consistency with the locality's predominant built form, and in this case, its visual appearance, as viewed from the harbour, is acceptable.

In light of the above, this SEE provides that the proposal is consistent with the Sydney Harbour Catchment SREP's environmental matters, as prescribed by Clause 20 to 27, which must be considered as part of a DA. Overall, this SEE provides that the proposal is generally consistent with the intent of the Sydney Harbour Catchment SREP.

6.8 Ryde LEP 2014

Clause 1.4 - Definitions

This clause, and the corresponding dictionary, defines "residential flat building" as "...a building containing 3 or more dwellings, but does not include an attached dwelling or multi dwelling housing".

A "dwelling" is subsequently defined as "...a room or a suite of rooms occupied or used or so constructed or adapted as to be capable of being occupied or used as a separate domicile".

The proposal includes rooms with area and facilities such as water, sewer and electricity, which render them usable as dwellings. This aspect of the proposal is therefore consistent with the definition of "dwellings". The proposal includes 44 dwellings, and is therefore consistent with the definition of a residential flat building.

Overall, this SEE therefore provides that the proposal is consistent with the definition of a "residential flat building".

Clause 2.2 - Zoning of land to which Plan applies

Pursuant to this clause and the corresponding land zoning maps, the subject site is located within the B4 Mixed Use zone.



Figure 15: Extract of zoning map with subject development site outlined in red (Source: Ryde LEP 2014)

The land use table to clause 2.2 provides the following objectives for the subject B4 - Mixed Use zone:

- To provide a mixture of compatible land uses.
- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.
- To create vibrant, active and safe communities and economically sound employment centres.
- To create safe and attractive environments for pedestrians.
- To recognise topography, landscape setting and unique location in design and land-use.

Clause 2.3(2) of the Ryde LEP provides that the consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.

The proposal is for a multi-storey development inclusive of 44 dwellings. The dwellings are proposed in studio, 1 bedroom, 2 bedroom and 3 bedroom format. The subject development site is also within proximity to a public park, public transport services and commercial development. In this regard the development seeks to provide for a land use that is compatible with the current and desired future land uses in the surrounding area.

The site is located in a highly accessible location that seeks to maximise the use of surrounding public transport including Meadowbank train station and ferry wharf. The proposed development will also encourage walking and cycling through the provision of a high quality public domain that is integrated with Stages 6 and 7 of the adjoining approved Concept Plan. Moreover, the development has specifically been designed to reduce the

number of vehicle cross overs, thereby assisting to create a safe and attractive pedestrian environment.

The site slopes upward from east to west and is located on the corner of Constitution Road and Bowden Street. The proposal seeks to adopt the existing site gradient by including a stepped built form and quarter length fifth floor. In doing so, the design also seeks to provide suitable measures to maintain potential views to Rhodes Peninsula, the Railway Bridge and the like. The design also seeks to utilise the site orientation to maximise the northerly aspect and solar access.

As will be demonstrated in the design verification statement, the ADG assessment, and the Ryde DCP compliance table, the proposal will achieve a high level of amenity for existing adjoining residential development. In particular, it has been demonstrated that the proposal provides for acceptable solar access to existing adjoining residential developments. In light of the above, this SEE provides that the proposal satisfies the relevant objectives of the B4 Mixed Use zone.

Pursuant to the Land Use Table of the RLEP Residential Flat Buildings are permitted with consent in the B4 zone. The application proposes Residential Flat Buildings and is therefore permissible with consent.

Clause 4.3 - Height of Buildings

The corresponding height of buildings map prescribes a maximum building height of 15.5 metres for the subject site, as demonstrated in the following map extract.



Figure 16: Extract of height of building map with subject development site outlined in red (Source: Ryde LEP 2014).

The proposal adopts a RL of 27.7 to the top of the main building envelope, and RL 29.1 to the top of the lift over run. This equates to a non-compliant proposed building height of 16m to the main envelope, and 18m to the top of the lift over run. However, as can be seen in the architectural plans as well as the height plane diagram on the following page, the vast majority of the proposal is, in fact, well below the maximum 15.5m building height. The non-compliance is largely a result of the site's substantial gradient.

A Clause 4.6 exception request accompanies this DA and is provided at **Appendix 3**. The 4.6 variation demonstrates robust justification for the height breach and that it causes no significant detrimental impacts on the streetscape or neighbouring properties in respect of solar access, privacy or loss of views. The 4.6 variation concludes that the variation to the standard provides a better planning outcome and that there are sufficient environmental planning grounds to justify the breach. As such, compliance with the building height standard is considered unreasonable and unnecessary in the circumstance.

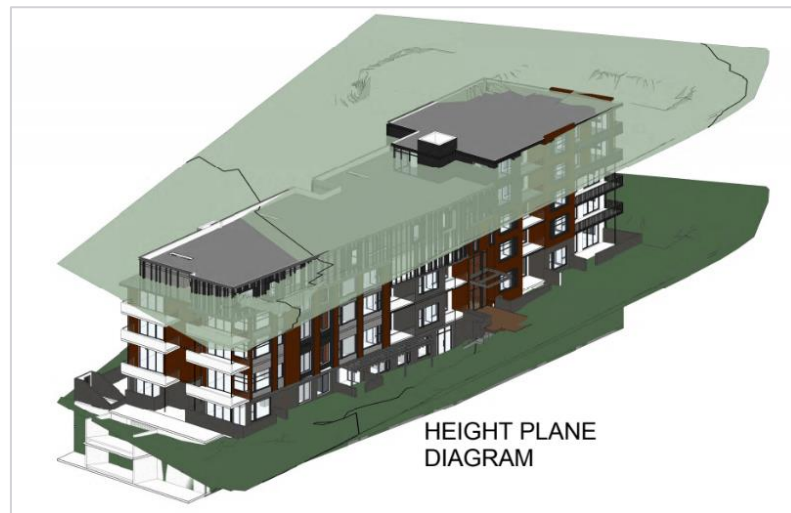


Figure 17: Height plan image with green plan demonstrating that most of the proposed envelope is below the 15.5m maximum height (Source: Robertson + Marks)

Clause 4.4 - Floor space ratio & Clause 4.5 - Calculation for floor space ratio and site area

The corresponding Floor Space Ratio (FSR) Map prescribes a maximum FSR of 2:1 for the subject site, as demonstrated in the following map extract.

The site area is 1,946m² and the DA includes a proposed GFA of 3,869m². Consequently, the DA includes a compliant FSR of 1.95:1.



Figure 18: Extract of FSR map with subject development site outlined in red (Source: Ryde LEP 2014).

Clause 5.10 - Heritage conservation

The site is located adjacent the local Heritage Item No. 80, being the Former Automatic Totalisators Ltd Factory. The item has been demolished in accordance with the approved Concept Plan and LDA2015/0032. Consequently, a heritage management document is not required.

Clause 6.1 - Acid sulfate soils

The corresponding Acid Sulfate Soils (ASS) Map identifies the site as containing Class 3, but mostly Class 5 ASS as demonstrated in the following map extract.

The objective of the clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.

The Geotechnical Assessment at **Appendix 16** prescribes various measures to ensure both the proposal, and adjoining allotments, would not be adversely affected by such affectation

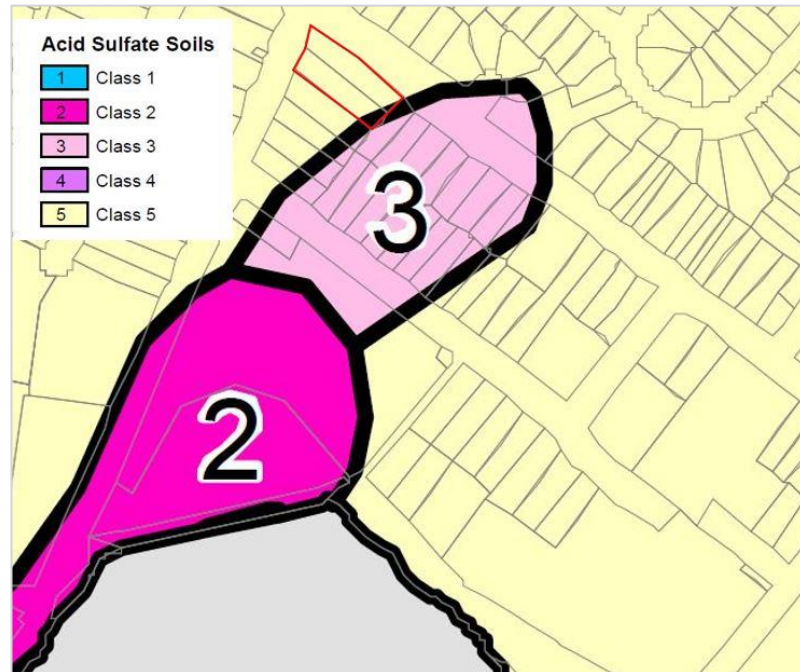


Figure 19: Extract of Acid Sulphate Soils map with subject site outlined in red (Source: Ryde LEP 2014).

Clause 6.2 - Earthworks

This clause states that development consent is required for most earthworks. The clause generally seeks to ensure earthworks are undertaken such that they would not damage adjoining properties, or sensitive natural environments.

The DA includes two (2) basement levels and therefore seeks consent for their excavation. The proposed development and extent of earthworks and excavation is unlikely to impact on any surrounding vegetation, results in minimal impacts on the amenity of neighbouring properties, will not impact on any natural features of water runoff patterns, and ensures the structural integrity of adjoining properties. A Geotechnical Assessment has been undertaken by Assetgeo (**Appendix 16**) which provides recommendations to be undertaken during the construction of the development.

Further to the above, it is expected that the nominated building contractor will undertake excavation works in accordance with relevant standards, technical requirements and the like. Therefore, it is expected that the proposal can satisfy the clauses objectives, and that consent can be issued for the proposal's related earthworks.

Clause 6.4 - Stormwater management

This clause applies to all land in residential zones. The DA includes a concept stormwater plan prepared by Australian Consulting Engineers which outlines that the development has been designed with suitable water permeable surfaces, on-site stormwater retention and avoids any significant adverse impacts of stormwater runoff on adjoining properties. Therefore, it is expected that the proposal can satisfy the clauses objectives, and that consent can be issued for the proposal's related stormwater management.

6.9 Ryde DCP 2014

Consideration of compliance and/or consistency with the relevant provisions of the Ryde Cove DCP 2014 is provided in the Table of Compliance prepared by CPSD at **Appendix 2** of this SEE. The Table of Compliance demonstrates that the proposal is substantially compliant with the prescriptive controls of the DCP, but more importantly, consistent with all relevant objectives and/or performance based controls.

The most influential prescriptive controls which the proposal has been found to be non-compliant with, are listed below. An explanation as to why each non-compliance is acceptable, is also provided.

Control 4.2.1 - Ground floor minimum floor to ceiling heights

This control prescribes a minimum ground floor floor to ceiling height of 4m, whereas the proposal is for 3.3m at the lower ground floor and 3.7m at the ground floor. 4m is considered excessive and an inefficient use of building volume. 3.3m and 3.7m is considered adequate with respect to solar access, ventilation and internal amenity generally. Further, the proposal floor to ceiling heights does not adversely affects the proposal's streetscape presentation.

It is also understood that consent has been issued for lower floor to ceiling heights elsewhere in the vicinity. The proposal would, therefore, be consistent with other consents. As such, the non-compliance is considered acceptable and without any unreasonable environmental impacts.

Control 4.2.2(e) - Setbacks for buildings of four storeys and above

In summary, this control prescribes a minimum 4m setback for 4th storeys or above. The proposal's setback 4 storeys and above is variable, but in parts is less than 4m.

The subject site is a corner allotment, and therefore warrants articulation addressing the corner. In this particular case, it is achieved by bringing part of the 4th and 5th storeys within the prescribed 4m setback zone.

In addition, the 5th floor is half a floor, and therefore does not generate any significant volume. In part, this achieves the recessive building envelope outcomes sought by the control.

It should also be noted that the site is constrained by a significant gradient, which affects yield. This is offset, albeit only marginally, by the partly non-compliant setback.

In light of the above, the non-compliance does not generate any unreasonable environmental impacts and is considered acceptable.

6.10 Identification & Assessment of Environmental Impacts

6.10.1 Context and Setting

The context and setting of the development site is described in **Section 2.3** of this Statement.

The SEPP 65 Design Statement (**Appendix 6**) prepared by Robertson + Marks Architects also describes the surrounding context and how the development has responded.

In summary, the surrounding area is currently undergoing rapid regeneration with many older light industrial buildings being replaced with high quality residential and as mixed use developments. The development has been carefully designed to be compatible with the emerging character of development. The proposed siting, scale, bulk, height, materials and finishes represent an appropriately designed development that effectively integrates with surrounding development. The proposal is also consistent with the objectives of the relevant planning provisions and the design parameters provided by the Ryde DCP.

6.10.2 Architectural Treatment

As discussed in the Design Report prepared by Richardson + Marks provided at **Appendix 6**, the evolution of the design of the building has taken into consideration the concepts of good urban design and the comments provided by Council's Planning Officers and UDRP. In this regard, the proposal achieves adequate separation between the buildings, the opportunity to manage and define the level of privacy from each unit, direct relationship to the street, an aesthetically pleasing design and a suitable scale of development located within a comfortable landscape setting.

In addition, the proposal provides a contemporary built form that is considered to be appropriate in the local context in terms of bulk, density and scale. The adequacy of the design of the development is further demonstrated by the following elements:

- The development cohesively integrates with the neighbouring Stage 7 development ground floor plane, pedestrian paths, basement and vehicular access;
- The built form incorporates a mixture of vertical and horizontal elements that articulate the building length, accentuate the two different heights of the building and reinforce building entries;
- The proposed building footprint contains obvious indentations, steps and the like, which translate throughout the envelope to ensure large continuous bulk and massing is avoided;
- The steps and indentations in the building envelope are accentuated by articulation such as decorative elements, balconies and complementary landscape design;
- The height and density of the building is generally consistent with the outcomes contemplated in the Ryde DCP 2014;
- The size and arrangement of the floor plates ensure that the internal amenity of apartments is maximised for natural light and cross ventilation;
- Apartments are provided with appropriately sized and located areas of private open space;
- Access between the private and communal areas within the complex is direct, safe and efficient;
- The landscape setting provides a usable and inviting space that connects with the public domain;
- Ground floor terraces create a pleasant landscape and private courtyard setting;
- A communal terrace has been provided on the roof, which is a suitable result given the zoning and density of the area.

- The building siting and privacy considerations ensure suitable building separation, placement of habitable rooms and windows, and private open space

6.10.3 Streetscape Presentation and Public Domain

As shown in the Landscape Plan and Architectural plans provided at **Appendix 10 and 5** respectively, the proposal provides for high quality public and private spaces that are clearly defined and fit for their intended purpose. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well-lit and visible areas that integrate with the Stage 6 and 7. The design also provides for the delineation of the public and private spaces, creating a shared experience that welcomes the public whilst also respecting the privacy of future residents.

The adequacy of the design is further demonstrated by the following elements:

- Pedestrian access is proposed from Bowden Street and Constitution Road, which optimises usability, activation, opportunities for social interaction and equitable access;
- Pedestrian comfort and safety is promoted through the innovative use of a shared vehicular access between Stages 6&7 and 7A;
- The public domain is defined by active facades that are built to the street edge behind the 6-metre setback from Constitution Road and 4 metre setback from Bowden Street;
- The ground floor plane is suitably activated, having regard to the constraints imposed due to the fall of the site;
- Individual ground floor unit entries and building entries reinforce the streetscape and create a pleasant landscape and private courtyard setting.
- Passive surveillance of public and communal areas is maximised through design elements that promote a visual relationship with public pedestrian areas.
- The architectural treatment and landscaping elements will achieve a suitable streetscape presentation
- The development provides for neighbours' amenity through practical establishment and long-term management arrangements.
- Retaining walls are minimized and well-integrated within the landscape setting.
- Service areas and plant rooms are integrated into the building design and do not visually dominate the streetscape or pedestrian areas adjoining the site.
- The landscape plans nominate an appropriate treatment for the public domain areas adjoining the site.

Overall, the proposal significantly improves the quality of the streetscape through the coordinated creation of an improved public domain that provides a high level of amenity for residents and visitors.

6.10.4 Solar Access

The proposed development has been carefully designed to achieve a high level of amenity with due consideration to the ability of each apartment to benefit from receiving solar access, adequate privacy and separation, natural ventilation along with providing floor plan layouts which are efficient and have a high level of liveability. This focus on achieving a high level of amenity is also balanced with the requirements to satisfy the ADG and thermal comfort requirements and providing an interesting architectural form which supports the transitioning character of the area.

As discussed in the ADG Assessment prepared by Richardson + Marks Architects provided at **Appendix 6**, the solar access analysis confirms that:

- The proposed development provides a minimum of 2 hours solar access between 9am and 3pm midwinter to 70% of living rooms and private balconies to the units (i.e. 31/44 of units) which satisfies the requirements of the ADG,

- 13% of apartments receive no direct sunlight at mid-winter, which satisfies the requirements of the ADG.

The proposal includes a communal open space on the roof of the development, which will receive high levels of solar access throughout the day. This is considered a desirable outcome that will assist in providing increased amenity to the occupants of the building.

6.10.5 Overshadowing

The application is accompanied by overshadowing diagrams prepared by Robertson + Marks and are provided at **Appendix 5**. The shadow diagrams demonstrate that impacts are consistent with east west oriented lots.

6.10.6 Internal Amenity

The proposed development has been produced with particular attention to the amenity of its future occupants, neighbouring properties and the public domain. As discussed in the SEPP 65 Design Verification Statement prepared by Richardson + Marks provided at **Appendix 6**, the development is responsive to the opportunities and constraints of the site and its surrounds with regard to topography, vegetation, neighbouring buildings, noise and physical impacts of street traffic, solar access and views. This has culminated in generating a unique design which creates a sense of space, connectivity to public and private space, suitable solar access and privacy to their units. This is achieved by the following design initiatives:

- provision of suitably located windows and openings to adjacent properties to ensure amenity is maintained to existing developments, and does not restrict the future redevelopment of adjoining properties;
- providing suitable separation not only between buildings, but also separation to living areas and bedrooms;
- a floor plan layout which is highly efficient and fosters high quality living and use of spaces;
- a generous residential lobby and open floor plans;
- terraces or balconies to all units which provide an attractive outlook to the surrounding areas and feature landscaping where appropriate;
- easily accessible garbage storage and sorting facilities;
- accessible vehicular entry points and a legible parking and circulation network;
- safety by design initiatives to enhance the sense of safety and security.
- 61% of apartments benefit from cross ventilation; and
- All units located above the ground floor have access to a balcony that achieves a minimum width of 2m.
- Living spaces are orientated towards the primary outlook and to capture views where possible.
- Screening will be provided where necessary to maximise privacy.
- All units include storage located within the apartment and within the basement that exceed the minimum requirements of the ADG; and
- Generally, all apartments living, dining, bedrooms and kitchens are within 8m from the glazing line to allow for daylight access and natural ventilation.

It is noted that four apartments per level are located on a corridor greater than 12m from the lift core, which is over the maximum distance required under the ADG. In addition, the proposal includes one (1) circulation core with a maximum of nine (9) dwellings off the core, which exceeds the ADG recommended maximum of 8 apartments.

In each case, the non-compliance is minor and does not warrant the expense associated with an addition lift. Despite the non-compliance, adequate amenity will be provided within the corridors as a large window is proposed in the eastern elevation to service the corridor. Various other south facing windows are also proposed, together with a wider corridor and seating throughout the length of the corridor.

The design of the development results in a positive outcome with regard to residential amenity. Careful consideration has been undertaken to mitigate potential aspects of the design that could degrade the quality and liveability of the units both individually and for the development as a whole. We consider the amenity of the development to be of high quality and a desirable outcome.

6.10.7 Privacy

The proposed development has been designed to maintain privacy between residents within the building itself, as well as maintaining the amenity to existing residential buildings adjacent to the site. In this respect, the built form is substantially compliant with Council's desired setbacks for the zone, and windows and openings have been strategically located to ensure there is no adverse privacy impacts to the existing or future developments of adjoining sites.

Whilst the side setbacks are within the minimum shared separation requirements under the ADG, the proposed building has located windows and openings so that there are no privacy impacts between the development and adjoining sites.

Pursuant to the ADG, the fifth storey is required to achieve a separation of 18m from adjoining properties, whereas the proposal's eastern elevation achieves a separation of 12.2m from Stage 7. The ADG Assessment by Robertson + Marks provides an alternative solution as per the ADG, which demonstrates suitable privacy and amenity will be maintained to adjoining development without compromising access to light and ventilation. In summary, this is achieved through compliant separation on the lower levels, and effective screening on Level 03 (i.e. the non-compliant floor).

Similarly, screening has been adopted elsewhere throughout the proposed envelope to minimise privacy impacts between the proposed dwellings.

The proposed roof top communal open space has been setback approximately 12m from the eastern boundary, with a total separation of 22m from Stage 7 to the east, thereby maintaining the privacy of adjoining development.

Medium height fencing along the common boundaries to the north and east is also proposed to ensure that amenity is achieved. Similarly, the private open space areas of the ground floor terraces have included additional fencing and landscaping to ensure suitable privacy for these units.

Given the above, it is considered that the proposed development has been designed to appropriately mitigate privacy impacts to and from the development.

6.10.8 Landscaping

The subject proposal includes a generous amount of landscaping within the site and on the building. In this respect, the proposal provides 301m² (or 15% of the site area) for deep soil planting, as defined by the ADG. This far exceeds the minimum recommended requirements under the ADG (i.e. 7% of the site area). The total deep soil area, inclusive of area less than the ADG prescribed minimum width of 6m, is, in fact, 470m² (i.e. 24% of the site area).

In addition, the proposal includes additional landscaping around the building envelope, which equates to a total combined area of landscaping on the site of 596m². This represents 30% of the site area. The landscaping proposed will also assist in reducing the perceived bulk of the building by softening the edges and contributing to the streetscape.

In addition to the ground level landscaping, the proposal also includes a communal roof top terrace which has an area of 439m² (i.e. 22% of the site area). Further, the ground floor units all have access to large open terrace courtyards, which provides additional space to these

units. The balconies for upper level apartments generally have a minimum depth of 2 metres whilst the majority of apartments have balcony depths between XX metres and 3 metres.

6.10.9 Water Management

Existing drainage conditions, proposed design and relevant impacts associated with development are contained in the Stormwater Concept Plans prepared by Australian Consulting Engineers provided at **Appendix 9**. The proposed stormwater management of the site includes the following:

- Stormwater from the development will be directed to detention tanks.
- A drainage easement will be registered on title of the neighbouring property at Stage 6 and 7 of Shepherds Bay. It is expected that a condition of consent will be imposed requiring the creation of the drainage easement with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.

6.10.10 Roads and Traffic

The Traffic and Parking Assessment Report prepared by Thompson Stanbury Associates and provided at **Appendix 8** has considered the existing and proposed traffic conditions as a result of the proposal. The report outlines that the proposed development will result in an approximate traffic generation of up to 9 vehicles per hour to the site during peak periods. However, when comparing to the existing traffic generation to the site the traffic report concludes that the proposed traffic generation is negligible.

Holdmark Property Group Pty Ltd are the proponents for Stages 6,7 and '7A' (the subject site). This effectively ensures a high level of integration and consistency in the design, delivery and ongoing management of all the stages. In recognition of this, the proposal includes a shared vehicular access via a basement link between Stages 6&7 and 7A. Consequently, a right of way will be registered on title of the neighbouring property (i.e. Stage 6 and 7). It is expected that a condition of consent will be imposed requiring the creation of rights of way with the relevant instrument/s to be executed prior to the issue of the occupation certificate for any building on the site.

6.10.11 Car parking

The Traffic and Parking Assessment Report prepared by Thompson Stanbury Associates and provided at **Appendix 8** has concluded that the proposed number of parking spaces are compliant with Council's DCP parking rates

Car parking is proposed within a secure basement that has two (2) levels that are accessed via basements links with Stage 7. When applying Council's DCP parking rates, the proposed development requires between 47 and 60 spaces. The proposed development provides a total of 60 spaces, and therefore complies with the DCP.

The proposal also provides 10 bicycle spaces in the form of spaces/racks. This complies with the DCP requirement of 1 bicycle space per 10 car spaces.

6.10.12 Pedestrians and Accessibility

Accompanying the application is a BCA Report and an Access Review report prepared by Design Confidence and Vic Lilli & Partners Consulting at **Appendices 12 and 13** respectively. The reports contain various detailed design recommendations to ensure the building meets applicable access codes and legislation. Those recommendations are of a minor nature, and it would be reasonable for those outcomes to be ensured by means of suitable conditions within any Notice of Determination requiring compliance to be demonstrated with any Construction Certificate.

6.10.13 Impacts During Construction

This report provides a BCA compliance review (**Appendix 12**) of the proposal prepared by Vic Lilli & Partners Consulting. This sets out a number of recommendations to ensure that the proposed building is capable of achieving compliance with the requirements of the BCA and relevant adopted standards without undue modification to the design or appearance of the building.

A Construction Management Plan (CMP) will be prepared by the appointed contractor, once the terms of any approval granted by Council are known. Accordingly, it is anticipated that Council will include appropriate conditions within any consent notice requiring the preparation and approval of a CMP prior to works commencing. Further, the acoustic assessment at **Appendix 15** provides recommendations to minimise noise impacts during the construction phase. These may be adopted as a condition of any consent.

6.10.14 Waste Management (Constructions & Operational)

A Waste Management Plan prepared by Elephants Foot accompanies this application (**Appendix 14**) and addresses Council's objectives for Waste Minimisation and Management.

Construction Waste

This Plan sets out the waste management measures that will be adopted as part of the construction phase and to ensure that resources are conserved and waste is processed responsibly by minimising waste generation and maximising recycling of materials.

Operational waste

An integrated and accessible garbage collection and management system is provided for the ongoing operation of the proposal. A centralised waste chute is provided for the building, which directs waste from each level to a waste collection room within the basement. On garbage collection day, a building manager will transport waste bins from the basement to the temporary waste storage area in the basement level of the Stage 7 development, and are ultimately transferred to the garbage truck loading zone in Stage 6 for collection by Council's waste trucks. Once waste has been collected, the waste bins will be returned to the basement storage area of the proposal's basement. There is also an area dedicated to bulky items located within the waste storage room, which is to be used by the residents for the temporary storage of bulky waste items.

Servicing

Council's DCP requires that a servicing bay be provided capable of accommodating a Medium Rigid Vehicle (MRV) for RFBs with more than 30 dwellings. It is considered that this would be onerous to accommodate this within the basement of the building as it will have consequential impacts to the configuration of the car parking layout and current provision of parking spaces, which will ultimately require additional excavation and reduced deep soil available. As such, it is proposed to provide an area within the basement of Stage 7. Further, due to the site's gradient, it is not feasible to have Council waste truck access the site from either Bowden Street or Constitution Road. Given the frequency of vehicles using this 'service' area, this will not result in any adverse impacts to the surrounding area. Overall, Elephant's Foot consider that this arrangement is acceptable and appropriate given the nature and scale of the proposed development.

6.10.15 Noise & Vibration

The application is accompanied by a Noise Impact Assessment report by DK Acoustics at **Appendix 15**

Construction noise & vibration

The proposed works have been assessed against criteria for resultant noise from construction which are aimed at maintaining comfort levels within the surrounding residential dwellings. The construction site will adhere to the noise control and regulation measures in

accordance with AS 2436:2010 “Guide to noise control on construction, maintenance and demolition sites.” Furthermore, the works will adhere to the EPA Construction Noise Guidelines which require the proponent to take into consideration and employ all reasonable and feasible measures to ensure that the impact on noise receivers is minimised.

The works will not exceed the relevant vibration criteria to ensure that no architectural or structural damage to surrounding buildings occurs. Refer to the Noise Assessment at **Appendix 15** for further details.

Internal noise levels to residential areas

The application is accompanied by a Noise Assessment prepared by DK Acoustics which is provided at **Appendix 15**. The report includes a schedule of requirements for glazing and acoustic seals to ensure that internal areas of the residential apartments achieve the necessary mitigation from road traffic noise.

Operational noise

Potential noise sources from the development include noise generated by mechanical plant and commercial uses. The external mechanical plant will be selected post DA stage, at which point a fully detailed assessment of treatments will be conducted. This future assessment will determine if acoustic treatments to the mechanical plant are required.

The building layout and orientation of the building has been designed to ensure that the acoustic privacy of surrounding residents and future occupants is protected. This has been achieved through the careful consideration of the layout of the development including the significant setback of the building from the eastern boundary and the further gradual setback of the upper residential levels, the internal arrangement of the loading bay and commercial spaces which are directed away from neighbouring residences.

Moreover, the noise levels within the development will satisfy the requirements of the Ryde Council DCP and the relevant Australia Standards as detailed in the Noise Assessment report.

6.10.16 Natural Resource Usage

This SEE provides that the proposal's impacts to the natural environment are reasonable. In particular, the subject development site or its immediate surrounds do not contain any sensitive natural features. Further, the proposal will adopt typical measures to minimise environmental impacts such as BASIX inclusions, passive design, erosion and sediment control measures, as well as substantial compensatory landscaping including generous deep soil to allow for ground water recharge.

6.10.17 Geotechnical

A Geotechnical Desktop Study has been prepared by Assetgeo and is provided at **Appendix 16**. The report provides various recommendations to ensure appropriate measures are implemented during the excavation and construction phases of the development, including a more detailed geotechnical investigation prior to the construction of the development/The Geotechnical Investigation demonstrates that the conditions of the site are appropriate for the excavation and construction works proposed.

6.10.18 Contamination

Refer to Section 6.3 for the SEPP 55 assessment with regard to potential soil contamination.

6.10.19 Flooding

The site is not within a Flood prone area. Notwithstanding this existing flood conditions in relation to the basements of Stage 7 have been addressed by Australian Consulting Engineers at **Appendix 9**.

6.10.20 Hazards (Other)

The subject is also marginally affected by acid sulphate soils and salinity. The Geotechnical Investigation prepared by Assetgeo (**Appendix 16**) demonstrates that the conditions of the site are appropriate for the excavation and construction works proposed, and provides recommendations to be carried out to ensure there are no adverse impacts to surrounding properties as a result of these affectations. This aside, there are no further hazards on or surrounding the site.

6.10.21 Services and Utilities

The site contains adequate facilities which will be retained / reused / upgraded where needed to cater for the proposed residential development. All installations will be capable of meeting the requirements under the Australian Standards and the Building Code of Australia.

6.10.22 Social Impacts

Social impacts arising from the proposal are primarily positive. Specifically, contributes to the urban renewal of Shephard's Bay in accordance with development zoning and Council's vision for the area. The development also seeks to provide more housing opportunities and diverse housing options.

The schemes orientation and detailed design reinforces the locality's higher density built form character. It will also provide valuable casual surveillance over the public domain within Constitution Road and Bowden Street. Overall, the proposal provides a valuable residential development that positively contributes to the revitalisation efforts throughout the broader precinct.

6.10.23 Economic Impacts

Economic impacts resulting from the proposal, as they relate to the EP&A Act, will be largely positive. That is, the proposal will provide ongoing construction related employment opportunities. Any potential loss of industrial employment on site is considered to be consistent with the site zoning and the vision for Shepherd's Bay, being the creation of a higher density transit-orientated residential neighbourhood.

The proposal will introduce an increased residential population which will contribute to the economic success of surrounding retail and business activities.

6.11 Suitability of the site for the development

This SEE provides that the subject development site is suitable for the proposed development given that:

- The proposal is permissible in the B4 Mixed Use Zone pursuant to the RLEP 2014.
- The objectives of the subject B4 Mixed Use Zone would be satisfied by the proposal.
- Compliance is achieved with most of the development standards prescribed by the RLEP 2014. A limited section of the proposal's overall height marginally exceeds the maximum building height development, but this occurs as a result of the sloping nature of the site, which slopes from north to east along Constitution Road. The request demonstrates that compliance with the standard would be unreasonable and unnecessary, and a better planning outcome would be achieved by exercising the flexibility afforded by Clause 4.6 in the particular circumstances of this application.
- The proposal is substantially consistent with the design recommendations prescribed by the ADG. Importantly, the proposal has been found to be consistent with the ADG's objectives as well as the design principles of SEPP 65.
- The proposal's likely environmental impacts have been found to be acceptable, or can be adequately mitigated.
- The subject development does not pose any prohibitive constraints.

- It will be found (refer below) that the proposal will be in the public interest.

6.12 Public Interest

Determining whether a proposal is in the public interest should rely on any feedback during any public consultation phase. The proposal has not yet been notified and therefore public feedback cannot be considered at this stage. Nevertheless, this SEE provides that the proposal will be in the public interest for the following reasons:

- The proposal is consistent with the RLEP 2014. In particular, it represents permissible development, is consistent with the relevant zone objectives, and substantially compliant with relevant development standards. The proposal's minor height breach is accounted for by the LEP's objectives relating to exceptions to development standards, as well as the site's significant gradient.
- The proposal is consistent with other key environmental planning instruments, including SEPP 65 and the related ADG.
- The proposal's likely environmental impacts have been found to be acceptable, or can be adequately mitigated.
- The subject development site has been found to be suitable for the proposal.
- The proposed development will provide a positive contribution to the streetscape of Constitution Road and Bowden Street. The development has been carefully designed to be compatible with the emerging pattern and character of development in the area. The development also maximises internal amenity for future occupants of the building.

7. Conclusion

The SEE provides an assessment of the proposal against the relevant environmental planning framework. The framework in this case includes State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development, the Apartment Design Guide, the Ryde Local Environmental Plan 2014, as well as the Ryde Development Control Plan 2014.

The proposal was found to be permissible development, according to the Ryde LEP 2014, and substantially compliant with its development standards. Although, the DA seeks a minor variation to this instrument's maximum building height development standard. The breach of the standard is a result of the proposal's lift overrun and stepped response to the site's topography, which is allowed for pursuant to Clause 4.6 of the Ryde LEP 2014. This SEE finds that the minor breach in height provides a better planning outcome than that would be achieved by exercising the flexibility afforded by Clause 4.6 in the particular circumstances of this application. The proposal was also found to be substantially compliant with the prescriptive controls of the Ryde DCP 2014, and more importantly, its objectives are satisfied.

The assessment also finds that the proposal is generally consistent with the outcomes sought by the relevant framework. In particular, the proposal is consistent with the design principles prescribed by SEPP 65, and is substantially compliant with the design recommendations of the ADG, specifically those for solar access and ventilation, as advised by Robertson + Marks.

The proposal reinforces the precinct's higher density character, and particularly the related built form character. It will provide additional housing opportunities in a transitioning area an area undergoing successful urban regeneration. The development provides a built form that is consistent with the future anticipated character of the area. This includes maintaining an appropriate scale to the street frontages without adverse overshadowing or amenity impact on surrounding properties beyond that anticipated by the current controls for the site. The development also provides high quality residential units that provide a high level of amenity and privacy to the future occupants.

In light of the above, this SEE recommends that the proposal warrants development consent from Council.

Holdmark Pty Ltd
2/2-4 Giffnock Avenue
MACQUARIE PARK NSW 2113

18 December 2018

Dear Sir/madam

Address 102 – 104 Bowden Street, Meadowbank
Deferred Commencement Consent No. LDA2018/0048

Please find attached your Deferred Commencement Consent, detailing the condition(s) required to be satisfied prior to your consent becoming operative.

This Deferred Commencement Consent is not an approval to commence building work.

It is the responsibility of the applicant to carefully read the conditions of Deferred Commencement Consent and submit the required information.

The information required in Part 1 shall be submitted to Council within twelve (12) months from the date of this notice or the Consent will have lapsed, in accordance with the requirements of Section 4.53(6) of the Environmental Planning & Assessment Act.

Once this information is considered acceptable to Council and you have been notified in writing, the Development Consent will become operative. You will be required to then obtain a Construction Certificate that will enable you to commence the physical work on site.

Should you have any further questions please contact the Customer Service Centre on 9952 8222.

Yours sincerely



Sandra McCarry
Assessment Officer



Applicant: Holdmark Pty Ltd
2/2-4 Giffnock Avenue
MACQUARIE PARK NSW 2113

Deferred Commencement Development Consent

Consent No: LDA2018/0048

Consent Date: This Consent does not become operative until the matters referred to in Part 1 have been submitted to Council and Council has notified you in writing that the Consent has become operative.

The information required in Part 1 shall be submitted to Council within twelve (12) months from the date of this notice or the Consent will have lapsed, in accordance with the requirements of Section 4.53(6) of the Environmental Planning & Assessment Act.

Valid Until: 5 years from the date that Council notifies in writing that the Consent has become operative.

The City of Ryde, as the consent authority under the provisions of the Environmental Planning and Assessment Act, 1979 hereby consents to the development as follows:

Property: 102 – 104 Bowden St Meadowbank Lot 1 DP 730371, SP 20107

Development: Approval is sought for the construction of a 5 storey residential flat building comprising 43 dwellings over 2 basement levels of car parking providing a total of 59 car spaces together with associated landscaping works, common open space areas and publicly accessible pedestrian paths. Vehicular access to the development is proposed via basement links between the proposed development and adjoining Shepherds Bay Stage 7 development located at 37-53 Nancarrow Avenue, Meadowbank .

subject to the conditions 1 to 147 specified in this consent.

You are advised that failure to observe any condition of approval set out in the consent is an offence and legal proceedings may be instituted by Council.

This Consent does not guarantee compliance with the Disability Discrimination Act and you should, therefore, investigate your liability under the Act.

You are advised of your rights of appeal to the Land and Environment Court under S8.7 of the Act, against any of the conditions contained within this consent, within a period of six (6) months after receipt of the Consent.

Conditions of Consent for LDA2018/0048 :-


Assessment Officer

Date: 13 December 2018

The fees quoted at the time of issue of this Consent may be subject to variation. Council's annual fees and charges are published in the Management Plan. To confirm fees please contact Customer Service on 9952-8222.

Conditions of Consent for LDA2018/0048 :-

PART 1 - The following are the Deferred Commencement condition(s) imposed pursuant to Section 4.16 of the Environmental Planning & Assessment Act 1979.

(A) Pursuant to Section 4.16(3) of the Environmental Planning and Assessment Act 1979, the applicant must satisfy the following deferred commencement conditions of consent prior to this development consent becoming operative.

1. **Drainage Easement(s) and Right-of-Way.** An "*Easement for drainage of water*" must be registered over the neighbouring downstream property (37 to 53 Nancarrow Avenue – Lot 7 DP1239998). The easement is to be located generally as shown on the concept plan by Australian Consulting Engineers (Refer to Project No. ACE151141.SW.DA Dwgs SW000 - SW106 Rev A dated 8 December 2017) subject to amendment noted below, must have a defined width and must comply with the DCP Part 8.2 (*Stormwater and Floodplain Management*) & Part 8.4 (*Title Encumbrances*). Note that due to the diameter of the drainage service, this will require a minimum easement width of 1.5m. The easement must also be located to be border footings of significant structures (such as any retaining walls) such that ready access to the drainage service can be achieved (ie either adjoining the foot of a retaining wall or wholly located atop of it).

Further to the above, the pedestrian access to the public Right-of-Way on the neighbouring lot is the lowest point of the subject site and potentially will accommodate stormwater runoff arising from extreme storm events / blockage of the drainage system. Accordingly an "*Easement for drainage of water*" must also be registered over the Public Right of Way, downstream of the access, located on the western side of 37 to 53 Nancarrow Avenue. This is to ensure a failure mode for the drainage system of the subject development is provided for.

To accommodate pedestrian access from the subject development to the public Right-of-Way, a private Right-of-Way must be registered over the neighbouring property of 37 to 53 Nancarrow Avenue, extending between access point to the future public Right-Of-Way.

Council must review and approve the terms of all easements prior to registration should they differ from those terms defined in Schedule 8 of the Conveyancing Act – 1919. Council must also be listed as the body having authority to alter, reconfigure or extinguish these easements.

2. **Rights of Ways for Vehicular Access, Bin Collections and Loading Bay.** Documentary evidence of registration of the Right of Ways for the Vehicular Access, Bin Collection Path and Loading Bay on Stages 6 & 7 Buildings at 37-53 Nancarrow Ave - Lot 7 DP1239998, are to be submitted to Council as

(B) Documentary evidence of registration of the drainage easement and Right of Ways as identified in deferred commencement conditions (A) 1 & 2 above, with the Land & Property Information Authority, including the terms of the drainage easement, ROWs and their location on the burdened lot(s), must be submitted to Council to demonstrate the requirements of this condition have been satisfied, within 12 months from the date of this development consent, failing which, this development consent will lapse pursuant to Section 4.53 of the Environmental Planning and Assessment Act 1979.

Conditions of Consent for LDA2018/0048 :-

- (C) This Development Consent will not operate until such time that the Council notifies the Applicant in writing that that deferred commencement consent conditions (A) 1 & 2 above have been satisfied; and
- (D) Upon Council giving written notification to the Applicant that deferred commencement consent conditions (A) 1 & 2 above have been satisfied, the development consent will become operative from the date of that written notification, subject to the following conditions of consent:

PART 2 - The conditions in the following sections of this consent shall apply upon satisfactory compliance with the above requirements and receipt of appropriate written confirmation from Council.

- 1. Approved Plans/Documents.** Except where otherwise provided in this consent, the development is to be carried out strictly in accordance with the following plans (stamped approved by Council) and support documents:

Document Description	Date	Plan No/Reference
Cover Page	03/10/2018	DAA000/5
Site Plan	01/11/2018	DA A003/4
Demolition Plan	19/12/2017	DAA005/2
Basement 02	04/05/2018	DA A101/2 Issue 2
Basement 01	04/05/2018	DA A102/2 Issue 2
Lower Ground Floor	02/11/2018	DA A103/8 Issue 8
Ground Floor	23/10/2018	DA A104/7 Issue 7
Level 1	03/10/2018	DA A105/3 Issue 3
Level 2	03/10/2018	DA A106/3 Issue 3
Level 3	03/10/2018	DA A107/4 Issue 4
Level 4	03/10/2018	DA A108/3 Issue 3
Roof Plan	04/05/2018	DA A109/2 Issue 2
Elevations	04/05/2018	DA A151/3 Issue 3
Elevations	04/10/2018	DA A152/5 Issue 5
Sections	04/05/2018	DA A161/3 Issue 3
Sections	04/05/2018	DA A161/2 Issue 2
Cross Sections	23/10/2018	DAA895/4
Materials and Finishes	04/05/2018	DA A175/2 Issue 2
Pre & Post Adaptable	04/05/2018	DA A840/2 Issue 2
Waste Management Bin Path	04/05/2018	DA A881/2
Basement 1 & 2 Carpark Connection	04/05/2018	DA A885/2 & DA A886/2
Landscaping Plans SS17-3628		000 Issue C
Landscape Site Link		101.1 Issue A
Landscaping Lower Ground Floor		101 Issue H
Landscape Plan Ground Floor		102 Issue E
Landscape Plan Level 4		103 Issue F
Landscape Details		501 Issue C

- 2. Building Code of Australia.** All building works approved by this consent must be carried out in accordance with the requirements of the Building Code of Australia.

Conditions of Consent for LDA2018/0048 :-

3. **BASIX.** Compliance with all commitments listed in BASIX Certificate(s) numbered 8872783M, dated 18 December 2017.
4. **Support for neighbouring buildings.** If the development involves excavation that extends below the base of the footings of a building on adjoining land, the person having the benefit of the development consent must, at the person's own expense:
 - Protect and support the adjoining premises from possible damage from the excavation, and
 - Where necessary, underpin the adjoining premises to prevent any such damage, in accordance with relevant Australian Standards.
5. **Hours of work.** Building activities (including demolition) may only be carried out between 7.00am and 7.00pm Monday to Friday (other than public holidays) and between 8.00am and 4.00pm on Saturday. No building activities are to be carried out at any time on a Sunday or a public holiday.
6. **Hoardings.**
 - (a) A hoarding or fence must be erected between the work site and any adjoining public place.
 - (b) Any hoarding, fence or awning erected pursuant this consent is to be removed when the work has been completed.
7. **Illumination of public place.** Any public place affected by works must be kept lit between sunset and sunrise if it is likely to be hazardous to persons in the public place.
8. **Development to be within site boundaries.** The development must be constructed wholly within the boundaries of the premises. No portion of the proposed structure shall encroach onto the adjoining properties. Gates must be installed so they do not open onto any footpath.
9. **Balconies:**
 - (a) **Clothes drying.** No clothes drying on balconies in the public view are permitted. Any future Strata Management Plan is to include the requirement that clothes drying on balconies visible from any public domain is not permitted.
10. **Public space.** The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances, without prior approval from Council.
11. **Public Utilities.** Compliance with the requirements (including financial costs) of any relevant utility provider (e.g. Energy Australia, Sydney Water, Telstra, RMS, Council etc) in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.
12. **Traffic Management.** Traffic management procedures and systems must be in place and practised during the construction period to ensure safety and minimise the effect on adjoining pedestrian and vehicular traffic systems. These procedures and systems

Conditions of Consent for LDA2018/0048 :-

must be in accordance with AS 1742.3 1985 and City of Ryde, Development Control Plan 2006: - Part 8.1; Construction Activities.

13. **Flood Impact Statement.** The Flood Impact Statement Issue A dated May 2018 and Issue B July 2018, prepared by Australian Consulting Engineers shall be complied with.
14. **Entrances.** Stairway entrances into the lot shall be designed with an upward step above the 100 Year ARI plus 0.5m freeboard flood level. Top Water Levels (TWL) at all stairways entrances, road and nature strip shall be shown on cross sections drawing (Drawing No. DA A895/4 Revision 4 dated 23-10-2018). Updated drawings including a design certificate shall be submitted to and approved by the Principal Certifying Authority prior to the issue of a Construction Certificate.
15. **Stormwater Management – Connection to Public Drainage System.** The point of discharge from the property drainage connection system shall be made to the inground drainage infrastructure and not directly into the channel. The Stormwater Concept Plan Lower Ground Level, Drawing No.SW104, Issue B dated July 2018 prepared by Australian Consulting Engineers shall be amended to include the construction detail for the inground connection, and resubmitted to Council for approval prior to the issue of a Construction Certificate.
16. **Service Alterations.** All mains, services, poles, etc., which require alteration due to works associated with the development, shall be altered at the applicant's expense.
17. **Design and Construction Standards.** All engineering plans and work inside the property shall be carried out in accordance with the requirements of the relevant Australian Standard. All Public Domain works or modification to Council infrastructure which may be located inside the property boundary, must be undertaken in accordance with Council's 2014 DCP Part 8.5 (Public Domain Works), except otherwise as amended by conditions of this consent.
18. **Restoration.** Public areas must be maintained in a safe condition at all times. Restoration of disturbed road and footway areas for the purpose of connection to public utilities will be carried out by Council following submission of a permit application and payment of appropriate fees. Repairs of damage to any public stormwater drainage facility will be carried out by Council following receipt of payment. Restoration of any disused gutter crossings will be carried out by Council following receipt of the relevant payment.
19. **Construction Staging.** For any staging of the public domain works, the applicant shall provide a detailed construction management and staging plan.
20. **Public areas and restoration works .** Public areas must be maintained in a safe condition at all times. Restoration of disturbed road and footway areas for the purpose of connection to public utilities, including repairs of damaged infrastructure as a result of the construction works associated with this development site, shall be undertaken by the Applicant in accordance with Council's standards and specifications, and DCP 2014 Part 8.5 *Public Civil Works*, to the satisfaction of Council.
21. **Ausgrid. Proximity to Existing Network Assets Overhead Powerlines**
There are existing overhead electricity network assets in Bowden St. Safework NSW Document - Work Near Overhead Powerlines:Code of Practice, outlines the

Conditions of Consent for LDA2018/0048 :-

minimum safety separation requirements between these mains/pole structures within the development throughout the construction process. It is a statutory requirement that these distances be maintained throughout construction. Special consideration should be given to the positioning and operating of cranes and the location of any scaffolding

The "as constructed" minimum clearances to the mains should also be considered. These distances are outlined in the Ausgrid Network Standard, NS220 Overhead Design Manual. This document can be sourced from Ausgrid's website, www.ausgrid.com.au

Should the existing overhead mains require relocating due to the minimum safety clearances being compromised in either of the above scenarios, this relocation work is generally at the developers cost. It is also the responsibility of the developer to ensure that the existing overhead mains have sufficient clearance from all types of vehicles that are expected be entering and leaving the site.

22. Ausgrid. Underground Cables

There are existing underground electricity network assets in Bowden Street and Constitution Road. Special care should also be taken to ensure that driveways and any other construction activities within the footpath area do not interfere with the existing cables in the footpath. Ausgrid cannot guarantee the depth of cables due to possible changes in ground levels from previous activities after the cables were installed. Hence it is recommended that the developer locate and record the depth of all known underground services prior to any excavation in the area.

Should ground anchors be required in the vicinity of the underground cables, the anchors must not be installed within 300mm of any cable, and the anchors must not pass over the top of any cable. Safework Australia– Excavation Code of Practice, and Ausgrid's Network Standard NS156 outlines the minimum requirements for working around Ausgrid's underground cables.

23. Carpark exhaust vent. The carpark must be provided with adequate system of ventilation. Exhaust vent must be located at least 3 metres above ground level or any pedestrian thoroughfare and:

- (a) at least 6 metres from any fresh air intake vent or natural ventilation opening; and
- (b) at least 6 metres or, where the dimensions of the allotment make this impossible, the greatest possible distance from any neighbouring property boundary.

PRIOR TO CONSTRUCTION CERTIFICATE

A Construction Certificate must be obtained from a Principal Certifier to carry out the relevant building works approved under this consent. All conditions in this Section of the consent must be complied with before a Construction Certificate can be issued.

Council Officers can provide these services and further information can be obtained from Council's Customer Service Centre on 9952 8222.

Conditions of Consent for LDA2018/0048 :-

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifier is responsible for determining compliance with the conditions in this Section of the consent.

Details of compliance with the conditions, including plans, supporting documents or other written evidence must be submitted to the Principal Certifier.

24. **Section 7.11.** A monetary contribution for the services in Column A and for the amount in Column B shall be made to Council as follows:

A – Contribution Type	B – Contribution Amount
Community & Cultural Facilities	\$117,931.94
Open Space & Recreation Facilities	\$290,324.45
Civic & Urban Improvements	\$98,745.09
Roads & Traffic Management facilities	\$13,469.40
Cycleways	\$8,413.71
Stormwater Management Facilities	\$26,742.77
Plan Administration	\$2,268.27
The total contribution is	\$557,895.63

These are contributions under the provisions of Section 7.11 of the Environmental Planning and Assessment Act, 1979 as specified in Section 94 Development Contributions Plan 2007 Interim Update (2014), effective from 10 December 2014.

The above amounts are current at the date of this consent, and are subject to **quarterly** adjustment for inflation on the basis of the contribution rates that are applicable at time of payment. Such adjustment for inflation is by reference to the Consumer Price Index published by the Australian Bureau of Statistics (Catalogue No 5206.0) – and may result in contribution amounts that differ from those shown above.

The contribution must be paid **prior to the issue of any Construction Certificate**. Payment may be by EFTPOS (debit card only), CASH or a BANK CHEQUE made payable to the **City of Ryde**. Personal or company cheques will not be accepted.

A copy of the Section 7.11 Development Contributions Plan may be inspected at the Ryde Customer Service Centre, 1 Pope Street Ryde (corner Pope and Devlin Streets, within Top Ryde City Shopping Centre) or on Council's website <http://www.ryde.nsw.gov.au>.

25. **Compliance with Australian Standards.** The development is required to be carried out in accordance with all relevant Australian Standards. Details demonstrating compliance with the relevant Australian Standard are to be submitted to the Principal Certifier prior to the issue of the **Construction Certificate**.
26. **Structural Certification.** The applicant must engage a qualified practising structural engineer to provide structural certification in accordance with relevant BCA requirements prior to the release of the **Construction Certificate**.
27. **Security deposit.** The Council must be provided with security for the purposes of section 4.17(6) of the *Environmental Planning and Assessment Act 1979* in a sum

Conditions of Consent for LDA2018/0048 :-

determined by reference to Council's Management Plan prior to the release of the **Construction Certificate**. (category: other buildings with delivery of bricks or concrete or machine excavation).

28. **Fees.** The following fees must be paid to Council in accordance with Council's Management Plan prior to the release of the **Construction Certificate**:
- (a) Infrastructure Restoration and Administration Fee
 - (b) Enforcement Levy
29. **Long Service Levy.** Documentary evidence of payment of the Long Service Levy under Section 34 of the Building and Construction Industry Long Service Payments Act 1986 is to be submitted to the Principal Certifier prior to the issuing of the **Construction Certificate**.
30. **Sydney Water – Building Plan Approval.** The plans approved as part of the Construction Certificate must also be approved by Sydney Water prior to excavation or construction works commencing. This allows Sydney Water to determine if sewer, water or stormwater mains or easements will be affected by any part of your development. Please go to www.sydneywater.com.au/tapin to apply.
31. **Detailed site investigation report** - The proponent must undertake a detailed site investigation. The detailed site investigation report must comply with the *Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 1997) and demonstrate that the site is suitable for the proposed use, or that the site can be remediated to the extent necessary for the proposed use.
- If remediation is required, the report should also set out the remediation options available for the site and whether the work is considered to be category 1 or category 2 remediation work.
32. **Remediation of land following detailed site investigation** - If required by the detailed site investigation report, the land must be remediated to the extent necessary for the proposed use and a copy of the site validation report must be submitted to Council for consideration. The site validation report must comply with the *Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 1997) and demonstrate that the site is suitable for the proposed use.
- No Construction Certificate is to be issued for any building work on the land, excluding those works required for the remediation of the site eg. excavation or shoring, until Council has confirmed in writing that it is satisfied that the land is suitable for the proposed use, without the need for further remediation.**
33. **Notice of remediation work** - Before commencing remediation work written notice must be submitted to Council in accordance with clause 16 of *State Environmental Planning Policy No. 55 - Remediation of Land*.
34. **Remediation work** - All remediation work must be carried out in accordance with the requirements of:
- a) State Environmental Planning Policy No. 55 - Remediation of Land;
 - b) any relevant guidelines published by the NSW Environment Protection Authority; and

Conditions of Consent for LDA2018/0048 :-

- c) any council policy or development control plan relating to the remediation of land.
35. **Council may require site audit of detailed investigation and validation reports** If requested by Council, a site audit statement and a site audit summary report from an accredited site auditor under the *Contaminated Land Management Act 1997* must be submitted to Council verifying the information contained in the detailed investigation and/or the site validation reports.
36. **Compliance Acoustical Assessment Report** . The development is to comply with the recommendations contained in Sections 5 & 6 in the Acoustic Report prepared by Acoustic Pty Ltd dated 20/12/2017. All noise and vibration control measures nominated in the acoustical consultant's report and any related project documentation must be implemented and shown on the Construction Certificate plans.
37. **Compliance with Geotechnical Report**. All design and construction work be conducted in full compliance with all of the recommendations as contained in the Geotechnical Report prepared by Assetgeo dated 15 December 2017.
38. **Compliance with Access Report**. The development is to comply with the requirements contained in the Access Design Assessment Report P217_301-3 (Access) LD prepared by Design Confidence dated 20 December 2017. The development is to comply with the Access to Premises Standard 2010, BCA 2014 and Australian Standard AS 1428.1 – 2009 Design for Access and Mobility – General Requirements For Access -New Building Work. Australian Standard AS 4299 – 1995. Prior to the issue of any construction Certificate, a suitably qualified access consultant is to certify that the development complies with the requirement of this condition.
39. **Adaptable Units**. Five (5) adaptable apartments, each with an allocated disabled parking space, are to be provided within the development. These apartments are to comply with all of the requirements as outlined in AS4299. Details demonstrating compliance is to be provided on the Construction Certificate plans. Prior to the issue of the Construction Certificate, a suitably qualified access consultant is to certify that the development achieves the requirements of AS4299.
40. **Storage**. Each residential unit is to be provided with the minimum internal storage area as required by the Apartment Design Guide. Details of the location of the storage and dimensions of the storage areas are to be provided on the Construction Certificate plans. The architect is to verify in writing that the development complies prior to the issue of the Construction Certificate.
41. **Soil Depth over Structures**. Where planting is proposed over a structure, the development is to achieve the minimum standards for soil provision suitable to the proposed planting, as contained within the Apartment Design Guide. Information verifying that the development complies with these requirements to be provided on the Construction Certificate plans.
42. **Irrigation**. An automatic watering system is to be supplied to all landscape areas including common areas, private open spaces to ensure adequate water is available to lawns and vegetation. Irrigation systems shall be fully automated and capable of

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seasonal adjustments. Details are to be submitted to the PCA prior to the issue of Construction Certificate.

43. **Signage Plan.** A detailed signage plan advising residents and visitors of the location of the vehicular access to the site, where visitors are to park and location of the loading bay for removalists are to be placed strategically within the building and Stage 7's carparking area (lifts, lobby areas etc) with residents of the Stage 7A building given a copy of the Signage Plan. Details to be submitted to and approved by Council prior to the issue of the Construction Certificate.

44. **Arts and Cultural Plan.** Prior to the issue of the Construction Certificate, a site specific Public Arts Plan is to be submitted for approval by Council. This plan is to be prepared by an arts and cultural planner and will be required to address the following:

- Identify opportunities for the integration of public art in the propose development;
- Identify themes for public art;
- Durability, robustness and longevity of the public art; and
- Demonstrate how public art is incorporated in the site and built form design.

45. **Reflectivity of materials.** Roofing and other external materials must be of low glare and reflectivity. Details of finished external surface materials, including colours and texture must be provided to the Principal Certifier prior to the release of the **Construction Certificate**.

46. **Fencing.** Fencing is to be in accordance with Council's DCP 2014: Part 3.3 – Dwelling Houses and Dual Occupancy (attached) – Section 2.16 - Fences. Details of compliance are to be provided in the plans for the **Construction Certificate**.

47. **Lighting of common areas including entry areas and pathways.** All common areas, pathways and the building entries are to be provided with low glare lighting. The Bowden Street walkway entrance is also to be provided with low glaze lighting to enhance walkway. Details of the lighting shall be submitted for approval prior to issue of the **Construction Certificate**. The details to include certification from an appropriately qualified person that there will be no offensive glare onto adjoining residents.

48. **Fibre-ready facilities and telecommunications infrastructure.** Prior to the issue of any Construction Certificate satisfactory evidence is to be provided to the Certifier that arrangements have been made for:

- (i) The installation of fibre-ready facilities to all individual lots and/or premises in a real estate development project so as to enable fibre to be readily connected to any premises that is being or may be constructed on those lots. Alternatively, demonstrate that the carrier has confirmed in writing that they are satisfied that the fibre ready facilities are fit for purpose.

And

- (ii) The provision of fixed-line telecommunications infrastructure in the fibre-ready facilities to all individual lots and/or premises in a real estate development project demonstrated through an agreement with a carrier.

(Note real estate development project has the meanings given in Section 372Q of the Telecommunications Act).

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49. **Construction Traffic Management Plan.** As a result of the site constraints, limited vehicle access and parking, a Construction Traffic Management Plan (CTMP) and report shall be prepared by an RMS accredited person and submitted to and approved by Council prior to issue of any Construction Certificate.

The CTMP must:-

- i. Make provision for all construction materials to be stored on site, at all times.
- ii. Specify construction truck routes and truck rates. Nominated truck routes are to be distributed over the surrounding road network where possible.
- iii. Make provision for parking onsite once basement level is constructed. All Staff and Contractors are to use the basement parking once available.
- iv. Provide for the movement of trucks to and from the site, and deliveries to the site. Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site are not permitted unless approved by Council's Public Works.
- v. Include a Traffic Control Plan prepared by an RMS accredited traffic controller for any activities involving the management of vehicle and pedestrian traffic.
- vi. Specify that a minimum Fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measure.
- vii. Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes and concrete pumps, structures proposed on the footpath areas (hoardings, scaffolding or shoring) and any tree protection zones around Council street trees.
- viii. Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the CTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities, such as (but not limited to) concrete pours, crane lifts and dump truck routes. These communications must be documented and submitted to Council prior to work commencing on site.
- ix. Specify spoil management process and facilities to be used on site.
- x. Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council.
- xi. The CTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – "Manual of Uniform Traffic Control Devices", RMS' Manual – "Traffic Control at Work Sites", Council's DCP 2014 Part 8.1 (Construction Activities) and Council's CTMP checklist. A copy of Council's CTMP checklist shall be obtained from Council's Traffic, Transport and Development Department prior to submission of CTMP.
- xii. All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Construction Traffic Management Plan is submitted.

Note: This condition is to ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems. The CTMP is intended to minimise impact of construction activities on the surrounding community, in terms of vehicle traffic (including traffic flow and parking) and pedestrian amenity adjacent to the site.

50. **Ground Anchors.** The installation of permanent ground anchors into public roadway is not permitted. The installation of temporary ground anchors may be considered

Conditions of Consent for LDA2018/0048 :-

subject to an application to Council's City Works Directorate, and approval obtained as per the provisions of Section 138 of the Roads Act, 1993. The application for consent must include detailed structural engineering plans prepared by a Chartered Structural Engineer (registered on the NER of Engineers Australia), clearly nominating the number of proposed anchors, minimum depth below existing ground level at the boundary alignment and the angle of installation. The approval will be subject to:

- a. Advice being provided to the relevant Public Utility Authorities of the proposed anchoring and their requirements are met.
- b. the payment of all fees in accordance with Council's Schedule of Fees & Charges at the time of the application, and
- c. the provision of a copy of the Public Liability insurance cover of not less than \$20million with Council's interest noted on the policy. The policy shall remain valid until the de-commissioning of the ground anchors.

51. **Public domain improvements.** The public domain is to be upgraded in both Bowden Street and Constitution Road frontages of the development site in accordance with the City of Ryde Public Domain Technical Manual Section 5 - Meadowbank. The work is to include paving, multifunction light poles, street furniture and plantings, and must be completed to Council's satisfaction at no cost to Council, prior to the issue of any Occupation Certificate.

A public domain plan for the following works shall be submitted to, and approved by Council's City Works Directorate, prior to the issue of the Construction Certificate.

- (a) Footpath paving as specified in the condition of consent for public infrastructure works.
- (b) Street trees to be provided in accordance with the Meadowbank Street Tree Master Plan. The designated species are "Angophora costata" (Sydney Red Gum) for Constitution Road frontage of the development, and "Fraxinus griffithii" (Evergreen Ash) or "Fraxinus oxycarpa 'Raywoodii'" (Claret Ash) as the designated street tree for Bowden Street.

Note: In designing the street tree layout, the consultant shall check and ensure that all new street trees are positioned such that there are no conflicts with the proposed street lights, utilities and driveway accesses. The proposed street lights will have priority over the street trees. All costs associated with the removal of existing street trees, where required, will be borne by the Developer.

- (c) All telecommunication and utility services are to be placed underground along the Constitution Road and Bowden Street frontages. The extent of works required in order to achieve this outcome may involve works beyond the frontage of the development site.

Plans are to be prepared and certified by a suitably qualified Electrical Design Consultant for decommissioning the existing network and constructing the new network; and are to be submitted to, and approved by Council and relevant utility authorities, prior to commencement of work. The public utility cover requirements shall be based on the approved Finished Surface Levels for the footpath, driveways and kerb ramps.

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For the undergrounding of existing overhead electricity network, the requirements mentioned in the Ausgrid's Network Standards NS130 and NS156 are to be met.

- (d) New street lighting serviced by metered underground power and on multifunction poles (MFPs) shall be designed and installed to Australian Standard AS1158:2010 *Lighting for Roads and Public Spaces*, with a minimum vehicular luminance category V3 and pedestrian luminance category P2 along Constitution Road and Bowden Street.

Subject to design, it is expected that two new street lights on multi-function poles (MFPs) will be required along the Bowden Street frontage and three new street lights on MFP's will be required along the Constitution Road frontage of the site. Lighting upgrade shall be in accordance with the City of Ryde *Public Domain Technical Manual Section 5 – Meadowbank*. The consultant shall liaise with Council's City Works Directorate in obtaining Council's requirements and specifications for the MFP and components, including the appropriate LED luminaire and location of the meter boxes.

Plans are to be prepared and certified by a suitably qualified Electrical Design Consultant and submitted to, and approved by Council's City Works Directorate prior to lodgement of the scheme with Ausgrid for their approval.

Note: Council has prepared a design guide and schema for the provision of the street lighting on MFPs. A copy of the design guide and schema can be made available to the Electrical Design Consultant upon request to Council's City Works Directorate.

- 52. Public Infrastructure Works.** Public infrastructure works shall be designed and constructed as outlined in this condition of consent. The approved works must be completed to Council's satisfaction at no cost to Council.

Engineering drawings prepared by a Chartered Civil Engineer (registered on the NER of Engineers Australia) are to be submitted to, and approved by Council's City Works Directorate prior to the issue of the Construction Certificate. The works shall be in accordance with City of Ryde DCP 2014 Part 8.5 - *Public Civil Works*, and DCP 2014 Part 8.2 - *Stormwater Management*, where applicable.

The drawings shall include plans, sections, existing and finished surface levels, drainage pit configurations, kerb returns, existing and proposed signage and line-marking, and other relevant details for the new works. The drawings shall also demonstrate the smooth connection of the proposed road works into the remaining street scape.

The drawings shall also include the boundary adjustment to create the splay corner to be dedicated as public road at the intersection of Bowden Street and Constitution Road.

The Applicant must submit, for approval by Council as a Road Authority, full design engineering plans and specifications for the following infrastructure works:

- (a) The full reconstruction of half road width for the Bowden Street and Constitution Road frontages of the development site in accordance with the

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City of Ryde DCP 2014 *Part 8.5 - Public Civil Works*, Clause 1.1.4 – *Constructing Half Road*.

- (b) The removal of all redundant vehicular crossings and replacement with new kerb and gutter, and the adjacent road pavement reconstruction.
- (c) Full depth road reconstruction of the slip lane parallel to Constitution Road according to Council's guidelines.
- (d) The construction of new kerb and gutter along the Constitution Road and Bowden Street frontages of the development site. Proposed kerb profiles are to be provided to ensure proper connections to existing kerb and gutter along Bowden Street and the slip lane parallel to Constitution Road.
- (e) Construction of granite footway along the Bowden Street frontage of the development site in accordance with the City of Ryde Public Domain Technical Manual *Section 5 – Meadowbank*.
- (f) Stormwater drainage installations in the public domain in accordance with the DA approved plans.
- (g) Signage and line-marking including any requirements of Ryde Traffic Committee.
- (h) Staging of the public civil works, if any, and transitions between the stages.
- (i) The relocation/adjustment of all public utility services affected by the proposed works. Written approval from the applicable Public Authority shall be submitted to Council along with the public domain plans submission. All the requirements of the Public Authority shall be complied with.

Notes:

1. The Applicant is advised to consider the finished levels of the public domain, including new or existing footpaths, prior to setting the floor levels for the proposed building.
2. Depending on the complexity of the proposed public domain works, the Council's review of each submission of the plans may take a minimum of six (6) weeks.
3. Prior to submission to Council, the Applicant is advised to ensure that the drawings are prepared in accordance with the standards listed in the City of Ryde DCP 2014 *Part 8.5 - Public Civil Works*, Section 5 "*Standards Enforcement*". A checklist is also available upon request to Council's City Works Directorate.
4. City of Ryde standard drawings for public domain infrastructure assets are available on the Council website. Details that are relevant may be replicated in the public domain design submissions; however Council's title block shall not be replicated.

53. **Public Domain Works – Defects Security Bond.** To ensure satisfactory performance of the public domain works, a defects liability period of twelve (12) months shall apply to the works in the road reserve following completion of the development. The defects liability period shall commence from the date of issue by Council, of the Compliance Certificate for the External Works. The applicant shall be liable for any part of the work which fails to perform in a satisfactory manner as outlined in Council's standard specification, during the twelve (12) months' defects liability period. A bond in the form of a cash deposit or Bank Guarantee of \$62,000 shall be lodged with the City of Ryde prior to the issue of a Construction Certificate to guarantee this requirement will be met. The bond will only be refunded when the works are determined to be satisfactory to Council after the expiry of the twelve (12) months defects liability period.

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54. **Engineering plans assessment and works inspection fees.** The applicant is to pay to Council fees for assessment of all engineering and public domain plans and inspection of the completed works in the public domain, in accordance with Council's Schedule of Fees & Charges at the time of the issue of the plan approval, prior to such approval being granted by Council.

Note: An invoice will be issued to the Applicant for the amount payable, which will be calculated based on the design plans for the public domain works.

55. **Vehicle Access & Parking.** All internal driveways, vehicle turning areas, garages and vehicle parking space/ loading bay dimensions must be designed and constructed to comply with the relevant section of AS 2890 (Offstreet Parking standards).

With respect to this, the following revision(s) must be undertaken;

- One residential car parking space on Basement 1 is to be converted for use for motorcycle parking with signage advising of such.

The amendment(s) must be clearly marked on the plans submitted to the Accredited Certifier prior to the issue of a Construction Certificate.

56. **Stormwater Management.** Stormwater runoff from the development shall be collected and piped by gravity flow to the public trunk drainage infrastructure located in the neighbouring property (37 to 53 Nfor ancarrow Avenue) generally in accordance with the plans by Australian Consulting Engineers (Refer to Project No. ACE151141.SW.DA Dwgs SW000 - SW106 Rev A dated 8 December 2017) subject to any variations marked in red on the approved plans and noted following;

- A defined failure mode (overland flow path) must be provided, directing any surcharge or surface flow to the easement meaning from the southeastern corner of the lot (being the lowest point of the site). To comply with this, any walls over the flowpath must accommodate perforations at the base to permit the conveyance of flows through the area.
- Connection of the sites drainage system to the public drainage infrastructure located in the trunk drainage will require approval from Council's Stormwater Section. Refer to the condition "*Stormwater Management – Connection to Public Drainage System.*".

The detailed plans, documentation and certification of the drainage system must be submitted with the application for a Construction Certificate and prepared by a chartered civil engineer and comply with the following;

- The certification must state that the submitted design (including any associated components such as WSUD measures, pump/ sump, absorption, onsite dispersal, charged system) are in accordance with the requirements of AS 3500.3 (2003) and any further detail or variations to the design are in accordance with the requirements of Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures.
- The submitted design is consistent with the approved architectural and landscape plan and any revisions to these plans required by conditions of this consent.
- The subsurface drainage system must be designed to preserve the pre-developed groundwater table so as to prevent constant, ongoing discharge of groundwater to the public drainage network, as well as avoid long term impacts related to the support of structures on neighbouring properties.

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57. **Stormwater Management – Connection to Public Drainage System.** The connection to the public inground stormwater drainage infrastructure located in the neighbouring property of 37 to 53 Nancarrow Avenue will require the assessment, approval and inspection by Council's Civil Infrastructure & Integration Department (Stormwater Section) to ensure the integrity of this asset is maintained. Engineering plans detailing the method of connection complying with Council's DCP and Technical Standards and an inspection fee in accordance with Council's Schedule of Fees and Charges must be paid to Council prior to the issue of the Construction Certificate. Council must be notified when the connection has been made to the channel/ pit / pipe and an inspection must be made by a Council officer prior to restoration/ backfill at the point of connection for approval.

Where the point of connection is in neighbouring property, the applicant must provide written notification to the affected property owner no less than a week prior to the works and all structures/ surface areas affected by the drainage connection works must be reinstated at the completion of this activity, at no cost to the affected property owner.

The point of discharge from the property drainage connection system shall be made to the inground drainage infrastructure. The Stormwater Concept Plan Lower Ground Level, Drawing No.SW104, Issue B dated July 2018 prepared by Australian Consulting Engineers shall be amended to include the construction detail for the inground connection, and resubmitted to Council for approval prior to the issue of a Construction Certificate.

58. **Stormwater Improvement Works.** Details Civil Plans are to be submitted complying with the requirements of Council's City Works Directorate, City of Ryde DCP 2014 and relevant Australian Standards. Stormwater improvement works are required to both frontages of Bowden Street and Constitution Road southern slip lane. Stormwater documentation including concept stormwater plans, detailed stormwater engineering plans, supporting calculations, models and reports shall be submitted to and approved by Council's City Works Directorate, prior to the issue of the Construction Certificate.
59. **Geotechnical Design, Certification and Monitoring Program.** The proposed development involves the construction of subsurface structures and excavation that has potential to adversely impact neighbouring property if undertaken in an inappropriate manner. To ensure there are no adverse impacts arising from such works, the applicant must engage a suitably qualified and practicing Engineer having experience in the geotechnical and hydrogeological fields, to design, certify and oversee the construction of all subsurface structures associated with the development.

This engineer is to prepare the following documentation;

- a) Certification that the civil and structural details of all subsurface structures are designed to;
- provide appropriate support and retention to neighbouring property,
 - ensure there will be no ground settlement or movement during excavation or after construction (whether by the act of excavation or dewatering of the excavation) sufficient to cause an adverse impact to adjoining property or public infrastructure, and,
 - ensure that the treatment and drainage of groundwater will be undertaken in a manner which maintains the pre-developed groundwater regime, so as to avoid

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constant or ongoing seepage to the public drainage network and structural impacts that may arise from alteration of the pre-developed groundwater table.

- b) A Geotechnical Monitoring Program (GMP) to be implemented during construction that;
- is based on a geotechnical investigation of the site and subsurface conditions, including groundwater,
 - details the location and type of monitoring systems to be utilised, including those that will detect the deflection of all shoring structures, settlement and excavation induced ground vibrations to the relevant Australian Standard;
 - details recommended hold points and trigger levels of any monitoring systems, to allow for the inspection and certification of geotechnical and hydro-geological measures by the professional engineer; and;
 - details action plan and contingency for the principal building contractor in the event these trigger levels are exceeded.
 - Is in accordance with the recommendations of any Geotechnical Report approved/ required by this consent.

The certification and the GMP is to be submitted for the approval of the Accredited Certifier prior to the issue of the Construction Certificate.

60. **Dilapidation Survey.** A dilapidation survey is to be undertaken that addresses all properties that may be affected by the construction work, namely 37 to 53 Nancarrow Avenue & 106 Bowden Street. A copy of the dilapidation survey is to be submitted to the Accredited Certifier *and Council* prior to the release of the Construction Certificate.
61. **Site Dewatering Plan.** To ensure that stormwater runoff and the disposal of groundwater from the excavation is drained in an appropriate manner and without detrimental impacts to neighbouring properties and downstream water systems, a Site Dewatering Plan (SDP) must be prepared and submitted with the application for a Construction Certificate.

The SDP is to comprise of detailed plans, documentation and certification of the system, must be prepared by a chartered civil engineer and must, as a minimum, comply with the following;

- All pumps used for onsite dewatering operations are to be installed on the site in a location that will minimise any noise disturbance to neighbouring or adjacent premises and be acoustically shielded so as to prevent the emission of offensive noise as a result of their operation.
- Pumps used for dewatering operations are not to be fuel based so as to minimise noise disturbance and are to be electrically operated.
- Discharge lines are to be recessed across footways so as to not present as a trip hazard and are to directly connect to the public inground drainage infrastructure where ever possible.
- The maximum rate of discharge is to be limited to the sites determined PSD rate or 30L/s if discharging to the kerb.
- Certification must state that the submitted design is in accordance with the requirements of this condition and any relevant sections of Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures.
- Be in accordance with the recommendations of approved documents which concern the treatment and monitoring of groundwater.

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- Any details, approval or conditions concerning dewatering (eg Dewatering License) as required by the Water Act 1912 and any other relevant NSW legislation.
- Approval and conditions as required for connection of the dewatering system to the public drainage infrastructure as per Section 138 of the Roads Act.

62. **Erosion and Sediment Control Plan.** An Erosion and Sediment Control Plan (ESCP) must be prepared by a suitably qualified consultant, detailing soil erosion control measures to be implemented during construction. The ESCP is to be submitted with the application for a Construction Certificate. The ESCP must be in accordance with the manual *"Managing Urban Stormwater: Soils and Construction"* by NSW Department – Office of Environment and Heritage and must contain the following information;

- Existing and final contours
- The location of all earthworks, including roads, areas of cut and fill
- Location of all impervious areas
- Location and design criteria of erosion and sediment control structures,
- Location and description of existing vegetation
- Site access point/s and means of limiting material leaving the site
- Location of proposed vegetated buffer strips
- Location of critical areas (drainage lines, water bodies and unstable slopes)
- Location of stockpiles
- Means of diversion of uncontaminated upper catchment around disturbed areas
- Procedures for maintenance of erosion and sediment controls
- Details for any staging of works
- Details and procedures for dust control.

The ESCP must be submitted with the application for a Construction Certificate. This condition is imposed to protect downstream properties, Council's drainage system and natural watercourses from sediment build-up transferred by stormwater runoff from the site.

63. **Waste Management Plan.** Any changes to the Waste Management Plan dated December 2017 or DA A881/2, A102/2 & A105/2 plans which were utilized to evaluate the waste collection by Council, have to be approved by the Waste Department at the City of Ryde Council before the issue of a Construction Certificate to ensure the waste collection is not affected.

64. **Waste Storage.** All waste storage areas which have a doorway must be wide enough to allow the bins allocated to the property to fit through opening including the door.

- 1100L Bins – width 1.4m, depth 1.1m, height 1.4m
- 240L Bins – width 0.6m, depth 0.8m, height 1.1m

All garbage and recycling rooms must be constructed in accordance with the following requirements:

- (a) The room must be of adequate dimensions to accommodate all waste containers, and any compaction equipment installed, and allow easy access to the containers and equipment for users and servicing purposes;
- (b) The floor must be constructed of concrete finished to a smooth even surface, coved to a 25mm radius at the intersections with the walls and any exposed plinths, and graded to a floor waste connected to the sewerage system;

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- (c) The floor waste must be provided with a fixed screen in accordance with the requirements of Sydney Water Corporation;
- (d) The walls must be constructed of brick, concrete blocks or similar solid material cement rendered to a smooth even surface and painted with a light coloured washable paint;
- (e) The ceiling must be constructed of a rigid, smooth-faced, non-absorbent material and painted with a light coloured washable paint;
- (f) The doors must be of adequate dimensions to allow easy access for servicing purposes and must be finished on the internal face with a smooth-faced impervious material;
- (g) Any fixed equipment must be located clear of the walls and supported on a concrete plinth at least 75mm high or non-corrosive metal legs at least 150mm high;
- (h) The room must be provided with adequate natural ventilation direct to the outside air or an approved system of mechanical ventilation;
- (i) The room must be provided with adequate artificial lighting;
- (j) a hose with a trigger nozzle must be provided in or adjacent to the room to facilitate cleaning;
- (k) The paving from the waste storage area or garbage and recycling room must be moderately graded with no steps or uneven surfaces so that the waste containers can be safely and easily maneuvered to the collection point.
- (l) Signs will be required to be placed within the bin area to encourage correct recycling and reduce contamination. City of Ryde will provide the required signage.
- (m) All waste storage areas must be maintained in a clean and tidy condition at all times.
- (n) Wastes for recycling should be the stored in separate bins or containers and transported to a facility where the wastes will be recycled or re-used.
- (o) An adequate number of suitable waste containers must be kept on the premises for the storage of garbage.

65. Evidence of connection by gravity flow. Documentary evidence from a professional hydraulic engineer or other suitably qualified person demonstrating that all of the premises will be connected directly to the sewerage system by gravity flow must be submitted with the application for the Construction Certificate.

PRIOR TO COMMENCEMENT OF CONSTRUCTION

Prior to the commencement of any demolition, excavation, or building work the following conditions in this Part of the Consent must be satisfied, and all relevant requirements complied with at all times during the operation of this consent.

66. Site Sign

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- (a) A sign must be erected in a prominent position on site, prior to the commencement of construction:
 - (i) showing the name, address and telephone number of the Principal Certifier for the work,
 - (ii) showing the name of the principal contractor (if any) or the person responsible for the works and a telephone number on which that person may be contacted outside working hours, and
 - (iii) stating that unauthorised entry to the work site is prohibited.
- (b) Any such sign must be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

67. Excavation adjacent to adjoining land

- (a) If an excavation extends below the level of the base of the footings of a building on an adjoining allotment of land, the person causing the excavation must, at their own expense, protect and support the adjoining premises from possible damage from the excavation, and where necessary, underpin the adjoining premises to prevent any such damage.
- (b) The applicant must give at least seven (7) days notice to the adjoining owner(s) prior to excavating.
- (c) An owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this condition, whether carried out on the allotment of land being excavated or on the adjoining allotment of land.

68. **Safety fencing.** The site must be fenced prior to the commencement of construction, and throughout demolition and/or excavation and must comply

69. **Notice of Intention to Commence Public Domain Works –** Prior to commencement of the public domain works, a *Notice of Intention to Commence Public Domain Works* shall be submitted to Council's City Works Directorate. This Notice shall include the name of the Contractor who will be responsible for the construction works, and the name of the Supervising Engineer who will be responsible for providing the certifications required at the hold points during construction, and also obtain all Road Activity Permits required for the works.

Note: Copies of a number of documents are required to be lodged with the Notice; no fee is chargeable for the lodgement of the Notice.

70. **Notification of adjoining owners & occupiers – public domain works -** The Applicant shall provide the adjoining owners and occupiers written notice of the proposed public domain works a minimum two weeks prior to commencement of construction. The notice is to include a contact name and number should they have any enquiries in relation to the construction works. The duration of any interference to neighbouring driveways shall be minimised; and driveways shall be returned to the operational condition as they were prior to the commencement of works, at no cost to the owners.

71. **Pre-construction inspection.** A joint inspection shall be undertaken with Council's Engineer from City Works Directorate prior to commencement of any public domain works. A minimum 48 hours' notice will be required when booking for the joint inspection.

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72. **Pre-Construction Dilapidation Report.** To ensure Council's infrastructures are adequately protected a pre-construction dilapidation report on the existing public infrastructure in the vicinity of the proposed development and along the travel routes of all construction vehicles, up to 100m either side of the development site, is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record of any observable defects to the following infrastructure where applicable.

- a) Road pavement,
- b) Kerb and gutter,
- c) Footpath,
- d) Drainage pits,
- e) Traffic signs, and
- f) Any other relevant infrastructure

The report is to be dated and submitted to, and accepted by Council's City Works Directorate, prior to any work commencing.

All fees and charges associated with the review of this report shall be in accordance with Council's Schedule of Fees and Charges and shall be paid at the time that the Dilapidation Report is submitted.

73. **Road Activity Permits.** To carry out work in, on or over a public road, the Consent of Council is required as per the *Roads Act 1993*. Prior to the commencement of the relevant works and considering the lead times required for each application, permits for the following activities, as required and as specified in the form "*Road Activity Permits Checklist*" (available from Council's website) are to be obtained and copies submitted to Council with the *Notice of Intention to Commence Public Domain Works*.

- a) **Road Use Permit** - The applicant shall obtain a Road Use Permit where any area of the public road or footpath is to be occupied as construction workspace, other than activities covered by a Road Opening Permit or if a Work Zone Permit is not obtained. The permit does not grant exemption from parking regulations.
- b) **Work Zone Permit** - The applicant shall obtain a Work Zone Permit where it is proposed to reserve an area of road pavement for the parking of vehicles associated with a construction site. Separate application is required with a Traffic Management Plan for standing of construction vehicles in a trafficable lane. **A Roads and Maritime Services Road Occupancy Licence shall be obtained for State Roads.**
- c) **Road Opening Permit** - The applicant shall apply for a road-opening permit and pay the required fee where a new pipeline is to be constructed within or across the road pavement or footpath. Additional road opening permits and fees are required where there are connections to public utility services (e.g. telephone, telecommunications, electricity, sewer, water or gas) within the road reserve. No opening of the road or footpath surface shall be carried out without this permit being obtained and a copy kept on the site.
- d) **Elevated Tower, Crane or Concrete Pump Permit** - The applicant shall obtain an Elevated Tower, Crane or Concrete Pump Permit where any of these items

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of plant are placed on Council's roads or footpaths. This permit is in addition to either a Road Use Permit or a Work Zone Permit.

- e) Crane Airspace Permit - The applicant shall obtain a Crane Over Airspace Permit where a crane on private land is operating in the air space of a Council road or footpath. Approval from the Roads and Maritime Services for works on or near State Roads is required prior to lodgement of an application with Council. A separate application for a Work Zone Permit is required for any construction vehicles or plant on the adjoining road or footpath associated with use of the crane.
- f) Hoarding Permit - The applicant shall obtain a Hoarding Permit and pay the required fee where erection of protective hoarding along the street frontage of the property is required. The fee payable is for a minimum period of 6 months and should the period is extended an adjustment of the fee will be made on completion of the works. The site must be fenced to a minimum height of 1.8 metres prior to the commencement of construction and throughout demolition and/or excavation and must comply with WorkCover (New South Wales) requirements.
- g) Skip Bin on Nature Strip - The applicant shall obtain approval and pay the required fee to place a Skip Bin on the nature strip where it is not practical to locate the bin on private property. No permit will be issued to place skips.

74. Temporary Footpath Crossing. A temporary footpath crossing, if required, must be provided at the vehicular access points. It is to be 4 metres wide, made out of sections of hardwood with chamfered ends and strapped with hoop iron, and a temporary gutter crossing must be provided.

75. Property above/below Footpath Level. Where the ground level adjacent the property alignment is above/below the ultimate footpath level, as set by Council, adequate measures are to be taken (either by means of constructing approved retaining structures or batters entirely on the subject property) to support the subject land/footpath. An approved fence shall be erected along the boundary for public safety.

DURING CONSTRUCTION

Unless otherwise specified, the following conditions in this Part of the consent must be complied with at all times during the construction period. Where applicable, the requirements under previous Parts of the consent must be implemented and maintained at all times during the construction period.

- 76. Traffic Management.** Any traffic management procedures and systems must be in accordance with AS 1742.3 1996 and City of Ryde, Development Control Plan 2014: - Part 8.1; Construction Activities. This condition is to ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems.

Accordingly, a detailed plan of traffic management prepared by a traffic engineer including certification indicating compliance are to be submitted with the Construction Certificate application.

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77. **Truck Shaker.** A truck shaker grid with a minimum length of 6 metres must be provided at the construction exit point. Fences are to be erected to ensure vehicles cannot bypass them. Sediment tracked onto the public roadway by vehicles leaving the subject site is to be swept up immediately.
78. **Stormwater Management - Construction.** The stormwater drainage system on the site must be constructed in accordance with the Construction Certificate version of the Stormwater Management Plan by Australian Consulting Engineers (Refer to Project No. ACE151141.SW.DA Dwgs SW000 - SW106 Rev A dated 8 December 2017) submitted in compliance to the condition labelled "Stormwater Management." and the requirements of Council in relation to the connection to the public drainage system.
79. **Stormwater Management – Works in the New Drainage Easement.** To ensure there is minimal imposition and loss of amenity to the owner/ occupants of the property burdened by the new drainage easement in construction of these drainage services, the builder/ developer must;
- (i) provide a minimum 3 weeks notification to the burdened property owner and occupants prior to the commencement of works in the neighbouring property.
 - (ii) ensure the works are completed in a timely manner.
 - (iii) ensure any structures adjacent the works are adequately supported at all times.
 - (iv) make provision to restore the work area so as to maintain the amenity of the land / minimise the imposition of works on the burdened land, should the works be delayed due to unforeseen events such as weather, service adjustments, etc.
 - (v) restore all areas on the burdened property disturbed by the construction works to a condition equivalent to the pre-developed state or otherwise as agreed by the owner of the burdened property.
 - (vi) comply with any terms agreed upon by both parties in regards to the construction of the drainage services and restoration of the land, in the granting of the easement.
80. **Erosion and Sediment Control Plan - Implementation.** The applicant shall install erosion and sediment control measures in accordance with the Construction Certificate approved Soil Erosion and Sediment Control (ESCP) plan at the commencement of works on the site. Erosion control management procedures in accordance with the manual "Managing Urban Stormwater: Soils and Construction" by the NSW Department – Office of Environment and Heritage, must be practiced at all times throughout the construction.
81. **Geotechnical Monitoring Program - Implementation.** The construction and excavation works are to be undertaken in accordance with the Geotechnical Report and Monitoring Program (GMP) submitted with the Construction Certificate. All recommendations of the Geotechnical Engineer and GMP are to be carried out during the course of the excavation. The applicant must give at least seven (7) days notice to the owner and occupiers of the adjoining allotments before excavation works commence.
82. **Site Dewatering Plan – Implementation.** The Site Dewatering Plan (SDP) on the site must be constructed in accordance with the Construction Certificate version of the SDP submitted in compliance to the condition labelled "Site Dewatering Plan.", the requirements of Council in regards to disposal of water to the public drainage infrastructure and the requirements of any Dewatering License issued under NSW Water Act 1912 in association with the works. A copy of the SDP is to be kept on site at all times whilst dewatering operations are carried out.

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83. **Public Domain Works – Construction Inspections.** Any works in the Public Domain or alterations to public infrastructure that will come under the care and control of Council upon completion of the development, will require inspection by Council's Civil Infrastructure & Integration Department (the relevant officer) at the following hold points: -

- a) Prior to the commencement of construction and following the set-out on site of the position of the drainage works to the levels shown on the approved drainage drawings.
- b) Upon excavation of trenches and for other drainage structures to the line, grade, widths and depths shown on the approved drainage drawings.
- c) Upon installation of any pipe and other drainage structures.
- d) Upon backfilling of excavated areas and prior to the construction of the final pavement surface.
- e) Upon the completion of all drainage works and prior to practical completion.

An inspection fee is applicable for each visit and at least 24hours notification will be required prior to each inspection.

84. **Stormwater Improvements – Inspections** will be required by Council's engineer at the following hold points:

- After excavation of pipeline trenches
- After the laying of all pipes prior to backfilling.
- After the completion of all pits and connection points.

A minimum of 24 hours notice shall be given to Council to inspect works. Work is not be proceed until the works are inspected and approved by Council in writing for each hold point.

85. **Critical stage inspections.** The person having the benefit of this consent is required to notify the Principal Certifier during construction to ensure that the critical stage inspections are undertaken, as specified under clause 162A(4) of the *Environmental Planning and Assessment Regulation 2000*.
86. **Noise Management Plan.** Where demolition or construction activities are likely to cause significant noise or vibration (eg. jackhammering ,rock breaking or impact piling) a noise management plan must be prepared by a suitably qualified acoustical consultant and be submitted to the Principal Certifying Authority before the work commences. The plan must be prepared in accordance with the Interim Construction Noise Guideline (DECC, 2009) and include:
- (a) Identification of nearby affected residences or other sensitive receivers.
 - (b) An assessment of the expected noise impacts.
 - (c) Details of the work practices required to minimise noise impacts.
 - (d) Noise monitoring procedures.
 - (e) Procedures for notifying nearby affected residents.
 - (f) Complaints management procedures.
87. **Survey of footings/walls.** All footings and walls within 1 metre of a boundary must be set out by a registered surveyor. On commencement of brickwork or wall construction a survey and report must be prepared indicating the position of external walls in relation to the boundaries of the allotment.

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88. **Sediment/dust control.** No sediment, dust, soil or similar material shall leave the site during construction work.
89. **Use of fill/excavated material.** Excavated material must not be reused on the property except as follows:
- (a) Fill is allowed under this consent;
 - (b) The material constitutes Virgin Excavated Natural Material as defined in the *Protection of the Environment Operations Act 1997*;
 - (c) the material is reused only to the extent that fill is allowed by the consent.
90. **Construction materials.** All materials associated with construction must be retained within the site.
91. **Site Facilities**
The following facilities must be provided on the site:
- (a) toilet facilities in accordance with Safework NSW requirements, at a ratio of one toilet per every 20 employees, and
 - (b) a garbage receptacle for food scraps and papers, with a tight fitting lid.
92. **Site maintenance**
The applicant must ensure that:
- (a) approved sediment and erosion control measures are installed and maintained during the construction period;
 - (b) building materials and equipment are stored wholly within the work site unless an approval to store them elsewhere is held;
 - (c) the site is clear of waste and debris at the completion of the works.
93. **Work within public road.** At all times work is being undertaken within a public road, adequate precautions shall be taken to warn, instruct and guide road users safely around the work site. Traffic control devices shall satisfy the minimum standards outlined in Australian Standard No. AS1742.3-1996 "Traffic Control Devices for Work on Roads".
94. **Implementation of Construction Traffic Management Plan.** All works and construction activities are to be undertaken in accordance with the approved Construction Traffic Management Plan (CTMP). All controls in the CTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate RMS accreditation. Should the implementation or effectiveness of the CTMP be impacted by surrounding major development not encompassed in the approved CTMP, the CTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved CTMP is to be kept onsite at all times and made available to the accredited certifier or Council on request.
95. **Hold Points during construction - Public Domain.** Council requires inspections to be undertaken by a Chartered Civil Engineer (registered on the NER of Engineers Australia), for the public domain, at the hold points shown below.

The Applicant shall submit to Council's City Works Directorate, certification from the Engineer, at each stage of the inspection listed below, within 24 hours following completion of the relevant stage/s.. The certificates shall contain photographs of the

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works in progress and a commentary of the inspected works, including any deficiencies and rectifications that were undertaken.

- a) Prior to the commencement of construction and following the set-out on site of the position of the civil works to the levels shown on the approved civil drawings.
- b) Upon excavation, trimming and compaction to the subgrade level - to the line, grade, widths and depths, shown on the approved civil engineering drawings.
- c) Upon compaction of the applicable sub-base course.
- d) Upon compaction or construction of any base layers of pavement, prior to the construction of the final pavement surface (e.g. prior to laying any pavers or asphalt wearing course).
- e) Upon installation of any formwork and reinforcement for footpath concrete works.
- f) Final inspection - upon the practical completion of all civil works with all disturbed areas satisfactorily restored.

96. **Tip Dockets.** Tip Dockets identifying the type and quantity of waste disposed/recycled during construction are to be kept in accordance with the Site Waste Minimisation & Management Plan for spot inspections.
97. **Maintenance.** The area surrounding the construction site must be maintained to reduce the incidence of illegal dumping and management of litter from the site and workers associated with the site must be undertaken.
98. **Identification and removal of hazardous materials.** Any hazardous materials, including asbestos, must be identified before work commences and be removed in a safe manner.
99. **Contaminated soil.** All potentially contaminated soil excavated during construction work must be stockpiled in a secure area and be assessed and classified in accordance with the *Waste Classification Guidelines* (DECCW, 2009) before being transported from the site.
100. **Transportation of wastes.** All wastes must be transported in an environmentally safe manner to a facility or place that can lawfully be used as a waste facility for those wastes. Copies of the disposal dockets must be kept by the applicant for at least 3 years and be submitted to Council on request.

PRIOR TO OCCUPATION CERTIFICATE

An Occupation Certificate must be obtained from a Principal Certifier prior to commencement of occupation of any part of the development, or prior to the commencement of a change of use of a building.

Prior to issue, the Principal Certifier must ensure that all works are completed in compliance with the approved construction certificate plans and all conditions of this Development Consent.

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifier is responsible for determining compliance with conditions in this Part of the consent. Details to demonstrate compliance with all conditions, including plans, documentation, or other written evidence must be submitted to the Principal Certifier.

Conditions of Consent for LDA2018/0048 :-

101. **BASIX.** The submission of documentary evidence of compliance with all commitments listed in BASIX Certificate(s) numbered 8872783M, dated 18 December 2017.
102. **Landscaping.** All landscaping works approved by condition 1 are to be completed prior to the issue of the any **Occupation Certificate**.
103. **Fire safety matters.** At the completion of all works, a Fire Safety Certificate must be prepared, which references all the Essential Fire Safety Measures applicable and the relative standards of Performance (as per Schedule of Fire Safety Measures). This certificate must be prominently displayed in the building and copies must be sent to Council and the Fire and Rescue NSW.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of any Occupation Certificate.

Each year the Owners must send to the Council and the Fire and Rescue NSW an annual Fire Safety Statement which confirms that all the Essential Fire Safety Measures continue to perform to the original design standard.

104. **Sydney Water – Section 73 Compliance Certificate.** A compliance certificate must be obtained from Sydney Water, under Section 73 of the Sydney Water Act 1994. Sydney Water will determine the availability of water and sewer services, which may require extension, adjustment or connection to Sydney Water mains. A Section 73 Compliance Certificate must be completed before the issue of any Occupation Certificate. Sydney Water will assess the development and if required will issue a Notice of Requirements letter detailing all requirements that must be met. Applications can be made either directly to Sydney Water or through a Sydney Water accredited Water Servicing Coordinator.

Go to www.sydneywater.com.au/section73 or call 1300 082 746 to learn more about applying through an authorised WSC or Sydney Water.

105. **Public domain – work-as-executed plan.** A works as executed plan for works carried out in the public domain must be provided to and endorsed by Council prior to the issue of any **Occupation Certificate**.
106. **Public Domain Improvements and Infrastructure Works – Completion.** All public domain improvements and infrastructure works shall be completed to Council's satisfaction, in accordance with the approved public domain plans and at no cost to the Council, prior to the issue of any Occupation Certificate.
107. **Restoration – Supervising Engineer's Certificate.** Prior to the issue of any Occupation Certificate, the Applicant shall submit to Council a certificate from the Supervising Engineer confirming that the final restoration of disturbed road and footway areas for the purpose of connection to public utilities, including repairs of damaged infrastructure and replacement of any redundant vehicular crossings as a result of the construction works associated with this development site, have been completed in accordance with the Council's standards and specifications, and DCP2014 Part 8.5 *Public Civil Works*, or the Roads and Maritime Services' standards and specifications, where applicable.

Conditions of Consent for LDA2018/0048 :-

108. **Electricity accounts for new street lighting.** Prior to the issue of any Occupation Certificate, the Applicant shall liaise with Council's Public Domain Development Section regarding the setting up of the electricity account/s in order to energise the newly installed street lighting.
109. **Compliance Certificates – Street Lighting.** Prior to the issue of any Occupation Certificate, the Applicant shall submit to Council, a *Certificate of Compliance - Electrical Work (CCEW)* from the Electrical Contractor, and certification from a qualified Electrical Engineering consultant confirming that the street lighting in the public domain has been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications.
110. **Compliance Certificate – External Landscaping Works.** Prior to the issue of any Occupation Certificate, the Applicant shall submit to Council, certification from a qualified Landscape Architect confirming that the public domain landscaping works have been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications.
111. **Public Domain Works-as-Executed Plans.** To ensure the public infrastructure works are completed in accordance with the approved plans and specifications, and that the assets to be handed over to Council are accounted for inclusion in Council's Assets Register, Works-as-Executed Plans shall be submitted to Council for review and approval. The Works-as-Executed Plans are to be prepared on a copy of the approved plans and certified by a Registered Surveyor, and shall contain notations in red, all departures from the Council approved details. Any rectifications required by Council shall be completed by the Developer prior to the issue of any Occupation Certificate.
112. **Supervising Engineer Final Certificate.** Prior to the issue of any Occupation Certificate, the Applicant shall submit to Council, a Final Certificate from the Supervising Engineer confirming that the public domain works have been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications. The certificate shall include commentary to support any variations from the approved drawings.
113. **Post-Construction Dilapidation Report .** To ensure Council's infrastructures are adequately protected a post-construction dilapidation report on the existing public infrastructure in the vicinity of the completed development and along the travel routes of all construction vehicles, up to 100m either side of the development site, is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record of any observable defects to the following infrastructure where applicable.
- a. Road pavement,
 - b. Kerb and gutter,
 - c. Footpath,
 - d. Drainage pits,
 - e. Traffic signs,
 - f. Length of the stormwater improvement works. The location of any damage in the drainage line is to be recorded and the report details how this is to be rectified for Council's consideration and
 - g. Any other relevant infrastructure.

Conditions of Consent for LDA2018/0048 :-

The post construction dilapidation report is to clearly details the final condition of all property, infrastructure, natural and man-made features that were recorded in the pre-commencement dilapidation report. A copy of the report must be provided to Council, any other owners of public infrastructure and the owners of the affected adjoining and private properties, prior to the issue of any Occupation Certificate.

The report shall include summary statement/s comparing the pre and post construction conditions of the public infrastructure. The report is to be dated and submitted to, and accepted by Council's City Works Directorate, prior to issue of the Occupation Certificate. The report shall be used by Council to compare with the pre-construction dilapidation report, and to assess whether restoration works will be required prior to the issue of the Occupation Certificate.

All fees and charges associated with the review of the report shall be in accordance with Council's Schedule of Fees and Charges, and shall be paid at the time that the Dilapidation Report is submitted.

114. **Decommissioning of Ground Anchors.** Prior to the issue of any Occupation Certificate, the Applicant shall provide Council a certificate from a suitably qualified Structural or Geotechnical Engineer confirming that all temporary soil/ground anchors installed into the public road reserve, have been decommissioned and are not transferring any structural loads into the road reserve stratum.
115. **Final Inspection – Assets Handover** - For the purpose of the handover of the public infrastructure assets to Council, a final inspection shall be conducted in conjunction with Council's Engineer from City Works and Infrastructure Directorate following the completion of the external works. Defects found at such inspection shall be rectified by the Applicant prior to Council issuing the Compliance Certificate for the External Works. Additional inspections, if required, shall be subject to fees payable in accordance with Council's Schedule of Fees & Charges at the time.
- A minimum 48 hours' notice will be required when booking for the final inspection.
116. **Land Dedication.** Prior to the issue of any Occupation Certificate, a splay corner shall be created and dedicated to Council as public road near the intersection of Constitution Road and Bowden Street in order to provide a minimum 3.5m pedestrian thoroughfare. The dimensions shall be as shown on the approved by RMS drawings for the intersection of Bowden Street and Constitution Road. Evidence regarding effective registration of the land dedication shall be submitted to Council and the PCA prior to the issue of the Occupation Certificate.
117. **Design Verification.** Prior to an Occupation Certificate being issued to authorise a person to commence occupation or use of a residential flat building, the Principal Certifying Authority (PCA) is to be provided with design verification from a qualified designer. The statement must include verification from the qualified designer that the residential flat development achieves the design quality of the development as shown on plans and specifications in respect of the relevant Construction Certificate issued, having regard to the design quality principles set out in Part 2 of State Environmental Planning Policy No. 65 – Apartment Design Guide. This condition is imposed in accordance with Clause 154A of the Environmental Planning and Assessment Regulation 2000.

Conditions of Consent for LDA2018/0048 :-

118. **Compliance Certificate – External Works and Public Infrastructure Restoration.** Prior to the issue of any Occupation Certificate, a compliance certificate shall be obtained from Council's City Works Directorate confirming that all works in the road reserve including all public domain improvement works and restoration of infrastructure assets that have been dilapidated as a result of the development works, have been completed to Council's satisfaction and in accordance with the Council approved drawings. The applicant shall be liable for the payment of the fee associated with the issuing of this certificate.
119. **Stormwater Management - Work-as-Executed Plan.** A Work-as-Executed plan (WAE) of the as constructed Stormwater Management System must be submitted with the application for an Occupation Certificate. The WAE must be prepared and certified (signed and dated) from a suitably qualified engineer (registered on the NER of Engineers Australia) certifying the drawings are a true and accurate representation of the constructed works and is to clearly show the constructed stormwater drainage system (including any onsite detention, pump/ sump, charged/ siphonic and onsite disposal/ absorption system) and finished surface levels which convey stormwater runoff.
120. **Stormwater Management – Positive Covenant(s).** A Positive Covenant must be created on the property title(s) pursuant to the relevant section of the Conveyancing Act (1919), providing for the ongoing maintenance of the pump/ sump and WSUD components incorporated in the approved Stormwater Management system. This is to ensure that the drainage system will be maintained and operate as approved throughout the life of the development, by the owner of the site(s). The terms of the instrument are to be in accordance with the Council's standard terms for such systems, as specified in City of Ryde DCP 2014 - Part 8.4 (Title Encumbrances) - Section 7 and to the satisfaction of Council. The positive covenant must be registered on the title prior to the release of any Occupation Certificate for development works for which the system(s) serve.
121. **Stormwater Management – Maintenance program.** To ensure the approved onsite detention system and WSUD measures function as designed for the ongoing life of the development, without imposition on the public domain, the applicant is to prepare a drainage system maintenance plan (DSMP) which is to contain;
- (a) The DSMP is to incorporate a master schedule and plan identifying the location of all stormwater components crucial to the efficient operation of the trunk drainage system on the development lot. This is to include (but not be limited to) pump/sump systems, WSUD components and all onsite detention systems. The master plan is also to contain the maintenance schedule for each component.
 - (b) The DSMP is also to include safe work method statements relating to access and maintenance of each component in the maintenance schedule.
 - (c) Signage is to be placed in vicinity of each component, identifying the component to as it is referred in the DSMP (eg. OSD – 1), the reference to the maintenance work method statement and maintenance routine schedule.
 - (d) Designate areas inside the property in which the maintenance operation is to be undertaken for each component. Maintenance from the road reserve or public domain is not accepted. Areas are to be demarcated if required.
 - (e) Locate a storage area for maintenance components / tools to be stored on site. The location is to be recorded in the DSMP.

The DSMP is to be prepared by a suitably qualified and practising drainage engineer in co-operation with a workplace safety officer (or similar qualified personal) and all

Conditions of Consent for LDA2018/0048 :-

signage / linemarkings are to be implemented prior to the issue of any Occupation Certificate.

122. **Engineering Compliance Certificates.** To ensure that all engineering facets of the development have been designed and constructed to the appropriate standards, Compliance Certificates must be obtained for the following items and are to be submitted to the Accredited Certifier prior to the release of any Occupation Certificate. All certification must be issued by a qualified and practising civil engineer having experience in the area respective of the certification unless stated otherwise.
- a) Confirming that all components of the parking areas contained inside the site comply with the relevant components of AS 2890 and Council's DCP 2014 Part 9.3 (Parking Controls).
 - b) Confirming that the Stormwater Management system (including any constructed ancillary components such as onsite detention) servicing the development complies with Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures, and has been constructed to function in accordance with all conditions of this consent relating to the discharge of stormwater from the site.
 - c) Confirming that after completion of all construction work and landscaping, all areas adjacent the site, the site drainage system (including any on-site detention system), and the trunk drainage system immediately downstream of the subject site (next pit), have been cleaned of all sand, silt, old formwork, and other debris.
 - d) Confirming that the connection of the site drainage system to the trunk drainage system complies with Section 4.7 of AS 3500.3 - 2003 (National Plumbing and Drainage Code), the relevant sections of the Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures and any requirements of Council pending on site conditions.
 - e) Confirming that the footings adjacent to drainage easements are founded below the zone of influence of this infrastructure, in accordance with Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures.
 - f) Confirming that erosion and sediment control measures were implemented during the course of construction and were in accordance with the manual *"Managing Urban Stormwater: Soils and Construction"* by the NSW Department – Office of Environment and Heritage and Council's DCP 2014 Part 8.1 (Construction Activities).
 - g) Certification from a suitably qualified structural or geotechnical engineer confirming that any temporary soil/ rock anchors installed into public roadway, have been de-stressed and are no longer providing any structural support.
 - h) Certification from a suitably qualified geotechnical engineer confirming that the Geotechnical Monitoring Program (GMP) was implemented throughout the course of construction and that all structures supporting neighbouring property have been designed and constructed to provide appropriate support of the neighbouring property and with consideration to any temporary loading conditions that may occur on that site, in accordance with the relevant Australian Standard and building codes.
 - i) Compliance certificate from Council confirming that all external works in the public road reserve and alteration to Council assets located in private property have been completed to Council's satisfaction.
123. **Compliance Certificate.** The applicant shall comply with the recommendations made in the Flood Impact Statement prepared by Australian Consulting Engineers, Issue C dated November 2018. A certificate from a suitably qualified Engineer shall

Conditions of Consent for LDA2018/0048 :-

be submitted to the Certifying Authority stating compliance with these recommendations **prior to the issue of the Occupation Certificate.**

124. **On-Site Stormwater Detention System - Marker Plate.** To ensure the constructed On-site detention will not be modified, a marker plate is to be fixed to each on-site detention system constructed on the site. The plate construction, wordings and installation shall be in accordance with Council's DCP 2014 Part 8.2 (Stormwater and Floodplain Management) and associated annexures. The plate may be purchased from Council's Customer Service Centre at Ryde Civic Centre (Devlin Street, Ryde).
125. **Signage and Linemarking – External.** A plan demonstrating the proposed signage and line marking within Council's Public Domain shall be prepared by a suitably qualified person and submitted to and approved by the Ryde Traffic Committee prior to the issue of any Occupation Certificate.
- Note:** The applicant is advised that the plan will require approval by the Ryde Traffic Committee if the proposal requires change in existing parking conditions and hence, adequate time should be allowed for this process
126. **Signage and Linemarking – Implementation.** The applicant is to install all signage and linemarking, as per the plan approved by the Ryde Traffic Committee. These works are to be undertaken prior to the issue of any Occupation Certificate.
127. **Lots Consolidation.** 102 & 104 Bowden Street Meadowbank, being Lot 1 in DP 730371 and SP 20107, respectively are to be consolidated to one lot.
128. **CCTV Cameras.** CCTV cameras will be required to be installed throughout the site. The cameras should include the foyer area to the buildings including the area around the mail boxes. The cameras should also monitor the 50 metre vicinity outside the building including, but not limited to, the footpath area in front of the premises. CCTV cameras should also cover any communal areas, lifts, public spaces, pedestrian link and the basement car parks, including the entry and exit points to the car park. Recordings should be made twenty four (24) hours a day seven (7) days a week.

As a minimum, CCTV cameras at entry and exit points to the premises **MUST** record footage of a nature and quality in which it can be used to identify a person recorded by the camera. All other cameras **MUST** record footage of a nature and quality in which it can be used to recognise a person recorded by the camera. The time and date must automatically be recorded on all recordings made whilst it is recording. All recordings are to be kept for a minimum period of thirty (30) days before they can be reused or destroyed.

If requested by police, the applicant is to archive any recording until such time as they are no longer required. Recordings are to be made in a common media format such as Windows Media Player or similar, or should be accompanied by applicable viewing software to enable viewing on any windows computer.

The CCTV control system should be located within a secured area of the premise and only accessible by authorised personnel. If the CCTV system is not operational, immediate steps are to be taken by the applicant to ensure that it is returned to a fully operational condition as soon as possible.

Conditions of Consent for LDA2018/0048 :-

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

129. **Car parking security.** Vehicular entry to residential parking and visitor's parking areas is to be through a secured roller shutter with an intercom system for visitor's access. The doors are to be controlled by locksets such as remote or card operating electronic lock sets. The phasing of the roller door needs to minimise the opportunity for unauthorised pedestrian access after a vehicle enters/exits the car park. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

130. **Graffiti.** All surfaces on the street level that are not glass should use graffiti resistant paints and/or other surfaces that discourage graffiti. A maintenance policy should be established for graffiti to be painted over within two a week of the graffiti.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

131. **Security.** To enhance the physical security of doors, all glass doors are to be laminated and the main entry/exit doors to individual units on the ground floor, including balcony doors and fire exit doors to the development are to be fitted with a single cylinder lockset (Australian and New Zealand Standard - Lock Sets), which comply with the Building Code of Australia. Windows to individual units on the ground floor should also be fitted with key operated locksets (Australia and New Zealand Standard - Lock Sets) to restrict unauthorized access to the unit.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

132. **Intercom System.** Intercom facilities should be incorporated into these entry/exit points to enable residents to communicate and identify with people prior to admitting them to the development. An auxiliary lock set should also be incorporated into the design of each of the entry/exit points to enable emergency services to access the development particularly in emergency situations.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

133. **Balcony doors to units.** Balcony doors to units are to be fitted with single cylinder locksets (Australian and New Zealand Standard – Lock Sets) to restrict unauthorised access to units. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

134. **Lift access and security.** Electronic access controls are to be installed on the lift. The equipment should include card readers to restrict access to the level a resident resides on, to the car parking levels and to the Ground Floor. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

135. **Acoustic certification.** A report from a qualified acoustical consultant demonstrating compliance with the relevant noise criteria must be submitted to the Principal Certifying Authority before the issue of an Occupation Certificate.

Conditions of Consent for LDA2018/0048 :-

136. **Disabled access.** Access for disabled persons shall be provided in the building or portion of the building in accordance with the applicable legislation and the requirements set out in AS 1428.1. Documentary evidence and certification is to be obtained from a suitable qualified person confirming that the development meets these requirements in accordance with this consent, is to be provided to the PCA prior to the issue of any Occupation Certificate.
137. **Mechanical Ventilation.** Where any mechanical ventilation systems have been installed, a certificate from a professional mechanical services engineer certifying that the systems comply with the approved plans and specifications must be submitted to the Principal Certifying Authority before the issue of an Occupation Certificate.

OPERATIONAL CONDITIONS

The conditions in this Part of the consent relate to the on-going operation of the development and shall be complied with at all times.

138. **Service Bay Management.** To ensure the efficient use of the Service Bay located on Stage 7 of the Meadowbank lot (37 Nancarrow Avenue) and prevent abuse of the Service Bay by the public, the Service Bay is to be restricted to public access (eg by way of a removable bollard) and the strata plan of management must include a mechanism which requires the scheduled use of the Service Bay by occupants of the development. The Service Bay schedule is to be overseen by the strata manager or caretaker of the development and its implementation is to be clearly displayed in common areas to ensure occupants are aware of the schedule system. The schedule is also to be mindful of any operating times required for waste or essential service access which potentially may utilise this area.
139. **Drainage System Maintenance Plan Implementation.** The stormwater management system components are to be maintained for the ongoing life of the development by the strata management/ owners corporation, as per the details in the approved Drainage System Maintenance Plan (DSMP).
140. **Parking Allocation.** Both the owner and occupier of the development must provide and maintain the minimum parking allocation as follows;
- A maximum of 50 residential spaces
 - A minimum of 9 visitor spaces,
 - A minimum 6 bicycle parking spaces.
 - A minimum of 1 motorbike space.
141. **Stormwater Management – Implementation of maintenance program.** The stormwater management system components are to be maintained for the ongoing life of the development by the strata management/ owners corporation, as per the details in the approved drainage system maintenance plan (DSMP).
142. **Universal Key.** Where there is a lockable door to access a bin room or hard-waste storage room, the universal Council key should be installed so the contractor can access the room for servicing bins or collect the household clean up items.
143. **Waste Collection.** Council does not support the use of private contractors for the collection of domestic waste. All domestic waste will be collected by the Council waste collection contractor.

Conditions of Consent for LDA2018/0048 :-

144. **Waste Collection/Transfer.** Staff or contractors must be employed to take the waste containers from garbage and recycling room to the container emptying point for servicing and to return the containers to the garbage room after servicing. The transferring of the waste containers to the emptying point are to be conducted in a safe and hygienic manner. The material is to be placed in such a manner so that it will not impede the access to any bins from a side arm waste collection vehicle or pedestrian access”
145. **Letterboxes and street/house numbering.** All letterboxes and house numbering are to be designed and constructed to be accessible from the public way. Council must be contacted in relation to any specific requirements for street numbering.
146. **Offensive noise** - The use of the premises must not cause the emission of 'offensive noise' as defined in the *Protection of the Environment Operations Act 1997*.
147. **Noise and vibration from plant or equipment** - Unless otherwise provided in this Consent, the operation of any plant or equipment installed on the premises must not cause:
- (a) The emission of noise that exceeds the background noise level by more than 5dBA when measured at, or computed for, the most affected point, on or within the boundary of the most affected receiver. Modifying factor corrections must be applied for tonal, impulsive, low frequency or intermittent noise in accordance with the *New South Wales Industrial Noise Policy* (EPA, 2000).
 - (b) An internal noise level in any adjoining occupancy that exceeds the recommended design sound levels specified in Australian/New Zealand Standard AS/NZS 2107:2000 *Acoustics – Recommended design sound levels and reverberation times for building interiors*.
 - (c) The transmission of vibration to any place of different occupancy.

Advisory Note:

Temporary dewatering of an amount above 3 ML may require a water licence to be obtained from DPI Water before construction commences.

End of consent



Development Consent

Applicant: Flow Systems Operations Pty Ltd
ATTN: Marcelo Sales
PO Box R455
ROYAL EXCHANGE NSW 1125

Consent No: LDA2017/0426

Consent Date: 13 March 2018

Valid until: 13 March 2023

The City of Ryde, as the consent authority under the provisions of the Environmental Planning and Assessment Act, 1979 hereby consents to the development as follows:

Property: 10 Nancarrow Ave Ryde Lot 12 DP 7130

Development: Fitout and use of 3 basement levels in existing residential flat building as a water recycling facility.

subject to the conditions 1 to 47 specified in this consent.

You are advised that failure to observe any condition of approval set out in the consent is an offence and legal proceedings may be instituted by Council.

This Consent does not guarantee compliance with the Disability Discrimination Act and you should, therefore, investigate your liability under the Act.

You are advised of your right of appeal to the Land and Environment Court under Section 8.7 of the Environmental Planning & Assessment Act and your right to request a review of the determination to Council under Division 8.2 of the Environmental Planning & Assessment Act within 6 months after you have received the Consent.

Sandra Bailey
Senior Coordinator Major Development

The fees quoted at the time of issue of this Consent may be subject to variation. Council's annual fees and charges are published in the Management Plan. To confirm fees please contact Customer Service on 9952-8222.

Conditions of Consent for LDA2017/0426 :-

GENERAL

The following conditions of consent included in this Part identify the requirements, terms and limitations imposed on this development.

1. **Approved Plans/Documents.** Except where otherwise provided in this consent, the development is to be carried out strictly in accordance with the following plans (stamped approved by Council) and support documents:

Document Description	Date	Plan No/Reference
General arrangement - overview	9/11/17	9266-LWC Revision 1 Sheet 1
General arrangement – B1 Level	11/9/17	9266-LWC Revision 1 Sheet 2
General Arrangement – Section view A-A	11/9/17	9266-LWC Revision 1 Sheet 3
General Arrangement – B2 Level	11/9/17	9266-LWC Revision 1 Sheet 4
Lower Basement Floor Plan	24/10/17	DA-110-000
Basement Floor Plan	24/10/17	DA-110-001
Stage 3 Section 7	27/10/17	DA-310-005

2. **Building Code of Australia.** All building works approved by this consent must be carried out in accordance with the requirements of the Building Code of Australia.
3. **Hours of work.** Building activities (including demolition) may only be carried out between 7.00am and 7.00pm Monday to Friday (other than public holidays) and between 8.00am and 4.00pm on Saturday. No building activities are to be carried out at any time on a Sunday or a public holiday.
4. **Public space.** The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances, without prior approval from Council.
5. **Design and Construction Standards.** All engineering plans and work inside the property shall be carried out in accordance with the requirements of the relevant Australian Standard. All Public Domain works or modification to Council infrastructure which may be located inside the property boundary, must be undertaken in accordance with Council's 2014 DCP Part 8.5 (Public Domain Works), except otherwise as amended by conditions of this consent.
6. **Service Alterations.** All mains, services, poles, etc., which require alteration shall be altered at the applicant's expense.
7. **Restoration.** Public areas must be maintained in a safe condition at all times. Restoration of disturbed road and footway areas for the purpose of connection to public utilities will be carried out by Council following submission of a permit application and payment of appropriate fees. Repairs of damage to any public stormwater drainage facility will be carried out by Council following receipt of payment. Restoration of any disused gutter crossings will be carried out by Council following receipt of the relevant payment.

20 MAR 2018



Flow Systems Operations Pty Ltd
ATTN: Marcelo Sales
PO Box R455
ROYAL EXCHANGE NSW 1125

15 March 2018

Dear Sir

Address: 10 Nancarrow Ave Ryde
Local Development Application No: LDA2017/0426

Please find attached your approved Development Consent No: LDA2017/0426.

Development Consent is not approval to commence building work.

Before any construction works commence you must apply for a Construction Certificate. You can apply to Council or an Accredited Certifier. All plans and information which form part of your Construction Certificate application must comply with the conditions of Development Consent.

It is the responsibility of the applicant to carefully read all conditions of Development Consent prior to making application for a Construction Certificate.

Should you have any further questions please contact the Customer Service Centre on 9952 8222.

Yours sincerely



Sandra Bailey
Senior Coordinator Major Development



Development Consent

Applicant: Flow Systems Operations Pty Ltd
ATTN: Marcelo Sales
PO Box R455
ROYAL EXCHANGE NSW 1125

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Sandra Bailey
Senior Coordinator Major Development

Conditions of Consent for LDA2017/0426 :-

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Lower Basement Floor Plan	24/10/17	DA-110-000
Basement Floor Plan	24/10/17	DA-110-001
Stage 3 Section 7	27/10/17	DA-310-005

2. **Building Code of Australia.** All building works approved by this consent must be carried out in accordance with the requirements of the Building Code of Australia.
3. **Hours of work.** Building activities (including demolition) may only be carried out between 7.00am and 7.00pm Monday to Friday (other than public holidays) and between 8.00am and 4.00pm on Saturday. No building activities are to be carried out at any time on a Sunday or a public holiday.
4. **Public space.** The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances, without prior approval from Council.
5. **Design and Construction Standards.** All engineering plans and work inside the property shall be carried out in accordance with the requirements of the relevant Australian Standard. All Public Domain works or modification to Council infrastructure which may be located inside the property boundary, must be undertaken in accordance with Council's 2014 DCP Part 8.5 (Public Domain Works), except otherwise as amended by conditions of this consent.
6. **Service Alterations.** All mains, services, poles, etc., which require alteration shall be altered at the applicant's expense.
7. **Restoration.** Public areas must be maintained in a safe condition at all times. Restoration of disturbed road and footway areas for the purpose of connection to public utilities will be carried out by Council following submission of a permit application and payment of appropriate fees. Repairs of damage to any public stormwater drainage facility will be carried out by Council following receipt of payment. Restoration of any disused gutter crossings will be carried out by Council following receipt of the relevant payment.

Conditions of Consent for LDA2017/0426 :-

8. **Road Opening Permit.** In the event there being any works being undertaken by others (not the Network Operator under the WICA License) in the road reserve, the contractor undertaking the works shall apply for a road-opening permit and comply with the terms of the Permit. Additional road opening permits and fees may be necessary where there are connections to public utility services (e.g. telephone, electricity or gas) required within the road reserve.

PRIOR TO CONSTRUCTION CERTIFICATE

A Construction Certificate must be obtained from a Principal Certifying Authority to carry out the relevant building works approved under this consent. All conditions in this Section of the consent must be complied with before a Construction Certificate can be issued.

Council Officers can provide these services and further information can be obtained from Council's Customer Service Centre on 9952 8222.

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifying Authority is responsible for determining compliance with the conditions in this Section of the consent.

Details of compliance with the conditions, including plans, supporting documents or other written evidence must be submitted to the Principal Certifying Authority.

9. **Compliance with Australian Standards.** The development is required to be carried out in accordance with all relevant Australian Standards. Details demonstrating compliance with the relevant Australian Standard are to be submitted to the Principal Certifying Authority prior to the issue of the **Construction Certificate**.
10. **Security deposit.** The Council must be provided with security for the purposes of section 80A(6) of the *Environmental Planning and Assessment Act 1979* in a sum determined by reference to Council's Management Plan prior to the release of the **Construction Certificate**. (Category: other building with no delivery of bricks or concrete or machine excavation)
11. **Fees.** The following fees must be paid to Council in accordance with Council's Management Plan prior to the release of the **Construction Certificate**:
- (a) Infrastructure Restoration and Administration Fee
 - (b) Enforcement Levy
12. **Long Service Levy.** Documentary evidence of payment of the Long Service Levy under Section 34 of the Building and Construction Industry Long Service Payments Act 1986 is to be submitted to the Principal Certifying Authority prior to the issuing of the **Construction Certificate**.

PRIOR TO COMMENCEMENT OF CONSTRUCTION

Prior to the commencement of any demolition, excavation, or building work the following conditions in this Part of the Consent must be satisfied, and all relevant requirements complied with at all times during the operation of this consent.

Conditions of Consent for LDA2017/0426 :-

13. Site Sign

- (a) A sign must be erected in a prominent position on site, prior to the commencement of construction:
 - (i) showing the name, address and telephone number of the Principal Certifying Authority for the work,
 - (ii) showing the name of the principal contractor (if any) or the person responsible for the works and a telephone number on which that person may be contacted outside working hours, and
 - (iii) stating that unauthorised entry to the work site is prohibited.
- (b) Any such sign must be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

14. Notice of Intention to Commence Works in the Public Domain area– Prior to commencement of the works within the Public Domain area (roads and footpaths), a *Notice of Intention to Commence Public Domain Works* shall be submitted to Council's City Works and Infrastructure Directorate. This Notice shall include the name of the Contractor who will be responsible for the construction works, and the name of the Engineer who will be responsible for the construction supervision, and also obtain all Road Activity Permits required for the works.

Note: Copies of a number of documents are required to be lodged with the Notice; no fee is chargeable for the lodgement of the Notice.

15. Pre-Construction Dilapidation Report - To ensure Council's infrastructures are adequately protected a pre-construction dilapidation report on the existing public infrastructure in the vicinity of the proposed development and along the travel routes of all construction vehicles is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record of any observable defects to the following infrastructure where applicable.

- (a) Road pavement,
- (b) Kerb and gutter,
- (c) Footpath,
- (d) Drainage pits,
- (e) Traffic signs, and
- (f) Any other relevant infrastructure.

The report is to be dated and submitted to, and accepted by Council's City Works & Infrastructure Directorate, prior to any work commencing.

All fees and charges associated with the review of this report shall be in accordance with Council's Schedule of Fees and Charges and shall be paid at the time that the Dilapidation Report is submitted.

16. Road Activity Permits - To carry out work in, on or over a public road, the Consent of Council is required as per the *Roads Act 1993*. Prior to the commencement of the relevant works and considering the lead times required for each application, permits for the following activities, as required and as specified in the form "*Road Activity Permits Checklist*" (available from Council's website) are to be obtained and copies submitted to Council with the *Notice of Intention to Commence Public Domain Works*.

Conditions of Consent for LDA2017/0426 :-

- a) Road Use Permit - The applicant shall obtain a Road Use Permit where any area of the public road or footpath is to be occupied as construction workspace, other than activities covered by a Road Opening Permit or if a Work Zone Permit is not obtained. The permit does not grant exemption from parking regulations.
 - b) Work Zone Permit - The applicant shall obtain a Work Zone Permit where it is proposed to reserve an area of road pavement for the parking of vehicles associated with a construction site. Separate application is required with a Traffic Management Plan for standing of construction vehicles in a trafficable lane. **A Roads and Maritime Services Road Occupancy Licence shall be obtained for State Roads.**
 - c) Road Opening Permit - The applicant shall apply for a road-opening permit and pay the required fee where a new pipeline is to be constructed within or across the road pavement or footpath. Additional road opening permits and fees are required where there are connections to public utility services (e.g. telephone, telecommunications, electricity, sewer, water or gas) within the road reserve. No opening of the road or footpath surface shall be carried out without this permit being obtained and a copy kept on the site.
 - d) Elevated Tower, Crane or Concrete Pump Permit - The applicant shall obtain an Elevated Tower, Crane or Concrete Pump Permit where any of these items of plant are placed on Council's roads or footpaths. This permit is in addition to either a Road Use Permit or a Work Zone Permit.
 - e) Crane Airspace Permit - The applicant shall obtain a Crane Over Airspace Permit where a crane on private land is operating in the air space of a Council road or footpath. Approval from the Roads and Maritime Services for works on or near State Roads is required prior to lodgement of an application with Council. A separate application for a Work Zone Permit is required for any construction vehicles or plant on the adjoining road or footpath associated with use of the crane.
 - f) Hoarding Permit - The applicant shall obtain a Hoarding Permit and pay the required fee where erection of protective hoarding along the street frontage of the property is required. The fee payable is for a minimum period of 6 months and should the period is extended an adjustment of the fee will be made on completion of the works. The site must be fenced to a minimum height of 1.8 metres prior to the commencement of construction and throughout demolition and/or excavation and must comply with WorkCover (New South Wales) requirements.
 - g) Skip Bin on Nature Strip - The applicant shall obtain approval and pay the required fee to place a Skip Bin on the nature strip where it is not practical to locate the bin on private property. No permit will be issued to place skips.
- 17. Temporary Footpath Crossing** - A temporary footpath crossing, if required, must be provided at the disturbed public footpath areas. It is to be 4 metres wide, made out of sections of hardwood with chamfered ends and strapped with hoop iron, and a temporary gutter crossing must be provided.

Conditions of Consent for LDA2017/0426 :-

DURING CONSTRUCTION

Unless otherwise specified, the following conditions in this Part of the consent must be complied with at all times during the construction period. Where applicable, the requirements under previous Parts of the consent must be implemented and maintained at all times during the construction period.

18. **Critical stage inspections.** The person having the benefit of this consent is required to notify the Principal Certifying Authority during construction to ensure that the critical stage inspections are undertaken, as required under clause 162A(4) of the *Environmental Planning and Assessment Regulation 2000*.
19. **Noise from construction work.** All feasible and reasonable measures must be implemented to minimise the emission of noise from construction work.
20. **Construction materials.** All materials associated with construction must be retained within the site.
21. **Site Facilities**
The following facilities must be provided on the site:
 - (a) toilet facilities in accordance with Safework NSW requirements, at a ratio of one toilet per every 20 employees, and
 - (b) a garbage receptacle for food scraps and papers, with a tight fitting lid.
22. **Site maintenance**
The applicant must ensure that:
 - (a) building materials and equipment are stored wholly within the work site unless an approval to store them elsewhere is held;
 - (b) the site is clear of waste and debris at the completion of the works.
23. **Traffic Management.** Any traffic management procedures and systems must be in accordance with AS 1742.3 1996 and City of Ryde, Development Control Plan 2014: - Part 8.1; Construction Activities. This condition is to ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems.
24. **Plumbing and drainage work** - All plumbing and drainage work must be carried out in accordance with the requirements of NSW Fair Trading.

PRIOR TO OCCUPATION CERTIFICATE

An Occupation Certificate must be obtained from a Principal Certifying Authority prior to commencement of occupation of any part of the development, or prior to the commencement of a change of use of a building.

Prior to issue, the Principal Certifying Authority must ensure that all works are completed in compliance with the approved construction certificate plans and all conditions of this Development Consent.

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifying Authority is responsible for determining compliance with conditions in this Part of the consent. Details to demonstrate compliance with all conditions, including

Conditions of Consent for LDA2017/0426 :-

plans, documentation, or other written evidence must be submitted to the Principal Certifying Authority.

25. Restoration. Public areas must be maintained in a safe condition at all times.

Restoration of disturbed road and footway areas for the purpose of connection to public utilities will be carried out by Council following submission of a permit application and payment of appropriate fees. Repairs of damage to any public infrastructure will be carried out by Council following receipt of payment. Restoration of any disused gutter crossings will be carried out by Council following receipt of the relevant payment.

26. Post-Construction Dilapidation Report – To ensure Council's infrastructures are adequately protected a post-construction dilapidation report on the existing public infrastructure in the vicinity of the completed development and along the travel routes of all construction vehicles is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record of any observable defects to the following infrastructure where applicable.

- (a) Road pavement,
- (b) Kerb and gutter,
- (c) Footpath,
- (d) Drainage pits,
- (e) Traffic signs, and
- (f) Any other relevant infrastructure.

The report shall include summary statement/s comparing the pre and post construction conditions of the public infrastructure. The report is to be dated and submitted to, and accepted by Council's City Works and Infrastructure Directorate, prior to issue of the Occupation Certificate. The report shall be used by Council to compare with the pre-construction dilapidation report, and to assess whether restoration works will be required prior to the issue of the Occupation Certificate.

All fees and charges associated with the review of the report shall be in accordance with Council's Schedule of Fees and Charges, and shall be paid at the time that the Dilapidation Report is submitted.

OPERATIONAL CONDITIONS

The conditions in this Part of the consent relate to the on-going operation of the development and shall be complied with at all times.

27. Water Industry Competition Act 2006 - The applicant must obtain a network operator's licence under the Water Industry Competition Act 2006 to construct, maintain and operate the water recycling facility and a copy of the licence must be submitted to Council before the authorised activities are carried out.

28. Quality of recycled water - All recycled water supplied to customers must be suitable for its intended use.

29. Labelling of recycled water infrastructure - All recycled water storage tanks and supply outlets must be appropriately labelled to prevent accidental misuse of the recycled water.

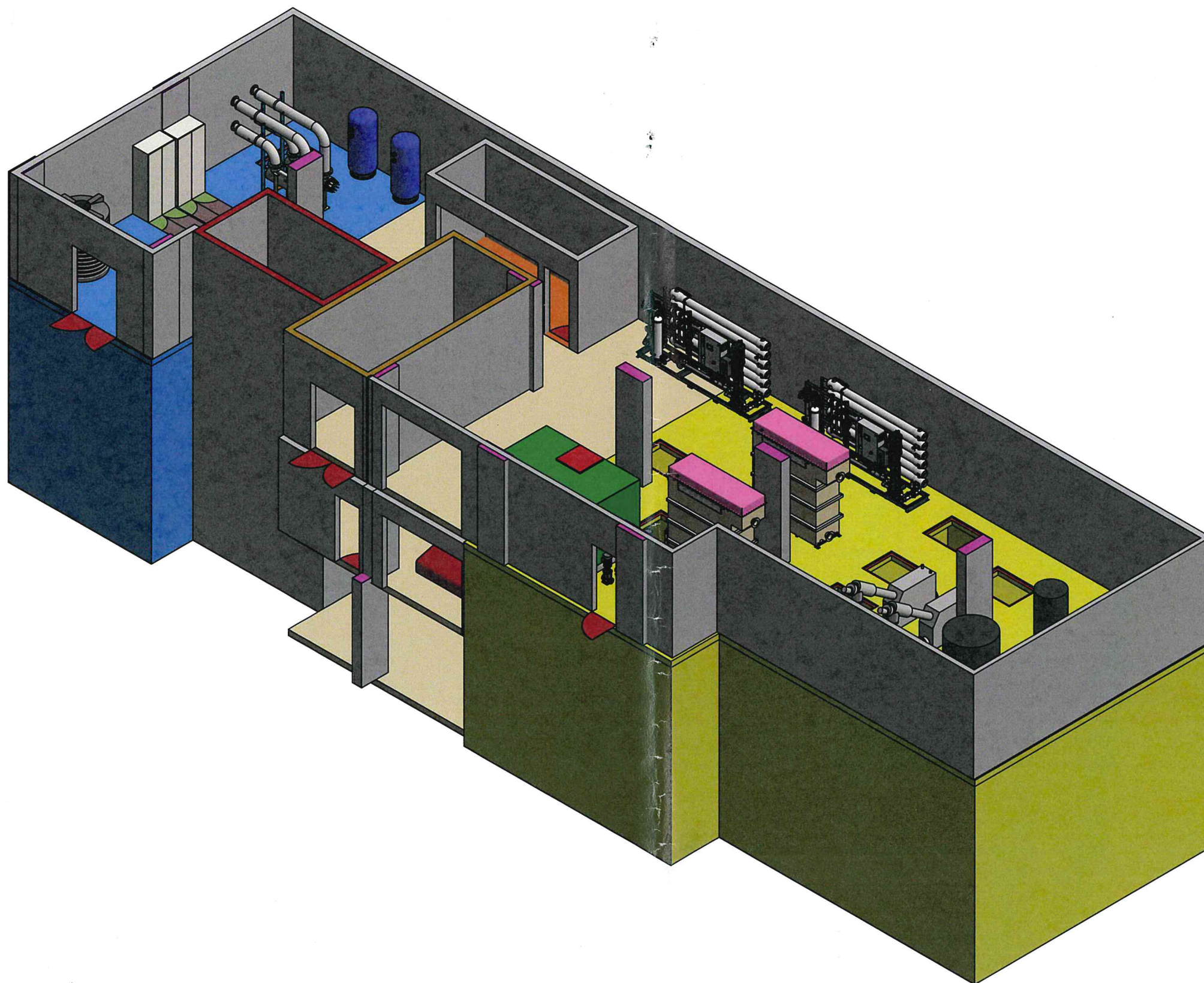
Conditions of Consent for LDA2017/0426 :-

30. **Trade wastewater from retail and commercial premises** - All trade wastewater from the retail and commercial premises must bypass the facility and be discharged to Sydney Water's sewerage system.
31. **Disposal of excess sewage** - All sewage not required to produce recycled water or that is unable to be accepted by the facility must be discharged to Sydney Water's sewerage system by gravity flow.
32. **Disposal of excess or unsuitable recycled water** - All excess recycled water or recycled water that is unsuitable for use must be discharged to Sydney Water's sewerage system by gravity flow.
33. **Supply of potable water instead of recycled water** - If the facility is unable to supply recycled water, potable water must be supplied from the town water supply.
34. **Storage of hazardous chemicals** - The storage of hazardous chemicals must comply with the requirements of the *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2017*.
35. **Bunding of above ground storage tanks** - All above ground liquid storage tanks must be banded to prevent the escape of spills or leaks.
36. **Construction of tank bunds** - All tank bunds must be designed and constructed in accordance with the following requirements:
 - (a) The bund must have a capacity of at least 110% of the largest tank plus the volume displaced by any additional tanks within the banded area.
 - (b) The walls and floor of the bund must be constructed of materials impervious to the contents of any container within the bund and be structurally adequate to contain any liquid spilled within the bund.
 - (c) A collection sump must be provided in the floor of the bund to facilitate the removal of liquids and the floor of the bund graded to the sump.
 - (d) Drain valves must not be provided in the bund.
 - (e) Pipework from the enclosed tanks and any associated pumps must pass over the bund walls.
 - (f) Hose couplings for tanks enclosed within the bund must be located so that leaks or spills are contained within the bund.
 - (g) The bund must be roofed where practicable to prevent the entry of rainwater.
37. **Storage and disposal of wastes** - All wastes generated on the premises must be stored and disposed of in an environmentally acceptable manner.
38. **Disposal of liquid wastes** - All liquid wastes generated on the premises must be treated and discharged to the sewerage system in accordance with the requirements of Sydney Water or be transported to a liquid waste facility for recycling or disposal.

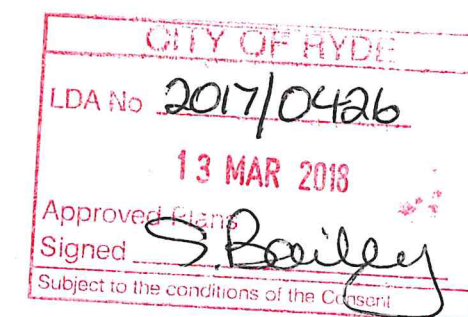
Conditions of Consent for LDA2017/0426 :-

39. **Trade waste permit** - The applicant must obtain a Trade Waste Permit from Sydney Water Corporation before discharging any trade wastewater to the sewerage system.
40. **Emissions to atmosphere** - The operation of the premises must not result in the emission of odours or other air impurities that are a nuisance or danger to health.
41. **Exhaust air discharge vents** - All exhaust air discharge vents must be designed and located so that no nuisance or danger to health will be created.
42. **Offensive noise** - The operation of the premises must not result in the emission of 'offensive noise' as defined in the *Protection of the Environment Operations Act 1997*.
43. **Noise and vibration from plant or equipment** - The operation of any plant or equipment installed on the premises must not cause:
- (a) The emission of noise that exceeds the background noise level by more than 5dBA when measured at, or computed for, the most affected point, on or within the boundary of the most affected receiver. Modifying factor corrections must be applied for tonal, impulsive, low frequency or intermittent noise in accordance with the *New South Wales Industrial Noise Policy* (EPA, 2000).
 - (b) An internal noise level in any adjoining occupancy that exceeds the recommended design sound levels specified in Australian/New Zealand Standard AS/NZS 2107:2000 *Acoustics – Recommended design sound levels and reverberation times for building interiors*.
 - (c) The transmission of vibration to any place of different occupancy.
44. **Clean water only to stormwater system** - Only clean unpolluted water is permitted to enter Council's stormwater drainage system.
45. **Clean-up materials to be kept on premises** - An adequate supply of suitable clean up materials must be kept on the premises for cleaning up accidental spills.
46. **Cleaning wastes and spills** - All cleaning wastes and spills must be collected and disposed of in an environmentally acceptable manner.
47. **Duty to notify pollution incidents** - Pollution incidents causing or threatening harm to the environment must be reported immediately to all relevant authorities in accordance with Section 148 of the *Protection of the Environment Operations Act 1997*.

End of consent



GENERAL ARRANGEMENT - OVERVIEW



DATE	REV	AMENDMENT	BY	CHKD	DATE	REV	AMENDMENT	BY	CHKD
22.09.17	2	REVISED CONCEPT DESIGN	JA	JH					
11.09.17	1	CONCEPT DESIGN	JA	JH					
23.03.15	0	PRELIMINARY ISSUE	JA	MD					

NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRES

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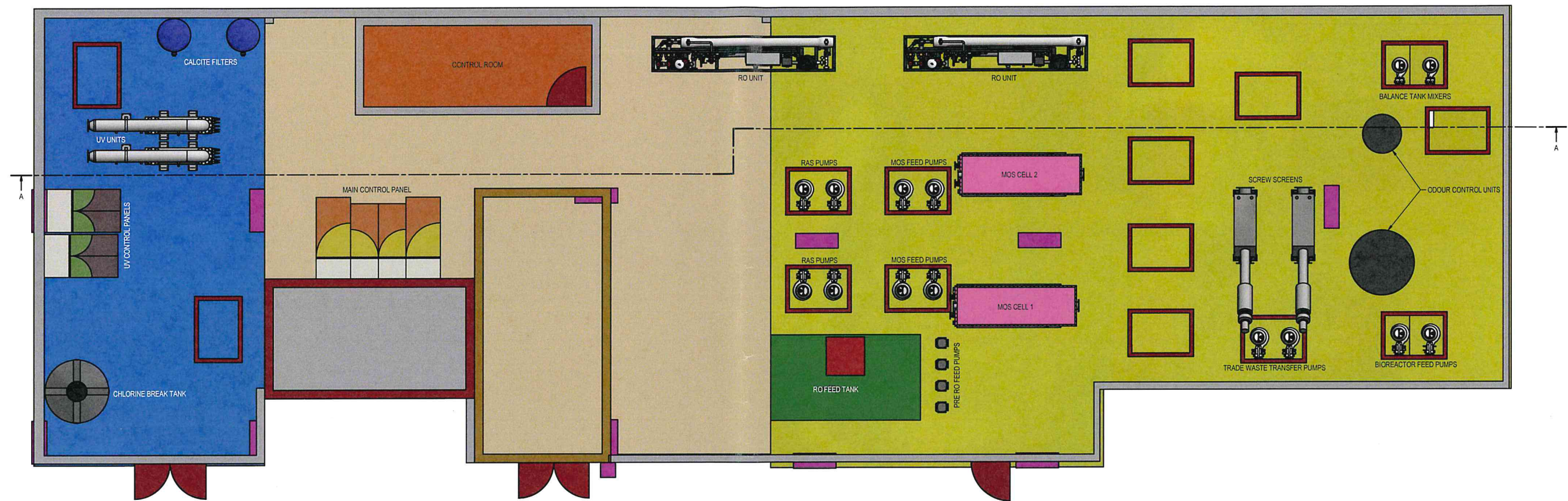
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Constructors
Telephone: 03 9854 0900
Fax: 03 9819 7979
Website: www.flowsystems.com.au

PROJECT:
SHEPHERDS BAY
CLIENT:

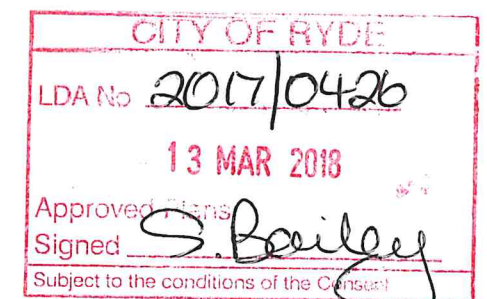
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DATE: 9/11/2017
SCALE:
SHEET SIZE: A1
TYPE OF PROJECTION:

DRAWN: jarulappen
CHECKED: JA
APPROVED: JH
DWG/PRT NO.: 9266 - LWC
PROJECT NO.: 9266
REVISION NO.: 1
SHEET NO.: 1



GENERAL ARRANGEMENT - B1 LEVEL



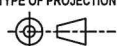
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23.03.15	0	PRELIMINARY ISSUE	JA	MD					

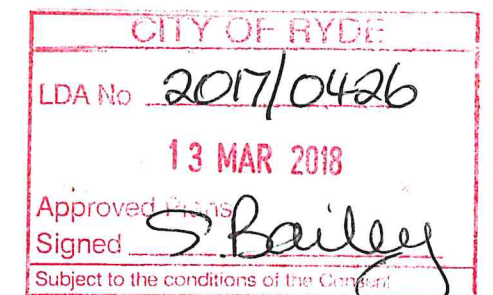
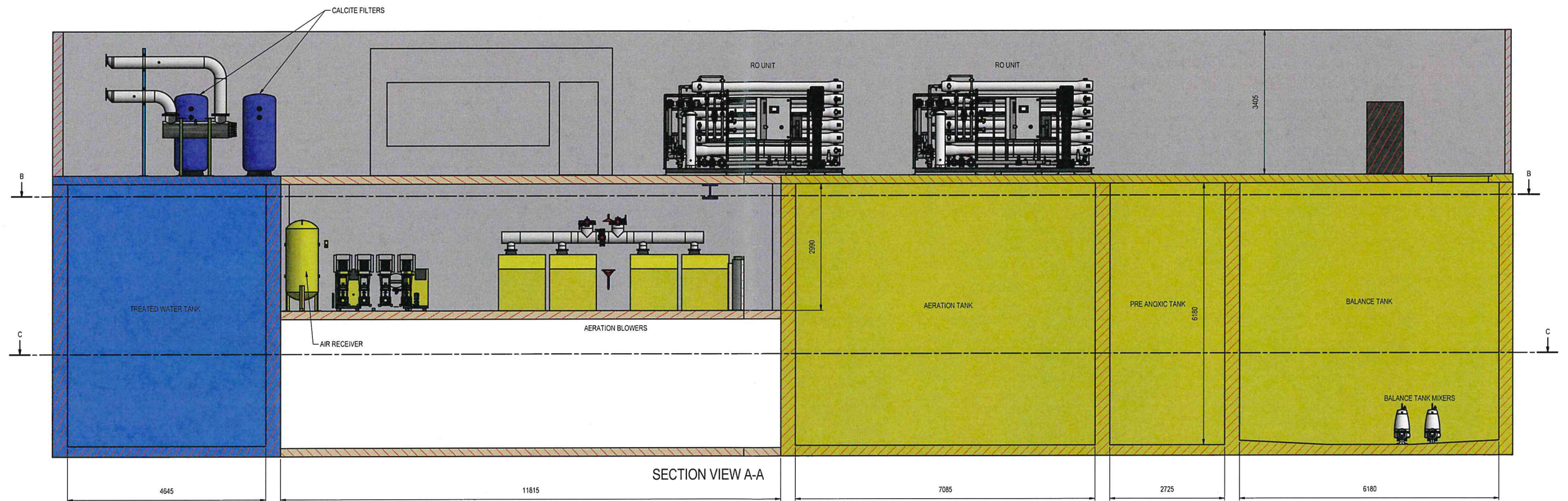
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Fax: 03 9819 7979
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CLIENT:

DESCRIPTION:
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DATE: 11/09/17	DRAWN: jarulappen
SCALE:	CHECKED: JA
SHEET SIZE: A1	APPROVED: JH
TYPE OF PROJECTION:	DWG/PRT NO.: 9266 - LWC
	PROJECT NO.: 9266
	REVISION NO.: 1
	SHEET NO.: 2



DATE	REV	AMENDMENT	BY	CHKD	DATE	REV	AMENDMENT	BY	CHKD
22.09.17	2	REVISED CONCEPT DESIGN	JA	JH					
11.09.17	1	CONCEPT DESIGN	JA	JH					
23.03.15	0	PRELIMINARY ISSUE	JA	MD					

Shepherds Bay **+** Plus

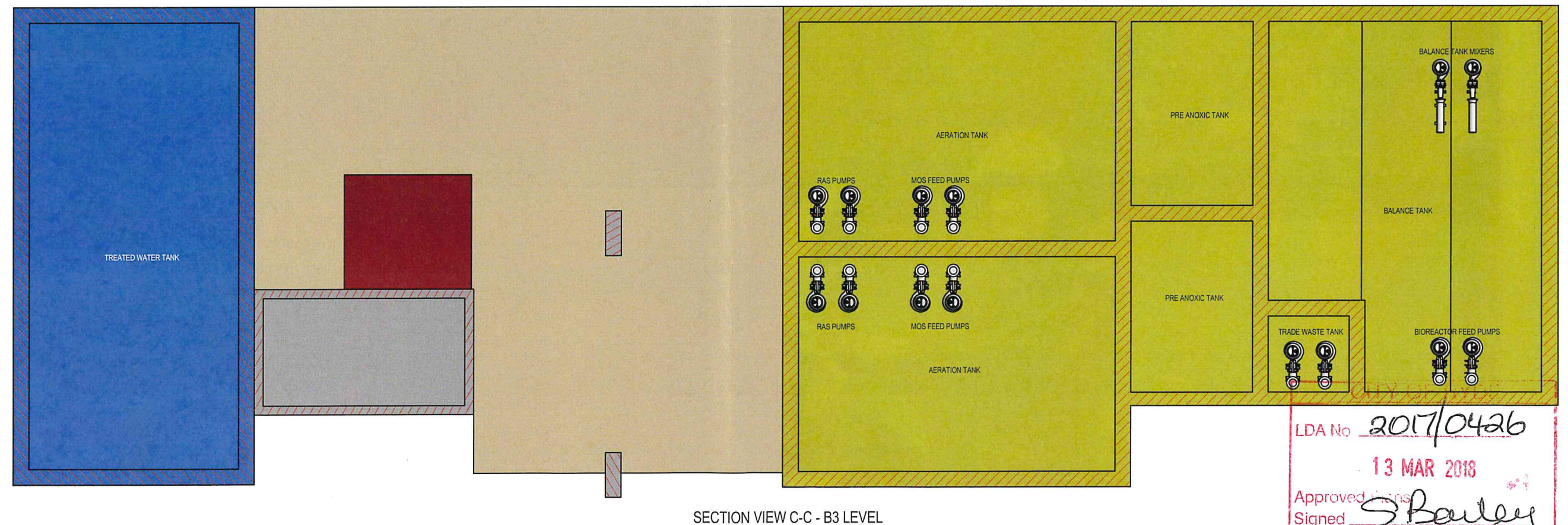
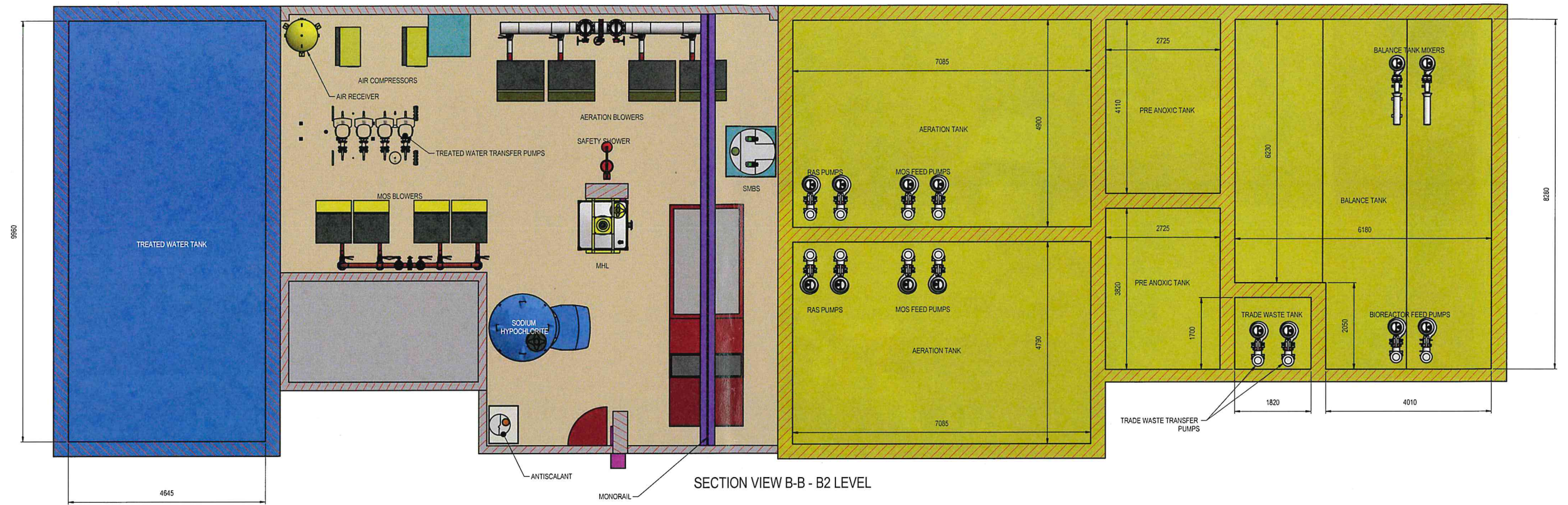
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Fax: 03 9819 7979
Website: www.flowsystems.com.au

PROJECT:
SHEPHERDS BAY
CLIENT:

DESCRIPTION:
GENERAL ARRANGEMENT - SECTION VIEW
A-A

DATE: 11/09/17
SCALE:
SHEET SIZE: A1
TYPE OF PROJECTION:

DRAWN: janulappen
CHECKED: JA
APPROVED: JH
DWG/PRT NO: 9266 - LWC
PROJECT NO: 9266
REVISION NO: 1
SHEET NO: 3



LDA No 2017/0426
 13 MAR 2018
 Approved Plans
 Signed S. Baileys
 Subject to the conditions of the Contract

DATE	REV	AMENDMENT	BY	CHKD	DATE	REV	AMENDMENT	BY	CHKD
22 09 17	2	REVISED CONCEPT DESIGN	JA	JH					
11 09 17	1	CONCEPT DESIGN	JA	JH					
23 03 15	0	PRELIMINARY ISSUE	JA	MD					

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PROJECT:
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 CLIENT:

DESCRIPTION:
 GENERAL ARRANGEMENT - B2 LEVEL

DATE: 11/09/17
 SCALE:
 SHEET SIZE: A1
 TYPE OF PROJECTION:

DRAWN: jarulappen
 CHECKED: JA
 APPROVED: JH
 DWG/PRT NO.: 9266 - LWC
 PROJECT NO.: 9266
 REVISION NO.: 1
 SHEET NO.: 4

ADDENDUM REF FOR PROPOSED SEWAGE AND RECYCLED WATER RETICULATION SYSTEMS

Shepherds Bay, New South Wales



128403
Addendum REF for proposed
sewage and recycled water
reticulation systems,
Shepherds Bay
Version 1
2 July 2019

ADDENDUM REF

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
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Approval for issue

Rob Dwyer



2 July 2019

Prepared by:

RPS

Rob Dwyer

Planning Manager - Newcastle

Unit 2A, 45 Fitzroy Street
Carrington NSW 2294

T 02 4940 4200

E rob.dwyer@rpsgroup.com.au

Prepared for:

Flow Systems Operations Pty Ltd

Darren Wharton

Executive Manager, Project Delivery

Level 40, 259 George Street
Sydney NSW 2000

T 02 80161021

E dwharton@flowsystems.com.au

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ACRONYMS

AGWR	Australian Guideline for Water Recycling 2006
AHIMS	Aboriginal Heritage Information System
AHIP	Aboriginal Heritage Impact Permit
BCA	Building Code of Australia
CEMP	Construction Environmental Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
DCP	Development Control Plan
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
Flow Systems	Flow Systems Pty Ltd, the parent company of Flow Systems Operations.
HDPE	High density polyethylene
IPART	Independent Pricing and Regulatory Tribunal
ISEPP	<i>SEPP (Infrastructure) 2007</i>
ISST	Interim sewage storage tanks
LEP	Local Environment Plan
LGA	Local Government Area
LWC	Local Water Centre
NES	National Environmental Significance
NOW	NSW Office of Water
NPW Act	<i>National Parks and Wildlife Act 1977</i>
OEH	Office of Environment and Heritage
PBP	<i>Planning for Bushfire Protection 2006</i>
POEO Act	<i>Protection of Environment Operations Act 1997</i>
PVC	Polyvinylchloride
REF	Review of Environmental Factors
RMS	Roads and Maritime Services
SEPP	State Environmental Planning Policy
Shepherds Bay LWC	Shepherds Bay Local Water Centre
SWC	Sydney Water Corporation
TSC Act	<i>Threatened Species Conservation Act 1995</i>
WICA	<i>Water Industry Competition Act 2006</i>
WRF	Water recycling facility
WWTP	Waste Water Treatment Plant

EXECUTIVE SUMMARY

The proposed modification

Flow Systems Operations (Flow Systems) proposes to modify the sewage and recycled water reticulation system at Shepherds Bay (the Approved Project) by extending the activity area to include Stage 7A of the Shepherds Bay development area and by the installation and operation of dual sewer pumps and sewage transfer tanks in the basement of each building within the Shepherds Bay development area.

The key features (the “proposed modification”) include the following:

- Sewer and recycled water reticulation systems works to service Stage 7A within 102 and 104 Bowden Street (Lot 1 DP 730371 and Lot 5 DP 12534) and existing Stage 7 in Meadowbank. This will entail the construction and operation of a dedicated pressurised 150mm diameter sewer main connecting a basement located transfer tank and sewer pump to Stage 7 of the Shepherds Bay Urban Renewal Project which in turn is connected to the Flow Systems Local Water Centre. It will also entail the construction and operation of a 150mm diameter recycled water main connecting Stage 7 to Stage 7A of the Shepherds Bay Urban Renewal Project.
- The installation and operation of dual sewer pumps and sewage transfer tanks within each stage of the Shepherds Bay development. These will be connected to approved Flow Systems sewage reticulation infrastructure.

Background

The original Review of Environmental Factors (the “Approved Project REF”) was prepared in June 2017 by RPS (PR128403, Version 3) and supported an application for a network operator’s licence (NOL) by Flow Systems Operations. Notice of granting of NOL 17_042 was provided by the New South Wales Minister for Energy and Utilities on 13th October 2017.

Need for the proposed modification

Chapter 2 of the Approved Project REF addressed the strategic need for the project, the project objectives and the options that were considered during concept design development. The proposed modification described and assessed in this “Addendum REF” is consistent with the strategic need for the project.

The proposed modification will enable an additional 43 high density residential dwellings to be connected to the proposed reticulation systems.

Proposal objectives

Chapter 2.2 of the Approved Project REF identifies the project objectives that apply to the proposed modification.

The inclusion of an additional 43 dwellings to be serviced by the sewage and recycled water reticulation system would be consistent with these objectives.

Options considered

The modification of the project by the connection of Stage 7A (Option 1 for the purposes of this Addendum REF) and other minor amendments remains consistent with the project objectives and would expand the environmental benefits of a decentralised sewage and recycled water reticulation system to an additional 43 dwellings.

The only feasible alternative (Option 2) to the proposed modification is to pipe sewage from Stage 7A to the local Sydney Water sewerage system alone via an appropriately sized gravity connection. This option is unlikely to achieve sustainability initiatives for water re-use.

Statutory and planning framework

The construction and operation of the proposed modification will be undertaken by Flow Systems which is licensed under the WICA. Flow Systems may therefore, pursuant to ISEPP, develop sewage reticulation systems within its licensed area of operations without consent being required under Part 4 of the EP&A Act.

This Addendum REF has been prepared in accordance with Section 5.5 of the EP&A Act. It has concluded that the proposed activity is unlikely to significantly affect the environment and hence an EIS is not required to be prepared under section 5.7 of the EP&A Act. The proposed activity is also unlikely to affect Commonwealth land or have an impact on any matters of national environmental significance.

This Addendum REF has also been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA and the *Water Industry Competition (General) Regulation 2008*. It is considered that the proposed activity is unlikely to present a significant risk of harm to the environment and approval of the NOL under the WICA and the *Water Industry Competition (General) Regulation 2008* would be in the public interest.

Community and stakeholder consultation

Consultation will be performed as part of the variation to the NOL process via IPART's exhibition of the variation application. Exhibition of the variation application will include exhibition of this Addendum REF.

Submissions to the exhibition of the variation application will be considered as required under ISEPP and WICA.

Environmental impacts

Installation of the proposed recycled water and sewage reticulation mains to service Stage 7A of the Shepherds Bay development area and the installation of the dual sewer pumps in the basement levels of all stages would not encounter or disturb any soils and the potential for dust generation from those works is therefore negligible.

There would be no potential for odour issues during normal operation of the proposed recycled water and sewage reticulation systems that form the proposed activity and modification.

There is some potential for odour issues associated with the sewage transfer tanks, pumps and associated connections with each of the stages of the Shepherds Bay development. The transfer tanks, however, would be sealed units.

The tanks would need to be opened on occasion to carry out pump maintenance. Prior to opening, the tanks would be thoroughly flushed to remove sewage, reducing the potential for odour. The bypass, overflow and drain gravity connections to the Sydney Water sewerage system would all be sealed and unlikely to generate any odour issues during normal operation. In the unlikely event that they would need to be opened, they would be thoroughly flushed prior to opening to remove any sewage. Such maintenance would be required very infrequently. Any odours generated during such maintenance activities would be limited to the immediately adjacent areas within the basement levels and would be temporary and short-lived in nature due to the mechanical carpark ventilation in place. The risk of significant odour impacts due to operation and maintenance of the sewage transfer tanks, pumps and associated connections within the basements of the stages is therefore very low.

An additional mitigation measure to be implemented to manage air quality and odour impacts as a result of the proposed modification is recommended in this Addendum REF.

Other impacts

Impacts to the following environmental aspects are expected to be minor and / or consistent with the impacts described in the Approved Project REF:

- Contamination;
- Soil and water;
- Noise and vibration;
- Traffic and access;
- Flora and fauna;
- Socio-economic effects
- Waste management;
- Heritage;
- Risks and hazards; and
- Cumulative impacts.

Justification and conclusion

The proposed modification is consistent with the project objectives as stated in Section 2.2 of the Approved Project REF and Section 2.2 of this Addendum REF. In particular, the modification will allow an additional 43 households to be connected to a system with significant environmental benefits

This Addendum REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

1 INTRODUCTION

1.1 Proposal identification

Flow Systems Operations Pty Ltd (Flow Systems) proposes to modify the Shepherds Bay sewage and recycled water reticulation system in order to service an additional 43 high density residential dwellings, within Stage 7A of the Shepherds Bay Urban Renewal Project area (Shepherds Bay development) and to include the installation and operation of dual sewer pumps and sewage transfer tanks in the basements of the buildings of Stages 2 to 7, 7A, 8 and 9 within the Shepherds Bay development. The proposed works (the “proposed modification”) include the following:

- Sewer and recycled water reticulation systems works to service Stage 7A within 102 and 104 Bowden Street (Lot 1 DP 730371 and Lot 5 DP 12534) and existing Stage 7 in Meadowbank. This will entail the construction and operation of a dedicated pressurised 150mm diameter sewer main connecting a basement located transfer tank and sewer pump to Stage 7 of the Shepherds Bay Urban Renewal Project which in turn is connected to the Flow Systems Local Water Centre. It will also entail the construction and operation of a 150mm diameter recycled water main connecting Stage 7 to Stage 7A of the Shepherds Bay Urban Renewal Project.
- The installation and operation of dual sewer pumps and sewage transfer tanks within each stage of the Shepherds Bay development. These will be connected to Flow Systems’ approved sewage reticulation infrastructure.

The location of the proposed modification is shown in **Figure 1**. Chapter 3 describes the proposed modification in more detail.



Figure 1 REF Addendum extension location

1.2 Background

The Shepherds Bay sewage and recycled water reticulation systems are operated and maintained by Flow Systems and service around 1,750 residential units in eight high-rise residential towers (Stages 2 to 9) and associated commercial and retail premises within the Shepherds Bay development area. The original Review of Environmental Factors (the "Approved Project REF") was prepared in June 2017 by RPS (PR128403, Version 3) and supported an application for a network operator's licence (NOL) by Flow Systems Operations. Notice of granting of NOL 17_042 was provided by the New South Wales Minister for Energy and Utilities on 13th October 2017.

The sewage reticulation system and recycled water reticulation system subject of NOL 17_042 will be connected to a proposed water recycling facility, referred to as the Shepherds Bay Local Water Centre (Shepherds Bay LWC). The Shepherds Bay LWC is proposed at 12-16 Nancarrow Avenue in the basement levels of the building referred to as Stage 3 of the Shepherds Bay development. The Shepherds Bay LWC to be constructed in 2020 has development consent from the City of Ryde (Ryde Council) (LDA 2017/0426) and is not part of the proposed activity that is the subject of the Approved REF or this Addendum REF. The LWC has been designed to ensure that it has adequate capacity to supply all the projected non-potable water demand for all approved and proposed development (including Stage 7A) within the Shepherds Bay development area.

The construction of the Stage 7A building and its internal plumbing is to be undertaken by Holdmark Property Group Pty Ltd pursuant to the development consent from Ryde City Council (LDA2018/0048) which was granted on 13 December 2018.

1.3 Purpose of the report

This Addendum REF has been prepared by RPS on behalf of Flow Systems. The proposed sewage and recycled water reticulation systems works subject of this Addendum REF are water industry infrastructure as defined in the *Water Industry Competition Act 2006* (WICA). Water industry infrastructure is subject to licensing under WICA. Before granting a WICA licence, or in this case granting of a variation to a licence, the NSW Minister for Water, Property and Housing must be satisfied that the applicant has the capacity to carry out the activities that the variation (if granted) would authorise in a manner that does not present a significant risk of harm to the environment. This Addendum REF has been prepared to assist the Minister with that decision.

The reticulation systems (both existing and proposed) connect to internal plumbing systems within each of the stages (buildings) that are being constructed as part of the Shepherds Bay development. The internal plumbing systems within the stages upstream of the connection point to Flow Systems proposed sewage reticulation system and downstream of the connection point to Flow Systems recycled water reticulation system are not subject to licensing under WICA. As such, they did not form part of the proposed activity of the Approved Project REF, nor do they form part of the proposed activity of this Addendum REF.

The proposed modification is sewage reticulation system as defined in the Standard Instrument. Clause 106(3B) of *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) provides that development for the purpose of sewage reticulation systems may be carried out by any person licensed under the WICA without consent on any land. This means that for any water industry infrastructure for which a WICA licence is required for the proposed reticulation systems, no development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) is required. The systems will be activities as defined in Part 5 of the EP&A Act. However, as no further approval is required for those activities, there will be no determining authority that must consider the potential environmental impacts and grant the activities approval. Nonetheless, this Addendum REF has been prepared in a manner that is consistent with environmental impact assessments carried out in accordance with the requirements of Part 5 of the EP&A Act.

This Addendum REF should be read in conjunction with the Approved Project REF. The purpose of the Addendum REF is to describe the proposed modification, to document the likely impacts of the proposal on the environment, and to detail protective measures to be implemented.

The description of the proposed works and associated environmental impacts have been undertaken in context of clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulations), *Biodiversity Conservation Act 2016* (BC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the Addendum REF helps to fulfil the requirements of section 5.5 of the EP&A Act to ensure that Flow Systems examines and takes into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

The findings of the Addendum REF would be considered when assessing:

- Whether the proposed modification is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning under Part 5.7 of the EP&A Act;

- The significance of any impact on threatened species as defined by the *Biodiversity Conservation Act 2016* (BC Act); and
- The potential for the proposed modification to significantly impact a matter of national environmental significance or Commonwealth land and the need to make a referral to the Australian Government Department of the Environment and Energy for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

2 NEED AND OPTIONS CONSIDERED

2.1 Strategic need for the project

Chapter 2 of the Approved Project REF addressed the strategic need for the project, the project objectives and the options that were considered during concept design development. The proposed modification described and assessed in this Addendum REF is consistent with the strategic need for the project.

The proposed modification will enable an additional 43 dwellings, within Stage 7A, to be serviced by the sewage and recycled water reticulation system.

2.2 Project objectives

Section 2.2 of the Approved Project REF identifies the project objectives that apply to the proposed modification. The project objectives are as follows:

- Contribute to the efficient provision of essential infrastructure required to service a new residential community;
- Provide financially viable and financially sustainable wastewater treatment services;
- Provide best practice wastewater treatment solutions;
- Be undertaken without an adverse impact on the environment and at the same time contribute to sustainability;
- Minimise risk to public health; and
- Be provided in accordance with existing Government Policy.

The inclusion of an additional 43 dwellings to be serviced by the sewage and recycled water reticulation system would be consistent with these objectives.

2.3 Alternatives and options considered

As detailed in Section 2.3 and 2.4 of the Approved Project REF, the Shepherds Bay sewage and recycled water reticulation system offers an alternative solution to gravity sewer servicing whereby the use of a pressure sewage reticulation system reduces inflow and infiltration from stormwater and groundwater, and therefore significantly reduces the off-site environmental impacts and footprint required for a wastewater treatment facility. That, combined with the use of the latest treatment technology, enables the implementation of a decentralised, local sewage treatment system with production and distribution of recycled water back to the community.

The modification of the project by the connection of Stage 7A (Option 1 for the purposes of this Addendum REF) and other minor amendments remains consistent with the project objectives and would expand the environmental benefits of a decentralised sewage and recycled water reticulation system to an additional 43 dwellings.

The only feasible alternative (Option 2) to the proposed modification is to pipe sewage from Stage 7A to the local Sydney Water sewerage system alone via an appropriately sized gravity connection. This option is unlikely to achieve sustainability initiatives for water re-use.

2.4 Preferred option

Option 1 is the preferred option as it would meet all the project objectives outlined in the Approved Project REF.

3 DESCRIPTION OF THE PROPOSED CHANGES

3.1 The proposed modification

Flow Systems proposes to expand the Shepherds Bay sewage and recycled water reticulation system (NOL 17_042) in order to service Stage 7A of the Shepherds Bay development. The proposed modification also includes the installation and operation of dual sewer pumps and sewage transfer tanks in the basements of the buildings of Stages 2 to 7, 7A, 8 and 9 within the Shepherds Bay development. The modification works are illustrated in detail in **Appendix B**.

3.2 Extension to the pressure sewage reticulation system

The proposed modification will include the construction and operation of a dedicated pressurised 150mm diameter sewer main connecting a basement located transfer tank and sewer pump within Stage 7A (102 and 104 Bowden Street, Meadowbank) to Stage 7 of the Shepherds Bay development and the Shepherds Bay LWC.

The internal plumbing systems within each development stage (Stages 2 – 7, 7A, 8 and 9) would deliver sewage via gravity to a transfer tank in the basement of each building. Two pumps, in a duty and standby arrangement, located within each transfer tanks would be connected to and pressurise the proposed sewage reticulation mains that form part of the proposed (Stage 7A) and approved (remaining stages) activity.

The internal sewage plumbing and services and sewage transfer tank within each stage would also be connected to the local Sydney Water sewerage system via an appropriately sized gravity connection. The gravity connections would be the operational and maintenance responsibility of Flow Systems but are within the scopes of the existing development consents for each stage.

Under normal operating conditions, all sewage from within the stage would flow directly to the sewage transfer tank. In the event that the tank is unable to accept sewage, flow would be automatically diverted directly to Sydney Water's sewer via the gravity connection. The customer connection point would be the inlet of the flow diverter.

If sewage levels in the transfer tanks become excessively high, for example in the event of electricity outages and pump failures or blockages within the proposed mains, sewage would automatically be diverted from the transfer tanks into the Sydney Water sewerage system via the gravity connections, to ensure that internal plumbing systems within the stages continue to function. The transfer tanks would also include drain outlets connected to the Sydney Water sewer via the gravity connections, to allow the tanks to be emptied to carry out maintenance as required. The gravity sewer connections to the Sydney Water sewerage system would be maintained at all times.

The transfer tank would be sealed to avoid potential odour issues and would be connected to the existing vent system for the internal sewage plumbing within the stages and extracted by the mechanical ventilation systems in the basements.

The nine proposed sewer mains along with the gravity sewer connections, flow diverters, sewage transfer tanks and pumps within each of Stage 2 to 7, 7A, 8 and 9 would be the operational and maintenance responsibility of Flow Systems and form the entirety of the sewerage infrastructure the majority of which has been licensed under WICA and the remainder of the infrastructure is the subject of this assessment.

The internal sewage plumbing and services within the stages are upstream of the customer connection points are plumbing and are not subject to licensing under WICA and do not form part of the proposed activity. The internal plumbing systems would be operated and maintained by others on behalf of the relevant owners' corporations.

The sewage reticulation system that forms part of the proposed activity is shown schematically in relation to the internal plumbing systems and the Shepherds Bay LWC in **Figure 2**.

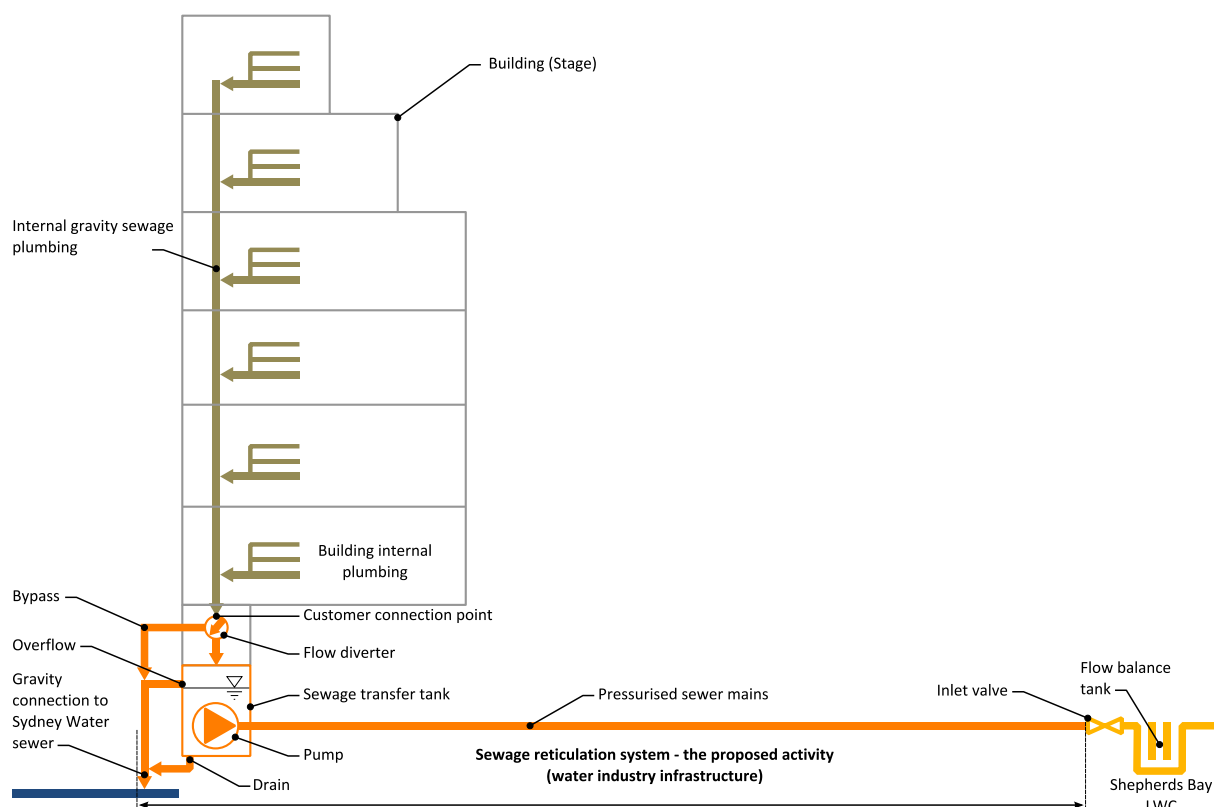


Figure 2 Schematic of the proposed pressure sewage reticulation system

As described in the Approved Project REF, the proposed pressure sewage collection system would feature appropriately sized industry standard thick-walled high-density polyethylene (HDPE) pipes with fusion welded joints. Design and installation would comply with the relevant requirements of WSA 03-2011 Water Supply Code of Australia Version 3.1 to reduce the potential for leakage and failure.

The HDPE pressure sewage reticulation system pipes are designed to have the same life expectancy as a typical domestic building, which is 50 years. Maintenance and replacement of the reticulation system would be factored into long term maintenance plans and programs.

Within the common basement levels that connect the various stages the proposed sewage mains would be attached to the soffits (ceilings) of the basement levels. In areas outside the common basement levels, the mains would be installed typically between 900mm and 1500mm, however greater installation depths might be required in places to avoid other services and obstructions.

The proposed pressure sewage reticulation system would not be subject to inflow and infiltration from stormwater and groundwater. As such, sewage flows would be predictable and sewage overflow points in the system would not be required. As the system would be pressurised it would not need to be constructed at grade and can therefore be much shallower than traditional gravity fed systems.

A telemetry system would be installed to monitor the pressure sewage reticulation system. The system would include pressure monitoring points that send regular updates via telemetry to operators and activate alarms at times of low pressure, which may be indicative of leaks and ruptures. Valves would be installed along the mains that would be shut in the event of issues with the mains, including damage from third party activities (for example excavations associated with other utility infrastructure in the vicinity).

3.3 Extension to the recycled water reticulation system

The proposed modification will include the construction and operation of a dedicated 150mm diameter recycled water main connecting a basement located transfer tank and sewer pump within Stage 7A (102 and 104 Bowden Street, Meadowbank) to Stage 7 of the Shepherds Bay development and the Shepherds Bay LWC.

A bulk recycled water meter would be installed on the lateral branch main for Stage 7A. The customer connection points would be at the connections of the proposed recycled water reticulation mains to the building booster pumps attached to the internal recycled water plumbing systems within each stage. The booster pumps would be operated and maintained by others on behalf of the relevant owners' corporations.

The recycled water reticulation system that would be extended to include Stage 7A is shown schematically in relation to the internal recycled water plumbing systems and the Shepherds Bay LWC in **Figure 3**.

The recycled water reticulation system would be appropriately sized industry standard thick-walled HDPE pipes with fusion welded joints. Design and installation would comply with WSA 03-2011 Water Supply Code of Australia Version 3.1 to reduce the potential for leakage and failure.

The HDPE recycled water reticulation system pipes are designed to have the same life expectancy as a typical domestic building, which is 50 years. Maintenance and replacement of the reticulation system would be factored into long term maintenance plans and programs.

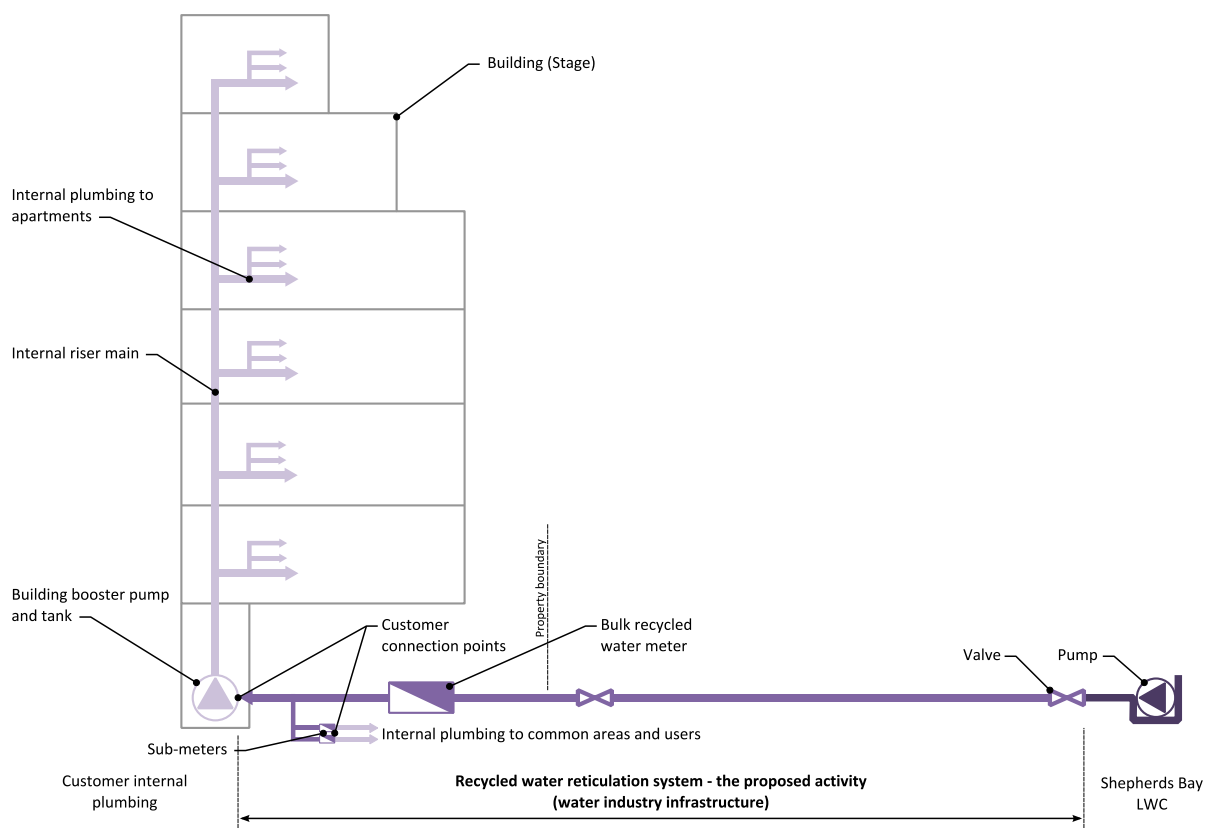


Figure 3 Schematic of the proposed recycled water reticulation system

Within the common basement of Stage 7A that connects to Stage 7, the proposed recycled water main would be attached to soffits (ceilings) of the basement levels. In areas outside the common basement, the mains would be installed typically between 900mm and 1500mm, however greater installation depths might be required in places to avoid other services and obstructions.

A telemetry system would be installed to monitor the recycled water reticulation system. The system would include pressure monitoring points that send regular updates via telemetry to operators and activate alarms

at times of low pressure, which may be indicative of leaks and ruptures. Valves would be installed along the mains that would be shut in the event of issues with the mains, including damage from third party activities (for example excavations associated with other utility infrastructure in the vicinity). Valves would allow sections of the ring main to be taken out service while maintaining continued recycled water supply.

3.4 Construction activities

The proposed modification will involve the construction of a dedicated sewer main and recycled water main from Stage 7A to Stage 7 of the Shepherds Bay development and the installation of the dual sewer pumps and sewage transfer tanks in the basement of the buildings of each stage.

The sewer and recycled water mains linking Stage 7A to Stage 7 would be installed by open trench construction methods and completed as part of the construction of the Stage 7A building, which was granted development consent by Ryde City Council (LDA 2018/0048) on 13 December 2018. It is noted that all the environment controls required by the development consent for Stage 7A in relation to those works would be in place at the time the proposed recycled water and sewage reticulation systems would be installed. These include the development and implementation of stormwater management plans, erosion and sediment control plans, construction traffic management plans, acid sulfate soil management plans, site dewatering plans and waste management plans. Construction activities associated with the installation of the proposed reticulation systems would be integrated into the existing works and utilise existing controls as relevant.

3.5 Construction plant and equipment

The following plant and equipment would be required to undertake the proposed works:

- Rigid delivery trucks to deliver pipes and equipment at the start of works;
- Portable generators intermittently to provide power for the polyethylene pipe electro-fusion process; and
- General construction tools.

3.6 Construction Hours

Construction will be undertaken during the following hours:

- Monday to Friday 7am to 6pm; and
- Saturday 8am to 3pm.

3.7 Construction Program

Works associated with the installation of the proposed extension of the recycled water and sewage reticulation systems are expected to commence in late 2019.

The program for installation of the reticulation system within Stage 7A relies on the Stage 7A building construction program.

3.8 Environmental Management Plan – Construction Phase Activities

During construction environmental safeguards referred to in this Addendum REF shall be implemented. The contractor will prepare a construction environmental management plan (CEMP) covering the construction phase prior to the commencement of construction. This CEMP will cover the requirements of this REF Addendum in conjunction with the Approved Project REF.

3.9 Outline of Operation Works

The outline of operation of works are consistent with those identified in the Approved Project REF but have been repeated below for consistency.

The activity will be undertaken by Flow Systems and the systems will operate 24 hours a day, 7 days per week to service the community. The pipe work is designed for a life span of 50-100 years and as it is predominantly buried routine maintenance is not required nor carried out. The extension of the sewage and recycled water systems will service an additional 43 apartments within the Shepherds Bay development.

Each property will be supplied with a reference guide explaining the requirements of the pressure sewage reticulation system.

Occasionally the pressure sewage reticulation system may be flushed with recycled water to ensure that there is no build-up of solids.

Reactive repairs may need to be carried out in the event that mains are damaged by third parties. All of Flow Systems Operations' assets are registered on the Dial Before You Dig databases to assist with minimising the risk of this occurring.

The Shepherds Bay development features retail and commercial development along with the residential development. Flow Systems provides sewerage services the existing retail and commercial development within the urban renewal area and proposes to extend this to Stage 7A once constructed. Flow Systems would enter into agreements with retail and commercial premises to ensure that any waste that is not suitable to be accepted and processed by the proposed Shepherds Bay LWC would be segregated from the proposed pressure sewage reticulation system at the source. The waste would then be collected by separately and disposed of at an appropriately licensed waste facility.

4 KEY LEGISLATION

4.1 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the statutory framework for planning and environmental assessment in New South Wales. Implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. The EP&A Act contains two parts which impose requirements for planning approval, namely:

- Part 4 generally provides for the control of local development that requires development consent from the local Council. Part 4 also provides for State Significant Development; and
- Part 5 provides for the control of ‘activities’ that do not require development consent under Part 4 and are undertaken or approved by approved authorities.

The applicable approval process is generally determined by reference to the relevant environmental planning instruments and other controls. These include local environmental plans (LEPs) and State Environmental Planning Policies (SEPPs). Pursuant to Section 3.28 of the EP&A Act there is a general presumption that a SEPP prevails over a LEP in the event of an inconsistency.

This Addendum REF has been prepared pursuant to two pieces of legislation, WICA and for the construction and operation of a sewage reticulation system as defined for the purposes of Clause 106(3B) of ISEPP which is an “activity” defined under Part 5 of the EP&A Act.

The Approved Project REF and this Addendum REF have been prepared in accordance with Sections 5.5 and 5.7 of the EP&A Act and clause 228 of the *Environmental Planning and Assessment Regulation 2000*. It examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment as a result of the activities associated with this project.

Once Flow Systems becomes a licensed network operator for the Stage 7A extension area covered by this Addendum REF, it will have powers under ISEPP (see section 4.3.1) but as it requires no further approval to undertake its activities, section 5.4 of the EP&A Act does not identify a determining authority for the environmental assessment. In accordance with Flow Systems Operations’ Operational Environmental Management Plan and Approvals Management Procedure, Flow Systems will submit future subsequent environmental assessments for third party review by IPART or a consultant approved by IPART at Flow Systems’ own cost.

It is noted that potable water infrastructure for Stage 7A does not form part of this REF. Potable water infrastructure is subject to development consent under Part 4 of the EP&A Act. Accordingly, the construction of the residential building at 102-104 Bowden Street, Meadowbank (Stage 7A) has been granted development consent (LDA 2018/0048) by Ryde City Council on 13 December 2018 which includes the construction of potable water infrastructure. An environmental impact assessment of the potable water infrastructure was carried out by City Plan Strategy and Development in December 2017 to accompany the development application under Part 4 of the EP&A Act.

4.2 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires the approval of the Commonwealth Minister for the Environment for actions that may have a significant impact on matters of National Environmental Significance (NES). The Matters of NES under this Act are:

- World Heritage properties.
- National heritage places.
- Wetlands of international importance (RAMSAR wetlands).
- Threatened species and ecological communities.

- Migratory species.
- Great Barrier Reef Marine Park.
- Commonwealth marine areas.
- Nuclear actions (including uranium mining).
- A water resource, in relation to coal seam gas development and large coal mining development.

This Addendum REF has assessed the above matters with respect to the proposed activity as contained in **Appendix A** of the Approved Project REF and it is concluded that the activities in the Approved Project REF and the Addendum REF modifications will not result in a significant impact on any matters of NES and, as such, do not require a referral to the Minister for the Environment.

4.3 State Environmental Planning Policies

4.3.1 State Environmental Planning Policy (Infrastructure) 2007

The ISEPP provides a planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The ISEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency. The following clause of the ISEPP is applicable to the construction of the proposed activity.

106 Development permitted with or without consent

Clause 106 of the ISEPP addresses development permitted with or without consent. The relevant parts state the following:

*(1) Development is carried out in the **prescribed circumstances** if the development:*

(a) is carried out by or on behalf of a public authority, or

(b) consists of the construction or operation of water industry infrastructure and, under the Water Industry Competition Act 2006, a network operator's licence is required before the development may be carried out.

AND

(3B) Development for the purpose of sewage reticulation systems may be carried out without consent on any land in the prescribed circumstances.

The construction and operation of the proposed modification will be undertaken by Flow Systems which is licensed under the WICA. Flow Systems may therefore, pursuant to ISEPP, develop sewage reticulation systems within its licensed area of operations without consent being required under Part 4 of the EP&A Act.

However, such development may be carried out on land reserved under the *National Parks and Wildlife Act 1974* only if the development is authorised by or under that Act.

The proposed modification is not located on reserved under the *National Parks and Wildlife Act 1974*. Likewise, the land is not affected by *State Environmental Planning Policy (Coastal Management) 2018* or *State Environmental Planning Policy (State Significant Precincts) 2005*.

Part 2 Division 1 of ISEPP requires 'public authorities' to notify Council and other relevant authorities where specific impacts (as listed in ISEPP) on Council are identified. Flow Systems is not defined as a public authority and the proposed activity does not identify any impacts on Ryde Council. Ryde Council has the opportunity to comment on any part of the proposed activity when notified of the REF by IPART.

4.4 Local Planning Policies

4.4.1 The Ryde Local Environmental Plan 2014

The *Ryde Local Environmental Plan 2014* (RLEP 2014) is a legal document that provides rules and guidelines for development within Ryde LGA to control the use of private and public land through zoning.

Land within the Shepherds Bay development is zoned B4 Mixed Use and an extract of the land use zoning is shown as **Figure 4**. The land containing Stage 7A of the Shepherds Bay Urban Renewal Project is also zoned B4 Mixed Use.

The objectives of the B4 Mixed Use zone are provided below.

Zone B4 Mixed Use

- To provide a mixture of compatible land uses.
- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.
- To ensure employment and educational activities within the Macquarie University campus are integrated with other businesses and activities.
- To promote strong links between Macquarie University and research institutions and businesses within the Macquarie Park corridor.

4.5 Other Legislative Requirements

Other state legislation relevant to the assessment of environmental impacts from the proposed modification has been considered and is outlined below.

Water Management Act 2000

The *Water Management Act 2000* is administered by the NSW Department of Industry – Water. The objective of this Act is to protect watercourses from any deleterious effects as a result of works within or near such watercourses. Part 3A of the Act requires any persons undertaking works within 40 metres of a watercourse to obtain a permit. The proposed modification does not require a “Controlled Activity Approval” under the *Water Management Act 2000* due to the works being located more than 40 metres from a watercourse.

Water Industry Competition Act 2006 and Water Industry Competition (General) Regulation 2008

WICA, as part of its strategy for a sustainable water future aims to harness the innovation and investment potential of the private sector in the water and wastewater industries. WICA established a licensing regime for new entrants to the industry to ensure the continued protection of public health, consumers and the environment. The private sector is now encouraged to develop and operate water management schemes and the licensing system is governed by IPART and the Minister for Water, Property and Housing. As mentioned in Section 3 of this REF the operation of the sewage and recycled water reticulation systems will be undertaken by Flow Systems who will be licensed under the WICA.

IPART assesses WICA licence applications based on licensing criteria and principles in WICA, including the following environmental sections/ clauses within WICA and the *Water Industry Competition (General) Regulation 2008*.

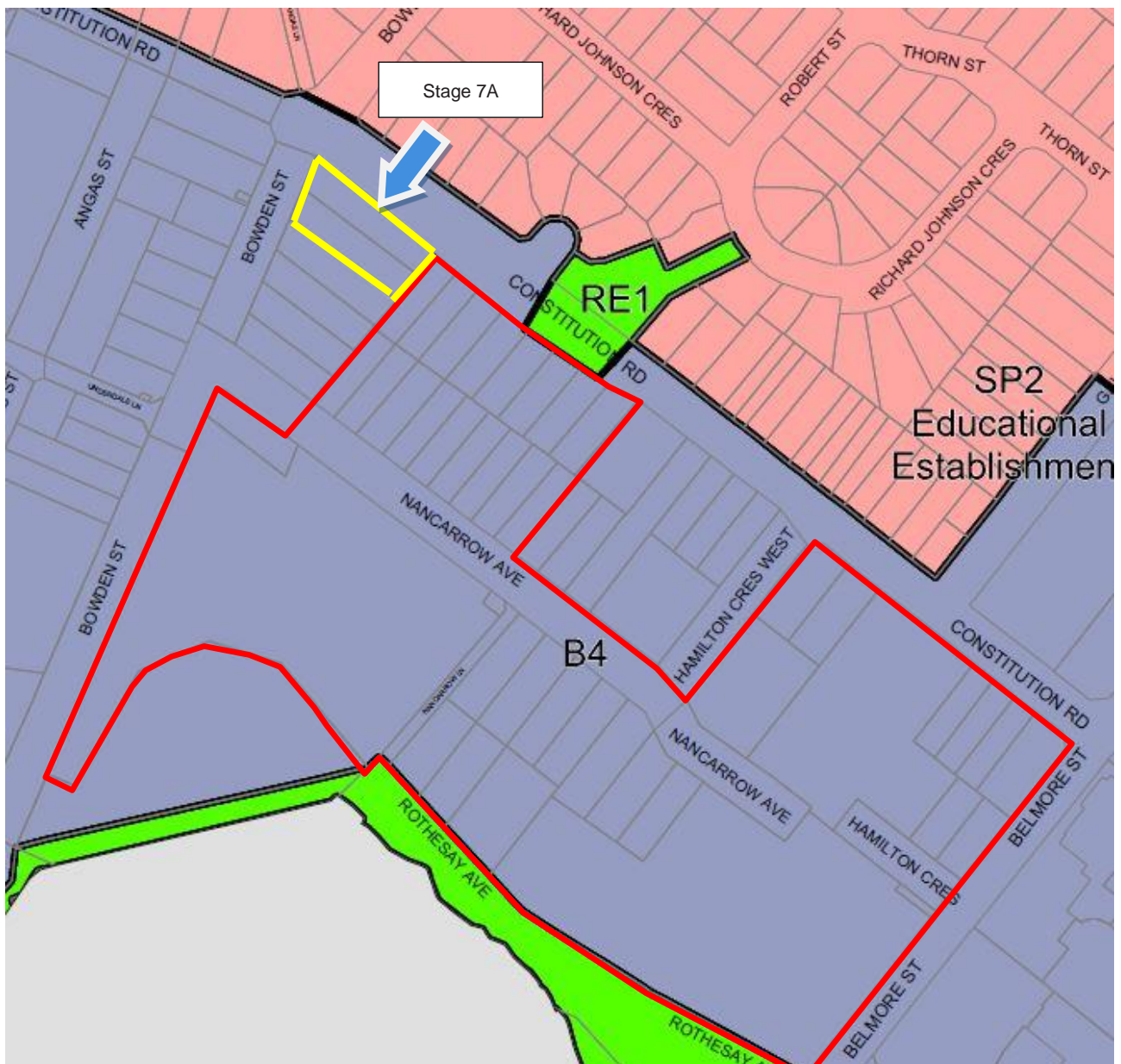


Figure 4 Current Land Use Zoning from RLEP 2014

Legend

- Shepherd's Bay development area subject of NOL 17_042

Water Industry Competition Act 2006

"7 Licensing principles

(1) In considering whether or not a licence is to be granted under this Part and what conditions are to be imposed on such a licence, regard is to be had to the following principles:

(a) the protection of public health, the environment, public safety and consumers generally."

Water Industry Competition (General) Regulation 2008

"7 Matters as to which Minister must be satisfied in relation to licence applications: section 10 (4) (e)

Before granting a network operator's licence, the Minister must be satisfied that the applicant has the capacity to carry out the activities that the licence (if granted) would authorise in a manner that does not present a significant risk of harm to the environment."

In considering licence applications the Minister administering the WICA must be satisfied of such other matters that he/she considers relevant, having regard to the public interest.

This Addendum REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA. This assessment under WICA is determined by the Minister for Water, Property and Housing and is a high level threshold to determine that the licensee has the capacity to protect the environment and not to cause significant risk of environmental harm. This can be considered through this assessment in conjunction with the licensee's operational environmental management plan and certified environmental management systems.

Contaminated Land Management Act 1997

The *Contaminated Land Management Act 1997* (CLM Act) is administered by the NSW Environment Protection Authority (EPA) and local councils. It provides a regime for investigating and, where appropriate, remediating land affected by contamination which represents a significant risk of harm to human health or the environment. The CLM Act specifies responsibilities for managing contaminated land and the role of the EPA in the assessment of contamination and the supervision of the investigation, remediation and management of contaminated sites. No known contaminated sites will be disturbed or generated during the construction of the proposed modified activity.

State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55) requires that prior to the granting of consent to any development that consideration be given to whether or not the land is suited to the intended use of the land with respect to potential soil and groundwater contamination. The Preliminary Screening Contamination Assessment completed by Douglas Partners in 2010 for Concept Plan MP09_0216 did not raise significant concern with regard to the proposed activity and residential use on this site. In summary the proposed modification area is considered to be suited to the proposed activity and thereby satisfies the provisions of SEPP 55.

Biodiversity Conservation Act 2016

The site does not contain vegetation that requires removal for the proposed modification to take place. No assessment pursuant to the *Biodiversity Conservation Act 2016* is required.

Heritage Act 1977

The *Heritage Act 1977* is concerned with the protection of scheduled heritage items, sites and relics. The NSW Heritage Office administers this Act. It is an offence under the *Heritage Act 1977* to disturb any relics. Relics, as defined in the *Heritage Act 1977* means any deposit, artefact, object or material evidence that:

- Relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- Is of State or local heritage significance.

There are no known European heritage items identified within the site. The site is not a heritage item or within a heritage conservation area pursuant to the RLEP 2014.

Protection of the Environment Operations Act 1997

One of the aims of the *Protection of Environment Operations Act 1997* (POEO Act) is to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the following:

- Pollution prevention and cleaner production,
- The reduction to harmless levels of the discharge of substances likely to cause harm to the environment,
- The elimination of harmful wastes,
- The reduction in the use of materials and the re-use, recovery or recycling of materials,
- The making of progressive environmental improvements, including the reduction of pollution at source, and
- The monitoring and reporting of environmental quality on a regular basis.

Under Schedule 1, clause 36 of the POEO Act, the activity of a sewage treatment system is declared to be a scheduled activity if the operation of sewage treatment systems (including the treatment works, pumping stations, sewage overflow structures and the reticulation system) that involve the discharge or likely discharge of wastes or by-products to land or waters has a processing capacity that exceeds:

- 2,500 persons equivalent, as determined in accordance with guidelines established by the EPA Gazettal notice, or
- 750 kilolitres per day.

The proposed modification will not result in the exceedance of the design capacity nor result in the discharge or likely discharge of wastes or by-products to land or waters as documented in the Approved Project REF. Hence the activity is not a scheduled activity.

Flow Systems will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act.

Native Vegetation Act 2003

The *Native Vegetation Act 2003* requires approvals for works to clear native vegetation. No native vegetation will be removed as a result of the proposed activity.

4.6 Summary

The proposed modification has been assessed pursuant to two pieces of legislation:

- *Water Industry Competition Act 2006* (WICA); and
- EP&A Act, particularly environmental assessment under Part 5 and the *Environmental Planning and Assessment Regulation 2000*.

No requirement in any other legislation has identified the need for further approval or licences to be obtained.

The assessment of environmental impact under WICA is made by the Minister for Water, Property and Housing in issuing an amendment to the existing NOL.

Once Flow Systems is issued with a NOL variation under WICA for the approved Stage 7A modification area, no further approval is required for it to undertake its activities. In accordance with Flow Systems' Operational Environmental Management Plan and Approvals Management Procedure, Flow Systems and its subsidiaries, for material changes to water industry infrastructure such as this, will submit future subsequent environmental assessments for third party review by IPART or a consultant approved by IPART.

The development of a sewage reticulation system is an activity under Part 5 of the EP&A Act. This obliges Flow Systems to assess to the fullest extent possible all matters affecting, or likely to affect, the environment

by the construction and operation of the proposed activity. This obligation of the proponent survives in legislation regardless of the status of WICA licence approvals and environmental assessments carried out under WICA.

Section 6 of this REF Addendum and **Appendix 1** of the Approved Project REF provide an assessment of the environmental issues associated with the proposed modifications, in line with the requirements of the EP&A Act and relevant Commonwealth legislation.

This Addendum REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA. This assessment under WICA is determined by the Minister for Water, Property and Housing and is a high level threshold to determine that the licensee has the capacity to protect the environment and not to cause significant risk of environmental harm. This can be considered through this assessment in conjunction with the licensee's operational environmental management plan and certified environmental management systems.

5 CONSULTATION

Consultation will be performed as part of the variation to the NOL assessment process via IPART's exhibition of the variation application. Exhibition of the variation application will include exhibition of this Addendum REF.

Submissions to the exhibition of the variation application will be considered as required under ISEPP and WICA.

6 ENVIRONMENTAL ASSESSMENT

This section of the Addendum REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposed modification of the sewage and recycled water reticulation system. All aspects of the environment potentially impacted upon by the proposed modification are considered. This includes consideration of the factors specified in the guidelines *Is an EIS required?* (DUAP 1999) under clause 228(1) of the *Environmental Planning and Assessment Regulation 2000*. The factors specified in clause 228(2) of the *Environmental Planning and Assessment Regulation 2000* are also considered in **Appendix A**.

It is noted that development of Stage 7A of the Shepherds Bay development is subject of development consent LDA 2018/0048 issued on 13 December 2018. The Statement of Environmental Effects (SEE) for LDA 2018/0048 has been reviewed as part of this assessment. Information from the SEE has been included in this assessment where relevant.

Site-specific safeguards and management measures are provided to ameliorate the identified potential impacts.

6.1 Contamination

6.1.1 Existing environment

The existing environment as it relates to contamination was described in Section 6.1.1 of the Approved Project REF and is still relevant to the proposed modification.

In addition, the potential for contamination to be present within Stage 7A was assessed as part of the approval of LDA 2018/0048. Martens Consulting Engineers assessed and reported on the existing conditions of the site in accordance with the requirements of SEPP 55. In summary the assessment by Martens Consulting Engineers provides that the site can be made suitable for the proposed development of Stage 7A, subject to various additional testing, that are specified in the development consent.

Any potentially contaminated soils and materials that were present within Stage 7A would have already been excavated to accommodate the common basement level. The excavations will have occurred in accordance with the conditions of consent of LDA 2018/0048 and any potentially contaminated soils and materials removed from site for appropriate disposal as required by the conditions of consent for the stages and relevant legislation.

Any contaminated soils and materials within the area that would be affected by the proposed modification will therefore have already been removed prior to the commencement of installation of the proposed recycled water and sewage reticulation mains.

6.1.2 Potential impacts

The potential impacts of the proposed modification on contamination are consistent with those outlined in the Approved Project REF.

6.1.3 Proposed mitigation measures

No additional contamination related mitigation measures are proposed as a result of the proposed modification.

6.2 Soil and water

6.2.1 Existing environment

The existing soil and water environment is described in Section 6.2.1 of the Approved Project REF and is still relevant to the proposed modification.

The installation of the proposed mains between Stage 7A and Stage 7 of the Shepherds Bay development would occur in a context of disturbed soils consistent with land under re-development. Installation and operation of sewer pumps and transfer tanks within Stages 2 to 7, 7A, 8 and 9 within the Shepherds Bay development will occur in the basements of the newly constructed buildings.

During operation of the proposed reticulation systems, the entire Shepherds Bay development will have been developed and will feature landscaping and will feature stormwater collection and conveyance systems.

6.2.2 Potential impacts

It is unlikely that significant impacts to soils and water will occur as the works are largely temporary and limited in scale due to the modified and highly disturbed nature of land with Stage 7A. The majority of the proposed reticulation systems will be installed within the basement levels of Stage 7A, minimising the potential for interaction with and impacts to soil and water. Construction associated with the proposed activity would not have any additional impacts to those carried out as part of works for LDA 2018/0048.

It is unlikely that adverse impacts on water quality would occur during operation. The proposed mains would be closed and pressurised and would be continually monitored. If a significant leak or any unusual flow occurs, personnel from Flow Systems would be immediately alerted to fault in the system by alarms connected to pressure monitoring points on the recycled water and pressure sewage reticulation systems. Operators would respond accordingly in accordance with standard operating procedures which could be by switching off recycled water pumps at the Shepherds Bay LWC via the SCADA control system and by sending trained local contractors to site to close off the relevant valves in the systems. In the unlikely event that recycled water or sewage escapes the reticulation system and gets into the stormwater system, this would be captured by the development's onsite detention system which will contain the spill and prevent it from entering the natural surrounding waterways. This will ensure any accidental release of sewage or recycled water is minimised and captured on-site. Adverse impact on groundwater as a result of the proposed activity is therefore considered to be unlikely.

The duty and standby arrangement of the pumps in the sewage transfer tanks would limit the potential for pumping failure and excessive build-up of sewage within the tanks. The automatic bypass and overflow systems connected to sewer via the gravity connections would also prevent excessive build-up of sewage. The appropriately sized gravity connections would operate to ensure that even in the event of a catastrophic failure of the proposed recycled water and sewage reticulation systems or the proposed Shepherds Bay LWC, that all sewage generated by the stages would be diverted into the sewerage systems avoiding any potential soil and water impacts.

6.2.3 Proposed mitigation measures

No additional soil and water related mitigation measures are proposed as a result of the proposed modification.

6.3 Noise and vibration

6.3.1 Existing environment

The existing noise environment is described in Section 6.3.1 of the Approved Project REF and is still relevant to the proposed modification. The proposed recycled water and sewage system mains for Stage 7A would be constructed as part of construction of the development approved by LDA 2018/0048. The local acoustic environment at the time will therefore be dominated by noise associated with that construction.

6.3.2 Potential impacts

The main source of construction noise will be from machinery associated with the earthworks and construction and installation of pipes within Stage 7A. These impacts will be short term and would include associated traffic movements. Earthworks will include the use of rigid delivery trucks, excavators and portable generators. The noise generated by the construction equipment will be consistent with and generally indistinguishable from other construction noise sources within the Shepherds Bay development.

Due to the distances of the existing residences from the construction location, the nature of the plant and equipment that will be used during construction, the hours of works, the screening from existing buildings and the other construction noise sources that would dominate the local acoustic environment, it is unlikely that noise due to construction of the proposed reticulation systems would have a significant adverse impact on residential receivers.

Construction noise is assessed with reference to the *NSW Interim Construction Noise Guideline* (ICNG). Construction noise is unlikely to have an adverse impact on residential receivers for the following reasons:

- Construction will temporary and will be undertaken during standard hours;
- The nature of the plant and equipment (relatively small scale) that will be used during construction; and
- There will be minimal use of “very annoying activities” such as rock hammering.

It is considered that the nearest existing resident is unlikely to be subject to construction noise levels greater than 10dBA above background levels, except for potential minor exceedances up to 5dBA during initial earthworks on site. Any potentially noise affected neighbours will be contacted with details of construction scheduling and activities and be made aware of telephone numbers for complaints. Community consultation and complaints handling will be undertaken according to the guidelines of the ICNG. All contractors and staff will be made aware of the location of neighbours and instructed on appropriate noise minimisation procedures.

Construction of the proposed reticulation systems would not involve any construction methods or equipment likely to generate significant vibration levels. Due to this and the large distances to the nearest sensitive receivers, there are unlikely to be any vibration-related impacts associated with the proposed modification.

The dual pumps that would pressurise the proposed recycled water and sewage reticulation systems would be within sewage transfer tanks which would be located within the basement levels of each building within the development area. As a result, the potential for noise from pump operation to propagate is extremely limited. It is therefore unlikely that operational pump noise would be audible at any residences or at the locations of any other noise sensitive receivers in the vicinity. Operation of the pumps is unlikely to generate vibration levels of sufficient magnitude and frequency to result in perceptible vibrations or regenerated noise within the stages. The risk of operational noise and vibration impacts due to pump operation is therefore very low.

Maintenance activities associated with the proposed reticulation systems may have the potential to generate elevated noise levels. When such activities occur within the basement levels there would be minimal potential for amenity impacts for residents as the associated noise would not propagate from the levels. When such maintenance activities are required at locations outside the basement levels there is some potential for noise impacts at any adjacent residences. Similar equipment to that used for installation of the mains would typically be required to carry out maintenance works. There would be some potential for elevated noise levels at adjacent residences due to the maintenance works. The potential for amenity impacts would be limited as the works would be temporary and short-lived in duration and would be carried out during standard construction hours to minimise potential amenity impacts.

6.3.3 Proposed mitigation measures

No additional noise related mitigation measures are proposed as a result of the proposed modification.

6.4 Traffic and access

6.4.1 Existing environment

The existing traffic and access environment is described in Section 6.4.1 of the Approved Project REF and is still relevant to the proposed modification.

Vehicle access to the land within Stage 7A will be via the approved access points outlined in LDA 2018/0048. Vehicle access to the land within other development stages of the Shepherds Bay development will be via the approved access points for these stages. From the street network, construction vehicles have access to surrounding major roads and arterial road networks.

6.4.2 Potential impacts

During construction it is proposed that all material loading and unloading will occur within the work sites. No loading or unloading is proposed to occur from public roads. The construction vehicle access routes will be selected to minimise vehicle access to local residential streets to minimise the potential amenity impacts associated with construction vehicle flows.

Temporary access restrictions or diversions may be required during construction due to excavation and connection activities, and on an as required basis during operation to undertake maintenance and repairs, where required. Restriction or diversions may have temporary impacts on pedestrian and vehicle flows within the area.

There are no existing bus services that would be adversely impacted by the proposed works. Public services would not need to be detoured or existing bus stops relocated during construction and operation.

Vehicle movements during construction will mostly consist of the floating of small earthmoving equipment. Truck movements will occur at various stages throughout the construction period.

The proposed activity is unlikely to have significant impacts on the existing environment due to the temporary nature of the works.

Operational access to the proposed recycled water and sewage reticulation infrastructure within Stage 7A and the basements of all other stages would occur directly from the relevant basement levels. Operators would have permanent vehicular access to the basement levels via the subsurface car park entry points for each relevant stage. Any maintenance and repair work associated with the reticulation infrastructure at these locations would occur from the relevant basement levels. Depending on the location and nature of the works, there may be some temporary parking restrictions in the vicinity while the work is occurring. The proposed reticulation mains would be constructed from materials and using methods that would minimise maintenance and repair requirements. Any such maintenance and repair work would be extremely infrequent and associated disruption would be temporary and short-lived in nature.

6.4.3 Proposed mitigation measures

No additional traffic and access related mitigation measures are proposed as a result of the proposed modification.

6.5 Air quality and odour

6.5.1 Existing environment

The existing air quality and odour environment is described in Section 6.5.1 of the Approved Project REF and is still relevant to the proposed modification.

6.5.2 Potential impacts

Installation of the proposed recycled water and sewage reticulation mains within Stage 7A and the installation of the dual sewer pumps in the basement levels of all stages would not encounter or disturb any soils and the potential for dust generation from those works is therefore negligible.

Vehicles and equipment required to attach the reticulation mains to the soffits of basement levels would generate emissions typical of internal combustion engines. As the basement levels are also the car parks for the stages, they will have mechanical ventilation systems that are adequately sized to handle and extract vehicular and equipment emissions and maintain suitable internal air quality. Any additional emissions from the plant and equipment associated with the installation of the reticulation systems within the basement levels would be temporary and short-lived in duration and would be unlikely to result in any significant adverse air quality impacts.

There would be no activities carried out as part of routine operations that would have the potential to generate dust or cause other emissions. Vehicles and equipment used in maintenance of the reticulation systems would have the potential to generate emissions. Maintenance, however, would only be required in exceptional circumstances (for example third party interference and damage) and would be very infrequent. Maintenance of the reticulation systems within the basement levels would not generate dust and any emissions from associated vehicles and equipment would be temporary and short-lived in duration and would be handled by the building ventilation systems. Maintenance activities associated with the reticulation system outside the basement levels may require the buried mains to be exposed, which would involve excavation and ground disturbance with the potential for dust generation.

There would be no potential for odour issues during normal operation of the proposed recycled water and sewage reticulation systems that form the proposed activity and modification. The recycled water that would be reticulated is treated to a high quality in accordance with the AGWR and would have no smell. The sewage that would be reticulated would have a smell. The reticulation system that would be used to reticulate it, however, would be sealed and would have no overflows or other points where odours from the sewage could emanate.

There is some potential for odour issues associated with the sewage transfer tanks, pumps and associated connections with each of the stages of the Shepherds Bay development. The transfer tanks, however, would be sealed units. The tanks would be connected to the vent systems within the stages associated with the internal building sewage plumbing. As the operation of the pumps would not increase the total volume of sewage generated by the stage or create any additional potential odour points, the proposed activity is unlikely to increase potential odour issues.

The tanks would need to be opened on occasion to carry out pump maintenance. Prior to opening, the tanks would be thoroughly flushed to remove sewage, reducing the potential for odour. The bypass, overflow and drain gravity connections to the Sydney Water sewerage system would all be sealed and unlikely to generate any odour issues during normal operation. In the unlikely event that they would need to be opened, they would be thoroughly flushed prior to opening to remove any sewage. Such maintenance would be required very infrequently. Any odours generated during such maintenance activities would be limited to the immediately adjacent areas within the basement levels, be temporary and short-lived in nature and be extracted by the buildings' basement mechanical ventilation systems. The risk of significant odour impacts due to operation and maintenance of the sewage transfer tanks, pumps and associated connections within the basements of the stages is therefore very low.

There is also some potential for odour issues associated with the processing of sewage by the proposed Shepherds Bay LWC. The facility, however, does not form part of the proposed activity that is the subject of this assessment. Potential odour issues associated with the Shepherds Bay LWC have been assessed and considered as part of the development consent for that facility.

There is some potential for odour impacts if a sewage reticulation main is punctured due to third party activity and sewage is released. The likelihood of such an occurrence would be limited by ensuring the reticulation systems are included in Dial Before You Dig databases and through appropriate pipe material selection and design to minimise the potential for puncture. The likelihood of such an event is very low. Any potential odour issues would be limited to the local area and would be temporary until such time as appropriate clean-up had occurred.

6.5.3 Proposed mitigation measures

An additional mitigation measure to be implemented to manage air quality and odour impacts as a result of the proposed modification is recommended as per below:

- Sewage transfer tanks and associated sewer connections will be thoroughly flushed to remove sewage prior to opening to carry out maintenance, to reduce the potential for odour.

6.6 Flora and fauna

6.6.1 Existing environment

Land within Stage 7A contains a large industrial style building. No vegetation exists on site.

6.6.2 Potential impacts

The proposed modification does not propose to remove any vegetation. The existing physical condition of the Stage 7A site is such that it does not have any ecological attributes which, if lost, would impact upon any threatened species, population, ecological community or habitat.

Hence the proposed activity will have no significant impact on threatened species, populations and ecological communities listed pursuant to the BC Act.

6.6.3 Proposed mitigation measures

No additional flora and fauna related mitigation measures are proposed as a result of the proposed modification.

6.7 Socio-economic effects

6.7.1 Existing environment

The existing socio-economic environment is described in Section 6.7.1 of the Approved Project REF and is still relevant to the proposed modification.

6.7.2 Potential impacts

There will be minor short-term constructional impacts to workers within the vicinity and potentially residents within recently completed stages of the Shepherds Bay development. Impacts will include the presence of machinery and associated traffic movements, and the minor visual impacts of these. These impacts will be for a short period of time (2 months) and will not create any long-term socio-economic issues.

The modification will contribute positively to the community by reducing the demand on potable water resources by the use of recycled water for approved uses. The recycled water is treated to a high quality in accordance with the AGWR and its intended end uses of landscape and planter box irrigation, toilet flushing and in washing machines. The AGWR was developed by representatives of state health authorities and scientists from state and federal authorities and its adherence ensures the health of people who live in areas using recycled water. It is likely that Flow Systems NOL will stipulate that it adheres with AGWR and continues to produce recycled water to the required standard. The NSW regulator, IPART, will make sure that Flow Systems complies with these standards through regular compliance auditing.

The modification makes a significant contribution to sustainability of the re-development through the provision of recycled water back to the planned apartments reducing the demand on potable water sources.

6.7.3 Proposed mitigation measures

No additional socio-economic related mitigation measures are proposed as a result of the proposed modification.

6.8 Waste management

6.8.1 Potential impacts

Waste management impacts arising from the modification will be consistent with those outlined in Section 6.8.1 of the Approved Project REF.

The potential for encountering contaminated soil during installation of the proposed recycled water and sewage reticulation mains is low having regard for the outcomes of the Preliminary Contamination Assessment prepared to support the approved LDA 2018/0048. Any contaminated soil and materials that are encountered, however, would be stored, classified in accordance with the *Waste Classification Guidelines* (EPA, 2014) and disposed of at an appropriately licensed waste facility.

Reuse options within Stage 7A would be investigated for any excess spoil that is not potentially contaminated and is suitable for reuse.

Due to the installation of the proposed dual sewer pumps and sewage transfer tanks within the basement levels of the stages and the shallow depth at which the mains would be installed elsewhere, there is negligible potential to encounter groundwater during installation. If any seepage into trenches exhibits visual or olfactory signs of contamination and dewatering is required, the water will be collected (via a sucker truck or similar) and taken to an appropriately licensed waste facility for disposal. Any sediment laden water that requires removal from trenches and has no indication of contamination would re-used within the Shepherds Bay development in a manner that would not result in entry into the local storm water system.

Construction waste (concrete, off cuts and general waste etc) will be stored, classified in accordance with the *Waste Classification Guidelines* (EPA, 2014) and disposed of at an appropriately licensed waste facility.

Construction waste materials likely to be generated by the proposed modification include:

- Off-cuts of piping from construction works;
- Domestic waste such as paper, aluminium cans and material generated by workers.

6.8.2 Proposed mitigation measures

No additional waste management related mitigation measures are proposed as a result of the proposed modification.

6.9 Heritage

The proposed modification would not occur within a heritage conversation area pursuant to the RLEP 2014. A search of the RLEP 2014 indicates one heritage listed item in the vicinity: a factory located at 37 Nancarrow Avenue. The demolition of this item was required in order to construct Stages 6 & 7 and is covered by the development consent for those stages. The heritage item has already been demolished and removed from site.

No features of Aboriginal archaeological or cultural heritage significance are identified within the boundaries of the Shepherds Bay development area or within Stage 7A.

No known features of heritage conservation significance would be affected by the installation and operation of the extended recycled water and sewage mains. Given the past levels of environmental modification and disturbance and the substantial nature of the ground disturbance that will have occurred as part of the Shepherds Bay development at the locations where the proposed reticulation systems would be installed, it is highly unlikely that any intact and previously unidentified features of heritage conservation significance would be uncovered or encountered during installation.

6.9.1 Proposed mitigation measures

There are no heritage related mitigation measures within the Approved Project REF and no new mitigation measures are proposed.

6.10 Risks and hazards

6.10.1 Potential impacts

During construction of the modification there is a possibility that fuels, oils and greases may be discharged to the storm water system if they are inappropriately stored. As identified in Section 6.1 and 6.2 there is some potential that contaminated soils and material might be encountered during installation of the proposed recycled water and sewage mains. Storage and handling of hazardous materials will be in accordance with the state and national regulations and guidelines and best practice for the storage and removal of these materials.

In relation to public health, relatively few restrictions need to be placed on non-drinking water uses of tertiary treated and disinfected recycled water due to the high quality and low risk for direct human contact. End use controls and onsite constraints can also be used to minimise both human exposure to hazards and the impact on receiving environments; such as signage and control of plumbing and distribution systems.

The recycled water that would be produced by the proposed Shepherds Bay LWC and reticulated within the Shepherds Bay development area would be treated to a high quality in accordance with the AGWR. It would pose an extremely low health and safety risk for contact uses. Encountering inappropriately treated recycled water may pose health and safety risks. The approved Shepherds Bay LWC would be designed with appropriate treatment processes, process controls and redundancy in systems and monitoring and sampling programs would be implemented to ensure that the risk of out-of-specification recycled water entering the proposed reticulation system is negligible. Furthermore, the recycled water would be chlorinated prior to entering the proposed recycled water reticulation system to reduce any potential for contamination from within the reticulation system itself. It is noted, however, the Shepherds Bay LWC and associated treatment process do not form part of the proposed modification that is the subject to this assessment. The potential risks associated with contact with the recycled water that would be produced and reticulated are therefore negligible.

Exposure to and contact with sewage poses potential health and safety risks. Under normal operating conditions, however, there would be no pathway of exposure to the sewage within the pressure sewage reticulation system. The system would be designed and constructed in accordance with relevant standards and with appropriate safety factors to ensure that the risk of leak and rupture under normal operation is negligible. The most credible threat to the pressure sewage reticulation system that could create an exposure pathway is a direct physical interaction that penetrates a main. This could occur as a result of third-party interactions, such as the installation and repair of other adjacent utility infrastructure. Penetration resistance would be factored into the design of mains through material type and pipe wall thickness. The mains would be included in the databases accessed as part of Dial Before You Dig searches to minimise the likelihood of inadvertent physical interactions that could damage the mains and result in sewage release.

In the unlikely event of a strike and release of sewage from within the mains, the pressure monitoring telemetry systems installed along the sewage reticulation mains would indicate a problem to the operators, who would then despatch an operator to close relevant valve along the mains to limit sewage release. The operators would also contact the relevant building manager to advise of the issue and that operation of the sewage pumps should cease until further notice. Spill response procedures that form part of the Flow Systems' Operational Environmental Management Plan would then be implemented to reduce the risk of exposure to the sewage and to adequately clean up any released sewage and potentially contaminated materials.

6.10.2 Proposed mitigation measures

No additional risk and hazard related mitigation measures are proposed as a result of the proposed modification.

6.11 Cumulative impacts

6.11.1 Potential impacts

The proposed modification will occur simultaneously with construction of the proposed buildings within the Shepherds Bay development area, including construction of Stage 7A. However, the impacts on the environment due to the construction of the modification are considered to be minor.

A minor cumulative increase in construction traffic is possible as a result of the modification however this will be temporary and relatively short in duration.

Positive cumulative environmental and social impacts will result from the extension and installation of the reticulated system with Stage 7A.

This assessment indicates that the activity is not likely to have a significant effect on the environment. A range of environmental factors as listed in Clause 228 of the *Environmental Planning and Assessment Regulation* (as amended) and Commonwealth Matters of National Environmental Significance have been considered as contained in **Appendix 1**.

6.11.2 Proposed mitigation measures

Provided that the updated mitigation measures as identified within Section 7 are adhered to the cumulative impact will be reduced to a minimum.

7 SUMMARY OF MITIGATION MEASURES

Mitigation measures for the Shepherds Bay sewage and recycled water reticulation system are summarised in **Table 1**. Additional mitigation measures identified in this Addendum REF are included in bold and italicised font. These updated mitigation measures will minimise any potential adverse impacts arising from the proposed adverse impacts arising from the proposed works.

Table 1 Summary of mitigation measures

Impact	Mitigation Measures
General	All contractors and machine operators will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards.
Contamination	<p>No excavation or ground disturbance works associated with installation of the proposed reticulation mains are to commence until site remediation of the site has been undertaken in accordance with the relevant Remedial Action Plans and an appropriate validation report of the remediation works has been prepared.</p> <p>All potentially contaminated soil excavated must be stockpiled in a secure area and be assessed and classified in accordance with the Waste Classification Guidelines (EPA, 2014) before being transported from the site for disposal at an appropriately licensed waste facility.</p> <p>An unexpected finds protocol shall be developed and implemented in the event that any potentially contaminated soils or materials are uncovered during excavations.</p>
Soils and Water	<p>Sediment and nutrient controls, prepared in accordance with the <i>Landcom Managing Urban Stormwater – Soils and Construction</i> (the Blue Book), will be implemented to reduce the impacts of stormwater, erosion and sedimentation on water quality. Specific erosion and sediment controls are to be contained within the site CEMP. All erosion and sediment control measures will be established before excavation begins. Control measures are to remain in place until all surfaces have been fully restored and stabilised.</p> <p>Sandbags will be placed at the entry points to any culverts and stormwater channels to prevent sediment entering the stormwater system.</p> <p>Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached.</p> <p>Any temporary stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.</p> <p>Upslope surface runoff will be redirected around work areas by using diversion drains or other methods.</p> <p>Sediment fences down slope of all disturbed areas and material stockpile areas.</p> <p>Where appropriate, disturbed areas will be stabilised by revegetation within 10 days after completion of construction.</p> <p>Site disturbance will be minimised by containing machinery access to site areas required for approved construction works.</p> <p>Sediment filters such as silt fences, coir bales, or turf strips will be located downstream of disturbed areas.</p> <p>No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces. Nevertheless a 'spill kit' will be kept on site at all times for potential chemical or fuel spills.</p> <p>Appropriate containment measures will be used to ensure that all drilling fluids from directional drilling or boring activities are captured and contained.</p> <p>Drainage systems will be checked at regular intervals and maintained to ensure they are operating at full capacity (e.g. clearance of debris from drainage lines).</p>
Noise	All equipment used will comply with AS2436-1981 <i>Guide to Noise Control on Construction, Maintenance and Demolition Sites</i> .

Impact	Mitigation Measures
	<p>Work and deliveries will only occur during the following times: Monday to Friday: 7am to 6pm, Saturday: 8am to 3pm with deliveries 8am to 6pm. No construction work or deliveries will occur on Sundays or public holidays.</p> <p>Regular and effective maintenance of all equipment, including vehicles moving on and off the site, will be conducted.</p> <p>Plant and equipment which is used intermittently will either be shut down in the intervening periods between works or throttled down to a minimum.</p> <p>Any portable equipment with the potential to create high levels of noise (e.g. compressors, generators) will only be selected for use if it incorporates effective noise control. This equipment should be located, where practical, so that natural ground barriers are between it and the nearest potentially affected receivers.</p>
Traffic and Access	<p>A traffic control plan prepared by a suitably qualified person will be submitted to Flow Systems Operations for approval, detailing construction movements and controls, prior to commencement of work on the site.</p>
Air Quality	<p>The total area of exposed soils would be limited to the greatest extent practicable to minimise the potential for dust generation.</p> <p>Exposed soil and stockpiles would be watered down (or similar) during hot dry and windy atmospheric conditions to minimise potential dust generation.</p> <p>Any stockpiles to be left in place for more than 2 weeks would be covered or the surface adequately stabilised to minimise potential dust generation.</p> <p>Works in unfavourable atmospheric conditions that are exacerbating dust emissions (for example hot, dry and windy conditions) will cease to minimise potential dust emissions and not recommence until more favourable condition are present.</p> <p>Areas disturbed by the work will be stabilised as soon as practicable in accordance with <i>Landcom Managing Urban Stormwater – Soils and Construction</i> (the Blue Book) to minimise potential dust generation.</p> <p>Vehicles and equipment associated with the work will be switched off when not in use to minimise potential emissions.</p> <p><i>Sewage transfer tanks and associated sewer connections will be thoroughly flushed to remove sewage prior to opening to carry out maintenance, to reduce the potential for odour.</i></p>
Flora and Fauna	<p>To prevent damage to vegetation outside the boundaries of the site (if any), vehicles and machinery will be restricted to designated work areas.</p> <p>All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site is stabilised.</p>
Waste generation	<p>All waste generated during the course of the works will be reused or will be stored, classified in accordance with the <i>Waste Classification Guidelines</i> (EPA, 2014) and disposed of at an appropriately licensed waste facility.</p> <p>Any seepage in trenches that exhibits visual or olfactory signs of contamination and dewatering is required, the water will be collected (via a sucker truck or similar) and taken to an appropriately licensed waste facility for disposal.</p> <p>Any sediment laden water that requires removal from trenches and has no indication of contamination would re-used within the Shepherds Bay Urban Renewal Project areas in a manner that would not result in entry into the local stormwater system.</p> <p>All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site.</p> <p>Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at an EPA licensed waste depot.</p> <p>In the unlikely event of a pollution incident, the relevant authorities will be notified in accordance with Clause 148 of the POEO Act and remedial actions undertaken. Environmental incident response and notification procedures will be detailed in the CEMP and OEMP to be reviewed and approved by IPART prior to the commencement of construction and operation, respectively.</p>

Impact	Mitigation Measures
	<p>The work site will be left clean and free of debris and other rubbish at the end of works.</p> <p>All hazardous wastes on site will be removed and disposed in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.</p> <p>The Contractor's recycling and reuse proposal will be detailed in the CEMP.</p> <p>Off-cuts of piping and other materials used will be recycled where possible.</p>
Risks and Hazards	<p>Chemicals and potentially hazardous substances will be used and stored according to regulatory requirements including the <i>Work Health and Safety Act 2011</i>, <i>AS 3780 The storage and handling of corrosive substances</i> and relevant guidelines.</p> <p>The management of waste, including its transport will comply with the POEO Act and POEO (Waste) Regulation.</p> <p>Waste materials will be separated, classified and managed in accordance with the <i>Waste Classification Guidelines Part 1: Classifying Waste</i> (EPA, 2014).</p> <p>All staff and contractors will be made aware of waste management procedures.</p> <p>Chemical, fuel and oil containers will be managed according to manufacturers' directions to avoid potential impacts to the environment or human health.</p> <p>Flow Systems Operations will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act.</p>
Amenity and public information	<p>The Contractor will maintain a complaints register. Any complaints received will be responded to as soon as possible.</p>

8 CONCLUSIONS

8.1 Summary of Beneficial Effects

The proposed modification will benefit the current and future community (including an additional 43 households) in providing ready access to a sewage disposal and recycled water scheme that makes a significant contribution to sustainability. The modified activity will reticulate to all new apartments and premises within the Shepherds Bay development recycled water produced by the Shepherds Bay LWC. The recycled water will be used for toilet flushing, washing machines, cooling towers, externally for irrigation, water features and car washing and with the approval of the variation to the NOL, general washdown, dust suppression, street cleaning and for process water at the Shepherds Bay LWC. The Shepherds Bay LWC will produce high quality and disinfected recycled water thus providing a higher level of security than other methods used for recycling water. The pressure sewage reticulation system requires much smaller reticulation infrastructure than traditional gravity sewer and because it doesn't have to be laid to grade like gravity sewer, it can be laid at shallower depths. Access chambers and pump stations that typically make up part of the gravity sewer network are not required. Construction of the pressure sewage reticulation system is faster and has less impact due to the shallower depths. Smaller infrastructure also means it is more easily repaired in the instance of a fault or emergency.

Given the essential need for this infrastructure, the type and location of the modified activity is assessed as providing the community with the best outcome in terms of type, operation and location.

8.2 Summary of Adverse Effects

The proposed modification will result in minimal adverse effects upon the environment. The modification will be built in conjunction with the works associated with development of the Shepherds Bay development area.

Various minor environmental impacts have been identified in this Addendum REF and these are generally temporary in nature. The Australian government has independently set the quality standards that Flow Systems will have to meet for its recycled water. The NSW regulator, IPART, will make sure that Flow Systems complies with these standards.

Based upon the information provided in this Addendum REF and assessments supporting current development applications across the site it is unlikely that the proposed activity will have direct and indirect impacts on threatened species, populations and ecological communities listed pursuant to the BC Act, or impact on matters of National Environmental Significance pursuant to the EPBC Act.

Operational impacts will be minor and minimised through appropriate mitigation measures (including one additional mitigation measure as provided in **Table 1**) and management and therefore there are no long-term operational impacts from the proposed modified activity.

8.3 Conclusion

Construction of the modification will provide a service essential for the Shepherds Bay development area and greatly benefit the community by ensuring supply of affordable housing for the Ryde district.

The minor adverse effects that have been identified are considered minor and only short term.

The Addendum REF has examined and taken into account all relevant Commonwealth, NSW and local legislation and policies. The Addendum REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. A number of potential environmental impacts from the proposed activity have been avoided or reduced during the concept design development. The proposed activity as described in the Addendum REF best meets the project objectives. The proposed modification will result in beneficial impacts by providing a service essential for the development of the area which greatly benefits the community by reducing the overall demand on potable water supplies and therefore helping to ensure security of supply.

This Addendum REF has been prepared in accordance with Section 5.5 of the EP&A Act. It has concluded that the proposed activity is unlikely to significantly affect the environment and hence an EIS is not required

to be prepared under section 5.7 of the EP&A Act. The proposed activity is also unlikely to affect Commonwealth land or have an impact on any matters of national environmental significance.

This Addendum REF has also been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA and the *Water Industry Competition (General) Regulation 2008*. It is considered that the proposed activity is unlikely to present a significant risk of harm to the environment and approval of network operator's licence under the WICA and the *Water Industry Competition (General) Regulation 2008* would be in the public interest.

Amongst other benefits the proposed activity will provide benefits for current and proposed residential subdivisions in the area by the provision of reticulated recycled water to meet daily water demands for authorised purposes.

9 DECLARATION

I certify that I have prepared the contents of this Addendum REF and to the best of my knowledge:

- It is in accordance with Section 5.5 of the *Environmental Planning and Assessment Act 1979* and clause 228 of the *Environmental Planning and Assessment Regulation 2000*;
- It examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment as a result of the activities associated with this project;
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead; and
- Has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA and the *Water Industry Competition (General) Regulation 2008*.

The proposed activity is not likely to significantly affect the environment and may be approved subject to mitigation measures detailed in this document. No EIS is required.

The proposed activity is unlikely to present a significant risk of harm to the environment and approval of network operator's licence under the WICA and the *Water Industry Competition (General) Regulation 2008* would be in the public interest.

Signed:



Name: Rob Dwyer

Position: RPS, Planning Manager - Newcastle

Date: 2 July 2019

10 REFERENCES

- Australian Standards S2436 (1981). *Guide to noise control on construction, maintenance and demolition sites.*
- Douglas Partners (2010). *Preliminary Geotechnical and Groundwater Assessment, Shepherds Bay, NSW.*
- Douglas Partners (2010). *Preliminary Screening Contamination Assessment, Shepherds Bay, NSW.*
- Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council and the National Health and Medical Research Council (2006). *Australian Guidelines for Water Recycling*
- EPA (2009). *Interim Construction Noise Guideline*
- EPA (2014). *Waste Classification Guidelines – Part 1: Classification of waste*
- Landcom (2004). *Managing Urban Stormwater: Soils and Construction (4th Edition)*
- Water Services Association of Australia (2011). *Water Supply Code of Australia Version 3.1*
- Statement of Environmental Effects, Residential Apartment Development, 102 – 104 Bowden Street, Meadowbank (Stage 7A, City Plan Services, December 2017)

Appendix A

Consideration of Clause 228 factors and matters of national environmental significance

The following factors, listed in Clause 228(2) of the Environmental Planning and Assessment Regulation 2000, are required to be considered to assess the likely impacts of the proposed activity on the natural and built environment.

Factor	Impact
<p>1. Any environmental impact on a community?</p> <p>The proposed modification is the construction and operation of a pressure sewage reticulation system and a recycled water reticulation system to service Stages 2 to 9 of the Shepherds Bay Urban Renewal Project area which is approximately 1,750 dwellings. The environmental impact on the community will result in the efficient and hygienic removal of sewage from the new residential area.</p> <p>There may be temporary impacts from increase in traffic and noise during the construction of the proposed activity. Deliveries and vehicle movements will only occur during the following times: Monday to Saturday 7am to 6pm. No construction work or deliveries will occur on Sundays or public holidays. Construction will take approximately 3 months per stage. A CEMP will be prepared prior to commencement of works.</p>	<p>Positive long-term benefits</p> <p>Contractor will manage short-term negative impacts</p>
<p>2. Any transformation of a locality?</p> <p>The site is located within an area undergoing urban renewal. The proposed modification is an essential element of the development of the Shepherds Bay development area. The proposed activity will be sympathetic to its location.</p>	<p>Positive – long term impacts that will accommodate existing and future development.</p>
<p>3. Any environmental impact on the ecosystems of the locality?</p> <p>Construction is unlikely to have an impact on biodiversity due to the modified and disturbed nature of the local environment. The proposed activity does not propose to remove any trees. The existing physical condition of the site (cleared land and the non-removal of street trees) is such that it does not have any ecological attributes which, if lost, would impact upon any threatened species, population, ecological community or habitat.</p> <p>Hence the proposed activity will have no significant impact on threatened species, populations and ecological communities listed pursuant to the BC Act.</p> <p>Mitigation measures will be incorporated into the CEMP for the site to ensure that the impact of the proposed activity on the environment is minimised.</p>	<p>Long term negative impacts of vegetation removal have been determined to be minor.</p> <p>Mitigation measures will reduce environmental impact on ecosystems.</p>
<p>4. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</p> <p>The proposed modification will not reduce the aesthetic values of the site as the activities are part of the Shepherds Bay development area which include installation of underground services.</p>	<p>Neutral impact – consistent with existing and desired future values.</p>
<p>5. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?</p> <p>The proposed activity does not impact on any identified areas of anthropological, cultural, historical, scientific or social significance.</p>	<p>Neutral impact.</p>
<p>6. Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?</p> <p>No significant impact pursuant to the BC Act will occur as a result of the proposed activity.</p>	<p>No impact identified within the meaning of the NPW Act 1974, and no significant impact pursuant to the BC Act.</p>

Factor	Impact
<p>7. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>The proposed modification is unlikely to have a significant impact on any threatened species, populations, ecological communities or migratory species in the locality.</p>	Impact unlikely.
<p>8. Any long-term effects on the environment?</p> <p>The development of the proposed modification will not result in any long term effects on the environment additional to those which have been addressed in previous assessments associated with the Shepherds Bay development area (Concept Plan MP09_0216 - as modified) and more recent local development applications including LDA 2018/0048 for Stage 7A</p>	Unlikely to be any long-term impacts. Short-term impacts will be reduced through appropriate mitigation and management.
<p>9. Any degradation of the quality of the environment?</p> <p>The trenching required may temporarily degrade the quality of the existing environment. This impact is to be mitigated through erosion and sediment controls.</p>	Degradation will be mitigated through appropriate management.
<p>10. Any risk to the safety of the environment?</p> <p>The proposed modification may pose a minor risk to the environment if the necessary use of fuels, oils, greases and chemicals are discharged into the stormwater system if they are inappropriately stored. This risk is considered minimal and the occurrence of environmental hazards is considered to be extremely low.</p> <p>Impacts on the environment will be reduced by implementing effective storage of hazardous materials, erosion and sediment controls, appropriate stormwater and nutrient control systems to reduce the effects of runoff and ensure water flowing off the proposed activity area is of a suitable quality, ensuring that there are no accidental incursions into areas which are not subject to the proposed activity.</p>	Risks will be managed through appropriate controls.
<p>11. Any reduction in the range of beneficial uses of the environment?</p> <p>As the proposed modification is to be built in unison with the orderly development of Shepherds Bay development area no reductions in the range of beneficial uses of the environment are likely.</p>	No significant reduction identified.
<p>12. Any pollution of the environment?</p> <p>The proposed modification may pose a minor risk to the environment if the necessary use of fuels, oils, greases and chemicals are discharged into the stormwater system if they are inappropriately stored. This risk is considered minimal and the occurrence of environmental hazards is considered to be extremely low.</p>	The risk will be managed through appropriate controls.
<p>13. Any environmental problems associated with the disposal of waste?</p> <p>The proposed activity will be constructed to service apartments within the Shepherds Bay development area. No environmental problems associated with the disposal of waste are likely to result from the proposed activity.</p>	No waste disposal issues likely.
<p>14. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?</p> <p>The proposed modification would not increase demands on resources, natural or otherwise that are or are likely to become in short supply in the future.</p>	No impact identified.
<p>15. Any cumulative environmental effect with other existing or likely future activities?</p> <p>Construction of the reticulation systems will, in-conjunction with the development of Shepherds Bay development area (Concept Plan MP09_0216 - as modified) and more recent local development applications (LDA 2018/0048), allow the provision of recycled water to the area. The proposed activity will contribute to the sustainable operation of the Shepherds Bay community.</p> <p>A minor increase in the movement of vehicles during the construction phase of the proposed activity may be noticed by residences however these will be</p>	Long term positive impact.

Factor	Impact
tempered by the increased vehicle activities associated with progressive development within the Shepherds Bay Urban Renewal Project area.	

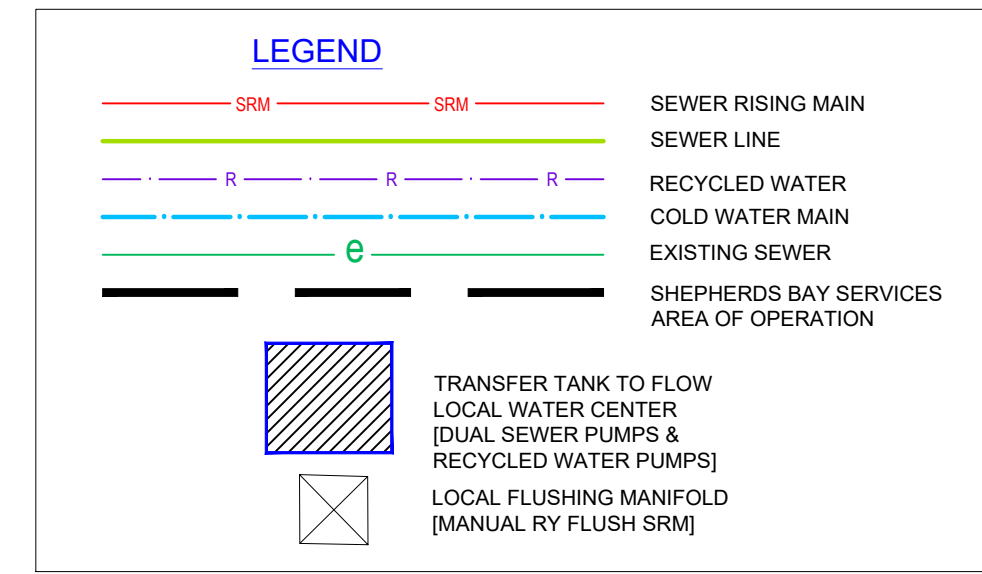
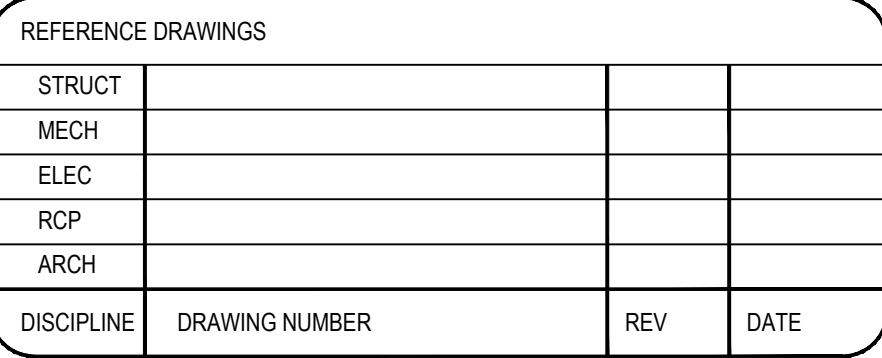
Matters of National Environmental Significance

Under the environmental assessment provisions of the *Environment Protection and Biodiversity Conservation Act 1999*, the following Matters of National Environmental Significance are required to be considered to assist in determining whether the proposed activity should be referred to the Australian Government Department of the Environment and Water Resources.

Factor	Impact
1. Any impact on a World Heritage property?	
There are no world heritage properties within the vicinity of the proposed activity.	Nil
2. Any impact on a National Heritage place?	
There are no National Heritage places within the vicinity of the proposed activity.	Nil
3. Any impact on a wetland of international importance?	
There are no wetlands of international importance located within 5km of the proposed activity.	Nil
4. Any impact on a listed threatened species or communities?	
As described in the REF the existing physical condition of the site (cleared land and the non-removal of street trees) is such that it does not have any ecological attributes which, if lost, would impact upon any threatened species, population, ecological community or habitat.	Nil
The activity is not considered likely to result in a significant environmental impact on any Commonwealth listed migratory species. provided mitigation measures are implemented.	Nil
5. Any impact on a Commonwealth marine area?	
No Commonwealth marine areas are located within 10km of the proposed activity area.	Nil
6. Any impact on the Great Barrier Reef Marine Park?	
The proposed activity will not have a significant adverse effect on the Great Barrier Reef Marine Park, as the site is not within the region.	Nil
7. Does the proposal involve a nuclear action (including uranium mining)?	
The proposed activity will not involve a nuclear action.	Nil
8. Water resource, in relation to coal seam gas development and large coal mining development.	
The proposed activity is not considered to significantly impact upon a water resource, and thus does not contribute to this MNES.	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	
No Commonwealth Land is located in proximity to the proposed activity area.	Nil

Appendix B

Modified sewage reticulation and recycled water plan



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REVISION			REVISION		
AB	REVISED AS BUILT	06/06/19			
AB	AS BUILT	27/02/19			
ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE

flow

PREPARED BY
ALIGN
ENGINEERING
GROUP

PO BOX 8013
PORT MACQUARIE
NSW 2444
T:0403 852 312
ABN2878949310

PROJECT

SHEPHERDS BAY
FLOW INFRASTRUCTURE
MEADOWBANK 2114

PROJECT No.	DATE	DRAWN	No IN SET	SCALE
AEG133	27.02.19	AT	01 OF 01	1:100

DRAWING TITLE

HYDRAULIC SERVICES
LEVEL
DRAINAGE SERVICES

DRAWING No.

FAI-100

AB

CERTIFICATE OF APPROVAL

No. 005-98285-S

This is to certify that the Occupational Health & Safety Management System at

Flow Systems Pty Ltd

of

Level 40, 259 George Street, Sydney, NSW 2000

Has been examined by assessors of QMS Certification Services and found to be conforming to the requirements of:

AS/NZS 4801:2001
OH&S Management Systems

In respect of the following activities:

Design, construction, operation, maintenance and retail supply of drinking water, waste water and recycled water services

This certificate is valid from: 10/08/2018 to 10/08/2021
Original certification date: 03/09/2015



Gerry Bonner, CPEng, BEng, FIE Aust, Chairman – QMSCS Pty Ltd
Approval: QMSCS Pty Ltd Trading as QMS Certification Services
To verify the validity of this certificate please visit www.jas-anz.org/register



QMSCS Pty Ltd
Trading as QMS Certification Services
Suite 404, Level 2 - 161 King St,
Newcastle NSW 2300 Australia



Accreditation Number 03910907AL

Occupational Health & Safety Management System

CERTIFICATE OF APPROVAL

No. 005-98285-S

Schedule of Certified Locations

Flow Systems Pty Ltd

Level 40, 259 George Street, Sydney, NSW 2000
Discovery Point Local Water Centre, Suite 19, 5 Brodie Spark Drive,
Wolli Creek, NSW 2205
Pitt Town Local Water Centre, 83 Bootles Lane, Pitt Town, NSW 2756
Central Park, 80 Broadway, Chippendale, NSW 2008
Green Square Local Water Centre, 3 Joynton Avenue, Zetland, NSW
2017
Cooranbong Local Water Centre, 617 Freemans Drive, Cooranbong,
NSW 2265
Huntlee Local Water Centre, 1794 Wine Country Drive, North
Rothbury, NSW 2335
Melbourne Office, Unit 18, 828 High Street, Kew East, VIC 3102
Box Hill, Lot 10 Red Gables Rd., Box Hill, NSW 2675
Shepherd's Bay, Street Address to be provided, Meadowbank NSW
2114

Occupational Health & Safety Management System



QMSCS Pty Ltd
Trading as QMS Certification Services
Suite 404, Level 2 - 161 King St,
Newcastle NSW 2300 Australia



Accreditation Number 03910907AL

CERTIFICATE OF APPROVAL

No. 005-98285-E

This is to certify that the Environmental Management System at

Flow Systems Pty Ltd

of

Suite 2, Level 40, 259 George Street, Sydney, NSW 2000

Has been examined by assessors of QMS Certification Services and found to be conforming to the requirements of:

ISO 14001:2015
Environmental Management Systems

In respect of the following activities:

Design, construction, operation, maintenance and retail supply of drinking water, waste water and recycled water services

This certificate is valid from: 10/08/2018 to 10/08/2021
Original certification date: 03/09/2015



Gerry Bonner, CPEng, BEng, FIE Aust, Chairman – QMSCS Pty Ltd
Approval: QMSCS Pty Ltd Trading as QMS Certification Services
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Accreditation Number E2550101AM

Environmental Management System

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Rothbury, NSW 2335
Box Hill, Lot 10 Red Gables Rd., Box Hill, NSW 2675
Shepherd's Bay, 10 Nancarrow Ave, Ryde, NSW 2112

Environmental Management System



QMCS Pty Ltd
Trading as QMS Certification Services
Suite 404, Level 2 - 161 King St,
Newcastle NSW 2300 Australia



Accreditation Number E2550101AM

CERTIFICATE OF APPROVAL

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Suite 2, Level 40, 259 George Street, Sydney, NSW 2000

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**OHSAS 18001:2007
OH&S Management Systems**

In respect of the following activities:

Design, construction, operation, maintenance and retail supply of drinking water, waste water and recycled water services

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Original certification date: 03/09/2015



Gerry Bonner, CPEng, BEng, FIE Aust, Chairman – QMSCS Pty Ltd
Approval: QMSCS Pty Ltd Trading as QMS Certification Services
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Occupational Health & Safety Management System



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QMSCS Pty Ltd
Trading as QMS Certification Services
Suite 404, Level 2 - 161 King St,
Newcastle NSW 2300 Australia



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