17 October 2024
Document Ref.: C24004AL001
Contact: Michael Brésil

HURLEY
CONSULTING ENGINEERS

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2024/1545
Date: 10 December 2024

Queensland Government

Economic Development Queensland
C/- Urbis Pty Ltd
Level 32, 300 George Street,
BRISBANE QLD 4000

Attention: Messrs Donaldson and Kelly

PROPOSED MULTPLE DWELLING DEVELOPMENT AT 10 HONEYEATER CIRCUIT, OXLEY INFORMATION REQUEST RESPONSES – EDQ REF: DEV2024/1545

We have reviewed the further issues letter from Economic Development Queensland dated 8th October 2024 in response to the above development application. The following responses are offered to facilitate further assessment and approval of the applications by Council.

5. Engineering Services Report:

a) The Engineering Services Report prepared by Hurley Consulting states that the proposed stormwater approach is consistent with the previously approved site under DEV2023/1383. However, the approved SMP includes different build form and designs. Update the Engineering Report to provide a stormwater management plan to reflect the proposed development.

Response:
The Oxley PDA approved Stormwater Management Plan under reference DEV2020/1099 had allowed for a fraction impervious of 85% for the subject site in the XPRafts model, which was used to design the regional detention basin. The proposed development has an impervious fraction of 79.1%.

The proposed development is consistent with the previously approved regional Stormwater Management Plan as the proposed imperviousness is less than the design imperviousness for the site. On this basis, no on-site stormwater detention or additional quality treatment are proposed.

The civil engineering services report has been updated to reflect this additional information.

b) The approved SMP identifies that the local 1% AEP flood level adjacent to the north-western boundary is primarily 12.36m AHD, increasing to 14.09m AHD upstream in the water corridor in front of the adjacent property. However, the Engineering Report nominates 12.1m AHD level for the site. Please clarify and confirm the building levels.

Response:
The previously approved master stormwater management plan prepared by ACOR Consultants (issued the 4th November 2022) identifies that there is flooding along the northern boundary of the site within the drainage reserve. The water surface level during a 1% AEP flood event along the northern boundary is approximately RL12.36m AHD. The entire site has previously been filled above that level and has been shown to have flood immunity up to the 1% AEP Flood event as shown in the below snippet from the ACOR report.

17 October 2024
Document Ref.: C24004AL001
Contact: Michael Brésil

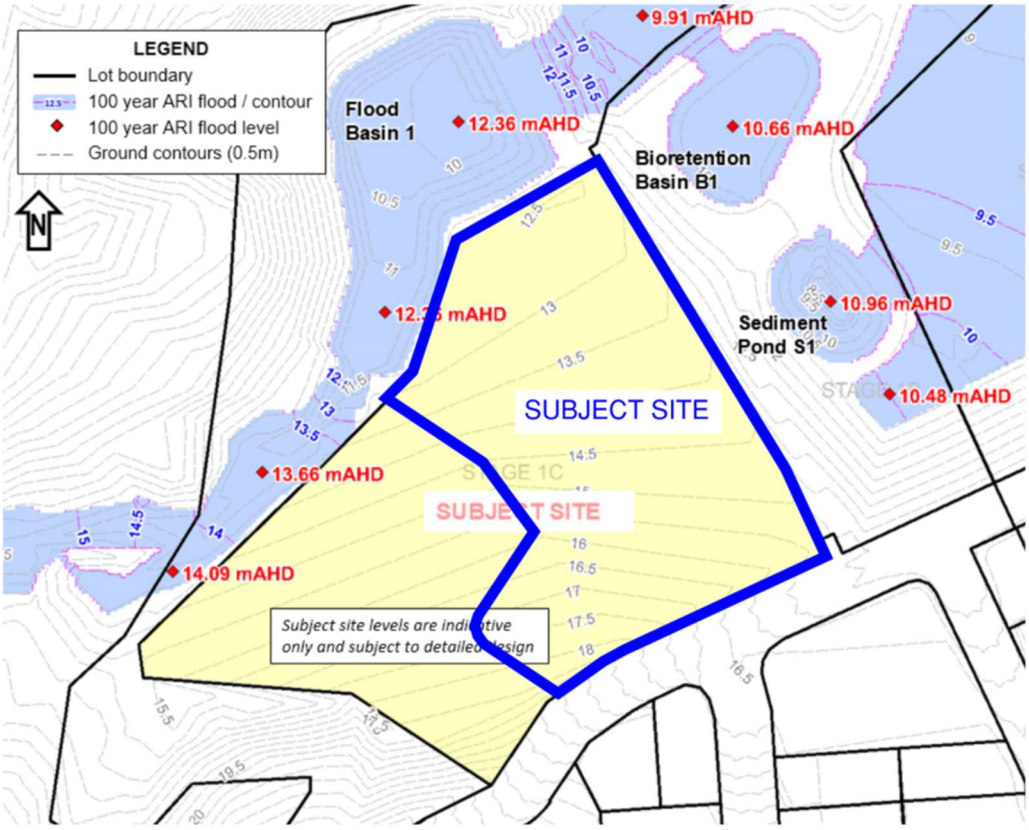


Figure 1: 100 year ARI flood levels

The minimum habitable floor level for residential dwellings within the site is RL13.00m AHD, which is 640mm above the 1% AEP peak flood level along the boundary of the site.

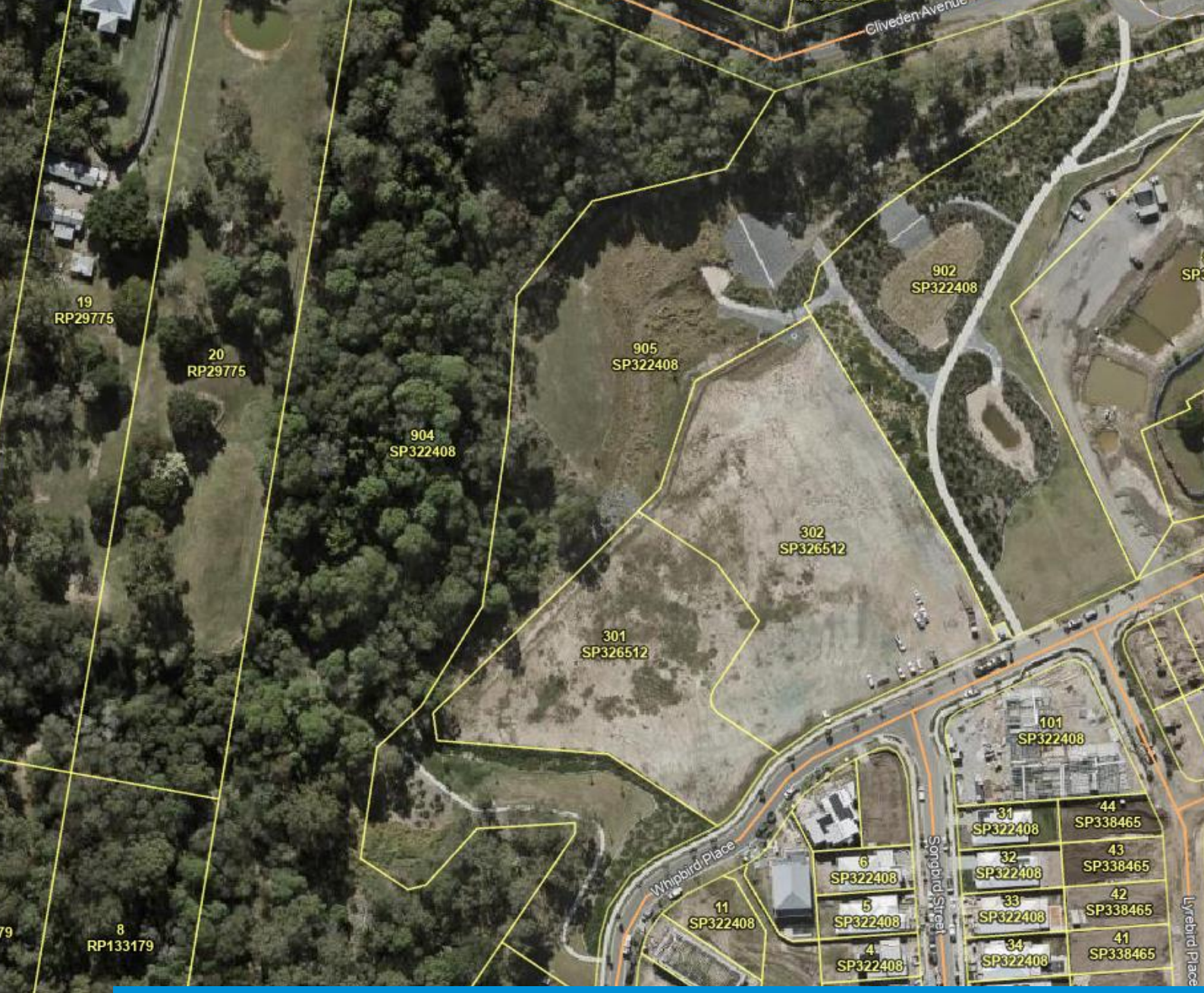
The civil engineering services report has been updated to reflect this additional information.

We trust that this additional information will facilitate assessment and approval of this development application by Economic Development Queensland. No civil engineering constraints remain that, in our opinion, should preclude approval of this application with reasonable and relevant conditions.

Please do not hesitate to contact the undersigned if you wish to discuss or clarify any aspects of this proposal.

Yours faithfully
For and on behalf of
Hurley Consulting Engineers Pty Ltd

MICHAEL BRESIL BE(Civil) MIEAust CPEng RPEQ 28127
SENIOR ENGINEER



CIVIL ENGINEERING SERVICES REPORT

PROPOSED TOWNHOUSE DEVELOPMENT
10 HONEYEATER CIRCUIT, OXLEY

PREPARED FOR HONEYCOMBES DEVELOPMENTS PTY LTD
C24004AR001

HURLEY
CONSULTING ENGINEERS

TABLE OF CONTENTS

Revision	Date	Author	Verifier	Approver
A	22/08/2024	RW	CH	CH
B	17/10/2024	RW	CH	CH

Approved for issue for and on behalf of Hurley Consulting Engineers Pty Ltd

Craig Hurley BE(Civil) MIEAust CPEng RPEQ 15957
Director & Principal Civil Engineer

1 INTRODUCTION

Hurley Consulting Engineers has been commissioned by Honeycombes Developments Pty Ltd to prepare a Civil Engineering Services Report for a proposed townhouse development at 10 Honeyeater Circuit, Oxley. The development will comprise of 34 new townhouses as shown on the architectural plans prepared by Arqus enclosed in **Appendix A**.

The intent of this report is to review existing infrastructure in the vicinity of the site and to demonstrate how the proposed development can be serviced in general accordance with the local planning scheme requirements.

2 SITE DESCRIPTION

The subject site is located at 10 Honeyeater Circuit, Oxley, on land described as Lot 302 on SP326512. The site has an area of approximately 9,644m^2 and is located within the Brisbane City Council local government area and the Oxley Priority Development Area (PDA).

Figure 2.1 – Locality Plan
Image Source: QLD Globe 2024

The subject site is currently surrounded by Honeyeater Circuit and Whipbird Place to the south, an existing regional detention basin to the north, an existing bioretention basin to the north-east and new residential developments in construction to the west. The site ranges in elevation from approximately RL 12.5m AHD at the northern boundary of the site to RL 19.0m AHD in the south-western corner of the site.

The subject site is within the Oxley Priority Development Area (PDA) under QLD Government Department of State Development reference DEV2021/1191 located at 53 Seventeen Mile Rocks Road, Oxley QLD 4075. Previously, the site has been approved for a Retirement Facility and Multiple Dwelling, Community Use, Food and Drink Outlet and Sales Office under QLD Government Department of State Development reference DEV2023/1383, however, the new layout is changed to a proposed townhouse development, so a new application is required.

3 FILLING & EXCAVATION

Based on the Brisbane City Council (BCC) FloodWise Property Report obtained for this site, the Residential Flood Level (RFL) is RL 11.6m AHD associated with a Brisbane River flood source. The previously approved master stormwater management plan prepared by ACOR Consultants (issued the 4th November 2022) identifies that there is an overland flow path along the northern boundary within the drainage reserve. Water surface level during a 1% AEP flood event along the northern boundary is approximately RL12.36m AHD. The entire site has previously been filled above that level and has been shown to have flood immunity up to the 1% AEP Flood event as shown in the **Figure 3.1**.

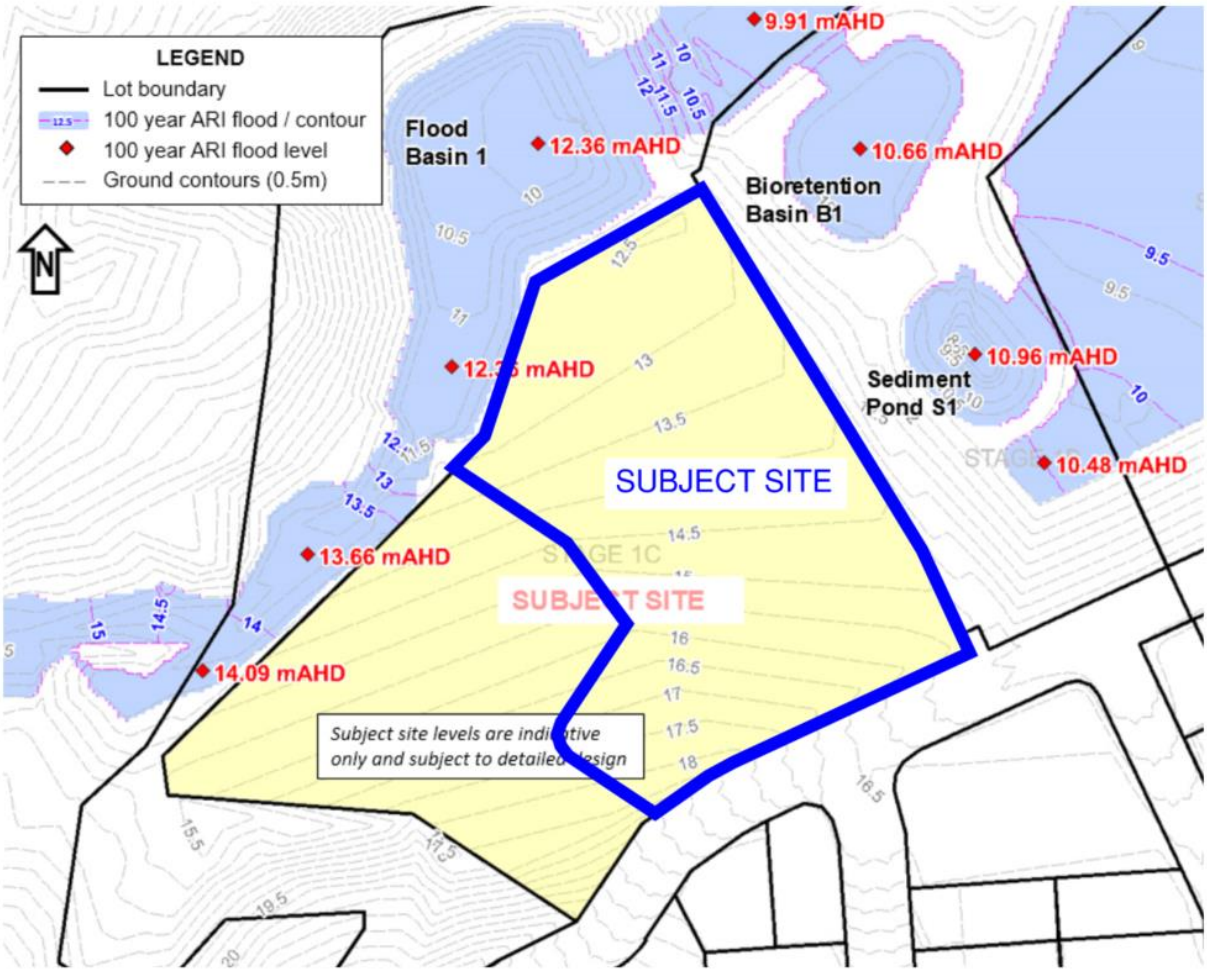


Figure 3.1. Extract of 1% AEP Flood Map (ACOR Consultants)

The minimum habitable floor level for residential dwellings within the site is RL13.00m AHD, which is 640mm above the 1% AEP peak flood level along the boundary of the site.

Filling and excavation are proposed to provide the new building pad levels and to construct the new private roadways, associated stormwater drainage and sewer main reticulation within the site. The existing fall generally to the north will be maintained.

Retaining walls are proposed to facilitate level building pads for dwelling footings. The maximum retaining wall height for the development is expected to be approximately 1.85m however they will not be visible from outside the development. On that basis, retaining walls are not anticipated to cause any amenity impacts to the surrounding development. All filling will be undertaken in accordance with Brisbane City Council planning scheme requirements and the requirements of AS3798 for Level 1 filling.

Construction phase stormwater quality can be managed by implementing appropriate erosion and sediment control techniques during the construction phase. Erosion and sediment control guidance is given in the International Erosion Control Association (IECA) Australasia Best Practice Erosion and Sediment Control (BPESC) document. The IECA BPESC documents are available for download from the IECA website.

The proposed extents of cutting and filling are shown on the Concept Bulk Earthworks Layout Plan enclosed in **Appendix C**. Final site levels will be subject to confirmation in a future operational works application to Council.

Responses to the Brisbane City Council Filling & Excavation Code are included in **Appendix D**. An Erosion Hazard Assessment Form has been completed and is enclosed in **Appendix E**. The Erosion Hazard Assessment Form suggests that the proposed development has a 'medium' risk of soil erosion and sediment pollution to the receiving environment.

4 ROADWORKS & SITE ACCESS

The site has road frontage to Whipbird Place and Honeyeater Circuit. Access into the new townhouse development is intended to be provided by a new concrete crossover from Whipbird Place in accordance with BCC standard drawings. No other external roadwork is proposed, as Whipbird Place and Honeyeater Circuit are both fully sealed roads with kerb & channel.

New private access roads will provide access to each dwelling and the common facilities. Refuse collection will be provided from the new private access roads via kerbside collection and mobile wheelie bins. Adequate space can be provided on site for refuse collection manoeuvring and for the storage, loading and unloading of bins.

The development incorporates a pedestrian connection to the adjacent property (Lot 301 on SP326512) at 11 Whipbird Place, Oxley, to provide access to shared communal facilities.

The proposed access and driveway arrangements are shown on the Conceptual Civil Servicing Plan enclosed in **Appendix C.**

5 STORMWATER DRAINAGE

The site currently flows overland towards the existing stormwater drainage network along the northern boundary of the site. Detailed site survey identifies an existing stormwater pit and pipe at the north-eastern corner of the site which directly connects into a diversion stormwater manhole to the north-east of the site.

Frequent flows from the site are diverted into an existing regional bioretention basin to the east of the site to be treated in accordance with the Oxley PDA approved Stormwater Management Plan under reference DEV2020/1099. Major flows from the site are discharged into the regional detention basin to the north of the site, eventually draining to a tributary of the Brisbane River. It is proposed to maintain the existing discharge arrangement.

The Oxley PDA approved Stormwater Management Plan under reference DEV2020/1099 had allowed for a fraction impervious of 85% for the subject site in the XPRafts model, which was used to design the regional detention basin. The proposed development has an impervious fraction of 79.1%.

The proposed development is consistent with the previously approved regional Stormwater Management Plan as the proposed imperviousness is less than the design imperviousness for the site. On this basis, no on-site stormwater detention or additional quality treatment are proposed.

The development is proposed to have new underground stormwater pipes within the new private roads draining generally from south to north, that will directly connect into the existing stormwater drainage network at the north-eastern corner of the site. This approach is consistent with the previously approved Stormwater Management Plan for the site under reference DEV2023/1383.

The internal and external drainage system is shown on the Concept Civil Servicing Plan enclosed in **Appendix C**. Responses to the Brisbane City Council Stormwater Code are included in **Appendix D**.

6 SEWERAGE RETICULATION

Urban Utilities GIS mapping and detailed site survey identify an existing sewerage reticulation main and maintenance hole located within the south-west portion of the site. This existing sewerage maintenance main runs through the site and discharges into an existing sewer maintenance hole located on the northern verge of Honeyeater Circuit.

It is proposed to realign the existing public gravity sewerage main to avoid clashing with buildings and other services. Private sewerage reticulation is proposed to connect into the existing public sewerage main within the site to service the development. The lower northern portions of the site will drain to a private sewer pump located near the north-eastern corner of the site. The private rising main from the private pump station will discharge to the public sewerage main within the site via a private discharge manhole.

The existing Council sewerage mains and the proposed sewer servicing arrangements are shown on the Concept Civil Servicing Plan enclosed in **Appendix C.** It is noted that final alignments, levels, and sites will be confirmed by a hydraulic engineer and detailed design phase; and is therefore subject to change.

Water and sewerage applications are assessed by Urban Utilities independently of the development application to EDQ. A separate application will be submitted to Urban Utilities to confirm the proposed water and sewerage servicing arrangements.

7 WATER RETICULATION

Urban Utilities GIS mapping and detailed site survey identifies an existing 180mm diameter PE water reticulation main located on the northern verge of Honeyeater Circuit. An existing connection point has previously been provided from this existing water reticulation main, located near the south-eastern corner of the site. This existing stub will be the point of connection for the proposed development.

Each lot will have access to new water reticulation within the site that connects to a new commercial water meter at the existing connection point. An internal firefighting system will also be required to provide fire hydrant coverage for each building in accordance with NCC requirements.

The existing Council water mains and the proposed water servicing arrangements are shown on the Concept Civil Servicing Plan enclosed in **Appendix C.** It is noted that final alignments, levels, and sites will be confirmed by a hydraulic engineer and detailed design phase; and is therefore subject to change.

Water and sewerage applications are assessed by Urban Utilities independently of the development application to Brisbane City Council. A separate application will be submitted to Urban Utilities to confirm the proposed water and sewerage servicing arrangements.

8 CONCLUSION

Hurley Consulting Engineers has been commissioned by Honeycombes Developments Pty Ltd to prepare a Civil Engineering Services Report for a proposed townhouse development at 10 Honeyeater Circuit, Oxley. The development will comprise of 34 new townhouses as shown on the architectural plans prepared by Arqus enclosed in **Appendix A**.

This report has reviewed existing infrastructure in the vicinity of the site and demonstrated how the proposed development can be serviced in general accordance with the local planning scheme requirements. Concept civil engineering plans are included in **Appendix C** to show the likely servicing and earthworks arrangements for the proposed development.

Responses to the relevant Brisbane City Council planning scheme codes are enclosed in **Appendix D** to demonstrate general compliance with those parts of the planning scheme. An Erosion Hazard Assessment Form is enclosed in **Appendix E**, which suggests that the proposed development has a 'medium' risk of soil erosion and sediment pollution to the receiving environment.

No civil engineering constraints have been identified that, in our opinion, would preclude approval of the proposed development with reasonable and relevant conditions.

Appendix A – Architectural Plans

1 SITE PLAN- GFA GROUND FLOOR
1 : 250

NOTES:
REFER REFERENCED DRAWINGS BELOW FOR THE RELEVANT CONSULTANT INFORMATION FOR CIVIL INFRASTRUCTURE, LOT BOUNDARIES, LANDSCAPE DETAILS, LEVELS AND FALLS.
VERIFY ALL REFERENCED INFORMATION ON THIS PLAN WITH THE RELEVANT CONSULTANT DRAWINGS AND NOTIFY OF NEW INFORMATION MADE AVAILABLE OR OF ANY DISCREPANCIES.

REFERENCED DRAWINGS:

LANDPARTNERS- BUILT ENVIRONMENT CONSULTANTS
DETAIL SURVEY
PLAN REFERENCE BRSS8271-000-3-1

RPS GROUP
OXLEY LANDSCAPE BASE- SKETCH
PLAN REFERENCE 004868

ABBREVIATIONS

CODE	DESCRIPTION
LRB	LETTER BOX

Arqus DESIGN

Integrated perspective

Arqus Design Pty Ltd
ABN 68 135 616 303

Level 2 15 Malt Street
Fortitude Valley Qld 4006
PO Box 2455
New Farm Qld 4005

Registration:
Nominated Architect: Scott Peabody
QLD: 2644
NSW: 9038
VIC: 800111 (Arqus Design 600035)

mail@arqusdesign.com.au
www.arqusdesign.com.au

Phone 07 3358 0888
Fax 07 3358 0899

Arqus Design acknowledges the Traditional Owners of Country on which we live, work and design and pay our respects to their Elders, past and present.

NOTES

Detail applicable to the scale of the drawing published.

DATE	REVISION	ISSUE
29/05/24	FOR INFORMATION	A
30/05/24	FOR INFORMATION	B
04/07/24	FOR INFORMATION	C
18/07/24	SITE PLAN- UPDATE	D
19/07/24	PRELIMINARY DA PACKAGE	E
23/07/24	PRELIMINARY DA PACKAGE-UPDATED	F
31/07/24	SITE PLAN-UPDATE	G
20/08/24	SITE PLAN- UPDATE	H
21/08/24	PRELIMINARY DA PACKAGE	I

CLIENT

HONEYCOMBES PROPERTY GROUP

PROJECT

OXLEY RESIDENTIAL DEVELOPMENT

10 HONEYEATER CIRCUIT, OXLEY
LOT 302 ON SP326512

Country: Yugara & Yugarabul

DRAWING

SITE PLAN -GROUND FLOOR

JOB NUMBER	DESIGN	DRAWN	CHECKED
23-0069	SP	ZC	SP

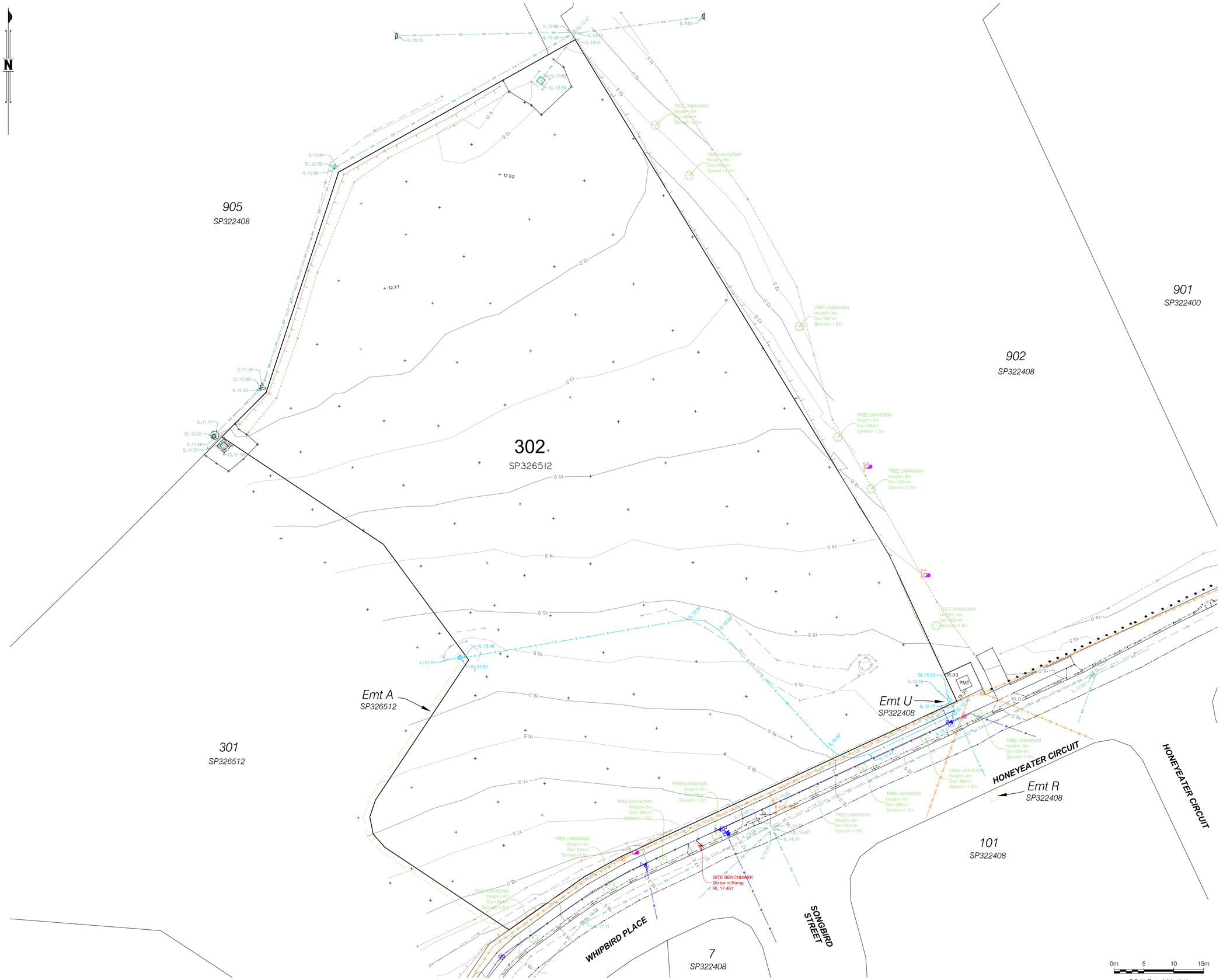
SCALE	DATE CREATED	NORTH
1 : 250 @A1 @A3	29/02/24	

DRAWING NUMBER: **A1-1-01**
ISSUE: **I**

ISSUED FOR: **PRELIMINARY**
21/08/2024 4:39:26 PM

C:\Local Revit Files\23-0069_Oxley Residential_SITE_Central_NEW_Zuly.Casas.rvt

Appendix B – Detailed Site Survey



CLIENT

HONEYCOMBES DEVELOPMENTS PTY LTD

PROJECT

DETAIL SURVEY
OF
LOT 302 ON
SP326512
(Honeyeater Circuit, Oxley)

NOTES

(i) This plan has been prepared for the exclusive use of Honeycombes and their consultants for design purposes and is not to be used for any other purpose or by any other entity without the express permission of LandPartners Pty Ltd.

(ii) The title boundaries as shown hereon were not marked or surveyed at the time of survey and have been determined from the dimensions shown on plans of survey registered in the Department of Resources.

(iii) Services shown hereon have been located where visible by field survey. If not able to be so located, services have been plotted from LandPartners AsConstructed Surveysthe records of relevant authorities where available and have been noted or symbolised accordingly. Where such records do not exist or are inadequate a notation has been made hereon.

(iv) Underground connections between services have been joined based on relevant authority records and have been symbolised accordingly.

(v) Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

(vi) This data should not be reproduced in any way without the permission of LandPartners Pty Ltd. Any reproduction of this data must contain these notes

1	MJT	6/10/2022	Initial Issue

SYM	CODE	DESCRIPTION
	BM	BENCHMARK
	BOL	BOLLARD
	CP	COLUMN / PILLAR
	EBX	ELECTRICAL BOX
	ECM	ELEC CABLE MARKER
	ELP	ELEC/LIGHT POLE
	EM	ELECTRICAL PIT
	EP	ELECTRICITY POLE
	ESP	ELECTRICITY STAY POLE
	FH	FIRE HYDRANT
	FHP	FIRE HYDRANT PILLAR
	FP	FLAG POLE
	GMH	GAS MANHOLE
	GMK	GAS MARKER
	GP	GUIDE POST
	GS	GUIDE SIGN
	GT	GULLY TRAP
	GV	GAS VALVE
	HB	HOSE BOX/REEL
	HM	HYDRANT MARKER
	MHU	MANHOLE UNKNOWN
	PLM	PALM TREE
	PIL	TELECOM PILLAR
	PKM	PARKING METER
	PSM	PERM. SURVEY MARK
	SEV	SEWERAGE VENT
	SHB	SHRUB

SYM	CODE	DESCRIPTION
	SGN	SIGNS
	SIO	INSPECTION OPENING
	SM	SEWERAGE MANHOLE
	SN	STREET NAME SIGN
	SPR	SPRINKLER
	SPR	TREE
	SSV	STOP/SLUICE VALVE
	STN	SURVEY STATION
	SW	STORMWTR. MANHOLE
	TAP	TAP
	TE	TELECOM PIT
	TM	TELECOM MANHOLE
	TOH	TRANSFORMER O/HEAD
	TP	TELEPHONE POLE
	TRL	TRAFFIC LIGHTS
	TRP	TRAFFIC PIT
	WAV	WATER AIR VALVE
	WCU	WATER END CAP
	WM	WATER METER
	WMH	WATER MANHOLE
	WPR	WATER REDUCER
	WRV	WATER REFLUX VALVE
	WSP	WATER SAMPLE POINT
	WSV	WATER SCOUR VALVE
	WTE	WATER TEE JUNCTION
	WV	WATER VALVE
	WVM	WATER VALVE MARKER

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

Services from LandPartners AsConstructed Surveys:

DRAINAGE PIPE U/G — SW
SEWERAGE PIPE — S
WATER PIPE — W

Services complied from design (not surveyed):

ELEC. CABLE U/G — EL - ID

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built environment consultants

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Milton Qld 4064

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e: info@landpartners.com.au
w: www.landpartners.com.au

bsi. ISO 9001 Quality Management
ISO Nos: FS 510063

LEVEL DATUM AHD D	LOCAL AUTHORITY BRISBANE C.C.
LEVEL ORIGIN PSM50046 RL28.007	SCALE 1:300 (A1)
MERIDIAN MGA	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM Arbitrary Plane	DRAWN MJT — DATE 6/10/2022
SURVEYOR MJT — DATE OF SURVEY 5/10/2022	CHECKED RGA — DATE 7/10/2022
FIELD FILE BRSS8271-000-2	APPROVED RGA — DATE 7/10/2022
UDN	SHEET $(FIX,??) OF ?

BRSS8271-000-3-1

Appendix C – Conceptual Civil Plans

BULK EARTHWORKS LAYOUT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGN	CHECK
A	PRELIMINARY DESIGN	06/04/24	JH	JH	CH
2	ARCHITECTURAL LAYOUT AND DESIGN LEVELS UPDATED	21/08/24	HW	HW	CH

LOT DESCRIPTION:
Lot 302 SP326512
HORZ. DATUM: LOCAL
SCREW IN RAMP RL 17.451

APPROVED FOR AND ON BEHALF OF HURLEY CONSULTING ENGINEERS PTY LTD:

NAME: CRAIG HURLEY
RPEQ NO: 15957

ORIENTATION & SCALES:

0 2.5 5 10 15
A1 1:250 ; A3 1:500
Scale (m)
DO NOT SCALE FROM DRAWING

NOTES:
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HURLEY CONSULTING ENGINEERS
PO BOX 417
CARINA QLD 4152
TELEPHONE: 0432 418 815
EMAIL: mail@hurleyce.com

CLIENT: HONEYCOMBES DEVELOPMENTS PTY LTD

DEVELOPMENT APPLICATION NO:

LOCAL GOVERNMENT AUTHORITY: BRISBANE CITY COUNCIL

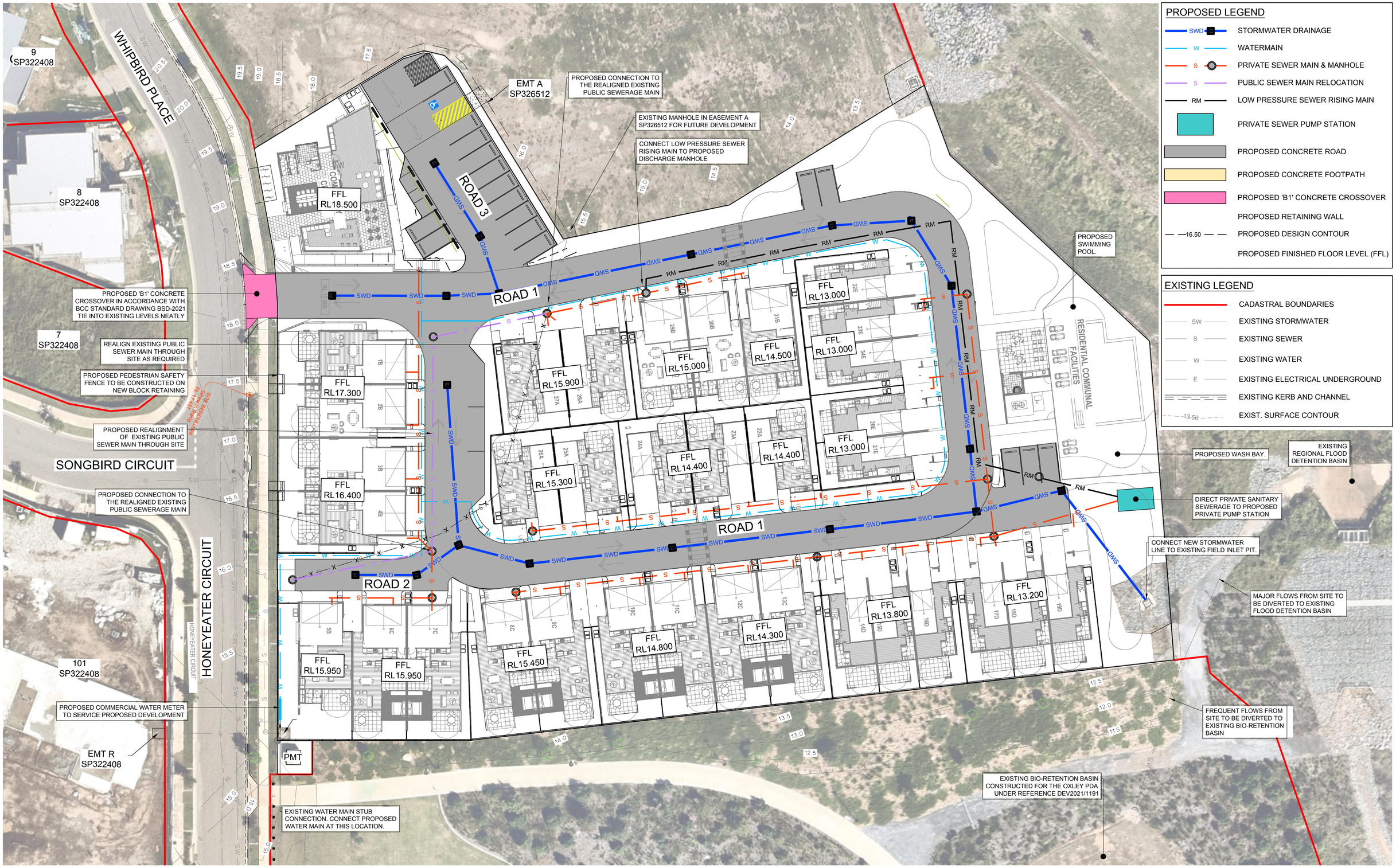
PROJECT: PROPOSED TOWNHOUSE DEVELOPMENT
10 HONYEATER CIRCUIT, OXLEY

DRAWING TITLE: CONCEPT BULK EARTHWORKS LAYOUT PLAN

ORIGINAL SIZE: A1

DRAWING No.: C24004A-SK-C100

REV: B



PROPOSED LEGEND

- STORMWATER DRAINAGE
- WATERMAIN
- PRIVATE SEWER MAIN & MANHOLE
- PUBLIC SEWER MAIN RELOCATION
- LOW PRESSURE SEWER RISING MAIN
- PRIVATE SEWER PUMP STATION
- PROPOSED CONCRETE ROAD
- PROPOSED CONCRETE FOOTPATH
- PROPOSED 'B1' CONCRETE CROSSOVER
- PROPOSED RETAINING WALL
- PROPOSED DESIGN CONTOUR
- PROPOSED FINISHED FLOOR LEVEL (FFL)

EXISTING LEGEND

- CADASTRAL BOUNDARIES
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING WATER
- EXISTING ELECTRICAL UNDERGROUND
- EXISTING KERB AND CHANNEL
- EXIST. SURFACE CONTOUR

CIVIL SERVICING LAYOUT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGN	CHECK
A	PRELIMINARY DESIGN	06/04/24	JH	JH	CH
2	ARCHITECTURAL LAYOUT AND DESIGN LEVELS UPDATED	21/08/24	HW	HW	CH

LOT DESCRIPTION:
Lot 302 SP326512
HORZ. DATUM: LOCAL
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CARINA QLD 4152
TELEPHONE: 0432 418 815
EMAIL: mail@hurleyce.com

CLIENT: HONEYCOMBES DEVELOPMENTS PTY LTD

DEVELOPMENT APPLICATION NO:

LOCAL GOVERNMENT AUTHORITY: BRISBANE CITY COUNCIL

PROJECT: PROPOSED TOWNHOUSE DEVELOPMENT
10 HONYEATER CIRCUIT, OXLEY

DRAWING TITLE: CONCEPT CIVIL SERVICING LAYOUT PLAN

ORIGINAL SIZE: A1

DRAWING No.: C24004A-SK-C200

REV: B

Appendix D – Planning Scheme Code Responses

HURLEY
CONSULTING ENGINEERS

FILLING AND EXCAVATION CODE

Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO1 Development for filling and excavation minimises visual and amenity impacts from retaining walls and excessive earthworks.	**AO1** Development ensures that the total height of any cut and fill, whether or not retained, does not exceed: (a) 2.5m in industrial zones; (b) 1m in all other zones, or if adjoining a sensitive zone.	✓	Retaining walls will be located within the site boundaries. Retaining walls are not proposed to be terraced because amenity impacts are negligible.	
PO2 Development of a retaining wall proposed as a result of filling or excavation: (a) does not impact adversely on adjoining land and vegetation; (b) has a high-quality finish; (c) is capable of easy maintenance. Editor's note—A retaining wall also needs to comply with the Building Regulation and embankment gradients will need to comply with the Building Regulation.	**AO2.1** Development of a retaining structure, including footings, surface drainage and subsoil drainage: (a) is wholly contained within the site; (b) if the total height to be retained is greater than 1m, then: (i) the retaining wall at the property boundary is no greater than 1m above the ground level; (ii) all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1 horizontal unit; (iii) the distance between each successive retaining wall (back of lower wall to face of higher wall) is no less than 1m horizontally to incorporate planting areas.	✓ ✓		

HURLEY
CONSULTING ENGINEERS

FILLING AND EXCAVATION CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	AO2.2 Development of a retaining wall over 1m in height protects vegetation on the site and on adjoining land.	✓	All earthworks will be constructed in accordance with AS3798 and Brisbane City Council requirements.	
	AO2.3 Development provides a retaining wall finish that presents to adjoining land that is maintenance free if the setback is less than 750mm from the boundary.	✓		
	AO2.4 Development for filling only uses clean fill that does not include any construction rubble or debris.	✓		
PO3 Development ensures that a rock anchor is designed and constructed to be fit for purpose.	**AO3** Development ensures that a rock anchor: (a) is constructed in accordance with the standards in the Infrastructure design planning scheme policy; (b) which extends beyond the property boundary, is supported by a letter of consent from the adjoining land and building owners.	N/A	No rock anchors are proposed.	
PO4 Development protects all services and public utilities.	**AO4** Development protects services and public utilities and ensures that any alteration or relocation of services or public utilities meets the standard design specifications of the responsible service authorities.	✓	All operational works are to be carried out in accordance with the Brisbane City Council's Planning Scheme Policy (Infrastructure Design).	

FILLING AND EXCAVATION CODE

Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO5 Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.	**AO5** Development ensures all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain, including to the top or toe of a retaining wall in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	✓	All operational works are to be carried out in accordance with the Brisbane City Council's Planning Scheme Policy (Infrastructure Design).	
PO6 Development ensures that the design and construction of all open drainage works is undertaken in accordance with natural channel design principles, being the development of a stormwater conveyance system for major flows, by using a vegetated open channel or drain that approximates the features and functions of a natural waterway to enhance or improve riparian values of those stormwater conveyance systems. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.	**AO6** No acceptable outcome is prescribed.	N/A	No open drainage work is proposed.	

FILLING AND EXCAVATION CODE

Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO7 Development for filling or excavation: (a) does not degrade water quality or adversely affect environmental values in receiving waters; (b) ensures site sediment and erosion control standards are best practice.	**AO7.1** Development or filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy **AO7.2** Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	✓ ✓	Erosion and sediment control plans will be prepared and implemented for the project in accordance with Brisbane City Council requirements.	
PO8 Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised. Note—The preparation of a noise and dust impact management plan in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome	**AO8.1** Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site. **AO8.2** Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.	✓ ✓	Erosion and sediment control plans will be prepared and implemented for the project in accordance with Brisbane City Council requirements.	
PO9 Development ensures that vibration generated by the filling or excavation operation does not exceed the vibration criteria in Table 9.4.3.3.D, Table 9.4.3.3.E, Table 9.4.3.3.F and Table 9.43.3.G. Note—A noise management report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO9** Development involving filling excavation does not cause a ground-borne vibration beyond the boundary of the site.	✓	To be managed by contractor during construction.	

FILLING AND EXCAVATION CODE

Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO10 Development ensures that heavy trucks hauling material to and from site do not affect the amenity of established areas and limits environmental nuisance impacts on adjacent land.	**AO10** Development ensures that heavy trucks hauling material to and from the site: (a) Occur for a maximum of 3 weeks; (b) Use a major road to access the site; (c) Only use a minor road for the shortest-most-direct route that has the least amount of environmental nuisance if there is no major road alternative.	✓	Construction duration will be subject to confirmation following tendering of the works. The site will be accessed via Whipbird Place.	
PO11 Development for filling or excavation protects the environment and community health and well-being from exposure to contaminated land and contaminated material.	**AO11** Development does not involve: (a) Excavation on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register; (b) Filling with material containing a contaminant.	✓	All earthworks will be constructed in accordance with AS3798 and Brisbane City Council requirements.	

FILLING AND EXCAVATION CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO12 Development provides for; (a) Landscaping for water conservation purpose; (b) Water sensitive urban design measures which are employed within the landscape design to maximise stormwater use and to reduce any adverse impacts on the landscape; (c) Stormwater harvesting to be maximised and any adverse impacts of stormwater minimised.	**AO12.1** Development provides landscaping which is designed using the standards in the Landscape design guidelines for water conservation planning scheme policy.	N/A	Stormwater management is catered for by regional basins to the north-east.	
	AO12.2 Development ensures that the design and requirements for irrigation are in compliance with the standards in the Landscape design guidelines for water conservation planning scheme policy.	N/A		
	AO12.3 Development provides areas of pavement turf and mulched garden beds which are drained. Note—This may be achieved through the provision and/ or treatment of swales, spoon drains, field gullies, sub-surface drainage and stormwater connections.	N/A		

HURLEY CONSULTING ENGINEERS

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
ROADS				
PO1 Development provides roads, pavement, edging and landscaping which: (a) are designed and constructed in accordance with the road hierarchy; (b) provide for safe travel for pedestrians, cyclists and vehicles; (c) provide access to properties for all modes; (d) provide utilities; (e) provide high levels of aesthetics and amenity, improved liveability and future growth; (f) provide for the amelioration of noise and other pollution; (g) provide a high-quality streetscape; (h) provide a low-maintenance asset with a minimal whole of life cost Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	**AO1** Development provides roads and associated pavement, edging and landscaping which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	Roads will be concrete pavement.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO2 Development provides road pavement surfaces which: (a) are well designed and constructed; (b) durable enough to carry the wheel loads of the intended types and numbers of travelling and parked vehicles; (c) ensures the safe passage of vehicles, pedestrians and cyclists, the discharge of stormwater run-off and the preservation of all-weather access; (d) allows for reasonable travel comfort.	**AO2** Development provides road pavement surfaces which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	Roads will be concrete pavement.	
PO3 Development provides a pavement edge which is designed and constructed to: (a) control vehicle movements by delineating the carriageway for all users; (b) provide for people with disabilities by allowing safe passage	**AO3** Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	N/A	Roads will be concrete pavement with inverted crown and no kerb & channel.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO4 Development provides verges which are designed and constructed to: (a) provide safe access for pedestrians clear of obstructions and access areas for vehicles onto properties; (b) provide a sufficient area for public utility services; (c) be maintainable by the council	**AO4** Development provides verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.	N/A	Existing verges on the rod frontages comply with BCC standards.	
PO5 Development provides a lane or laneway identified in a neighbourhood plan which: (a) allows equitable access for all modes; (b) is safe and secure; (c) has 24-hour access; (d) is a low-speed shared zone environment; (e) has a high-quality streetscape.	**AO5** Development provides a lane or laneway identified in a neighbourhood plan which is embellished in compliance with the streetscape locality advice standards in the Infrastructure design planning scheme policy.	N/A		

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO6 Development of an existing premises provides at the frontage to the site, if not already provided, the following infrastructure to an appropriate urban standard: (a) an effective, high-quality paved roadway; (b) an effective, high-quality roadway kerb and channel; (c) safe, high-quality vehicle crossings over channels and verges; (d) safe, accessible, high-quality verges compatible and integrated with the surrounding environment; (e) safe vehicle access to the site that enables ingress and egress in a forward gear; (f) provision of and required alterations to public utilities; (g) effective drainage; (h) appropriate conduits to facilitate the provision of required street-lighting systems and traffic signals.	**AO6** Development of an existing premises provides at the frontage of the site, if not already existing, the following infrastructure to the standard that would have applied if the development involved new premises as stated in the road corridor design standards in the Infrastructure design planning scheme policy: (a) concrete kerb and channel; (b) forming and grading to verges; (c) crossings over channels and verges; (d) a constructed bikeway; (e) a constructed verge or reconstruction of any damaged verge; (f) construction of the carriageway; (g) payment of costs for required alterations to public utility mains, services or installations; (h) construction of and required alterations to public utility mains, services or installations; (i) drainage works; (j) installation of electrical conduits.	✓	The road frontage has been completed so no additional work is proposed other than a new vehicle crossover.	

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PATHS				
PO7 Development provides both cycle and walking routes which: (a) are located, designed and constructed to their network classification (where applicable); (b) provide safe and attractive travel routes for pedestrians and cyclists for commuter and recreational purposes; (c) provide safe and comfortable access to properties for pedestrians and cyclists; (d) incorporate water sensitive urban design into stormwater drainage; (e) provide for utilities; (f) provide for a high level of aesthetics and amenity, improved liveability and future growth; (g) are a low-maintenance asset with a minimal whole of life cost. (h) minimise the clearing of significant native vegetation. Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	**AO8.1** Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	N/A		

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
UTILITIES				
PO8 Development provides refuse and recycling collection, separation and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.	**AO8.3** Development provides refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy. **AO8.4** Development ensures that refuse and recycling collection and storage location and design do not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note- Refer to the refuse planning scheme policy for further guidance.	✓ ✓	Mobile wheelie bins are proposed to be collected from the new private streets.	
PO9 Development ensures that: (a) land used for an urban purpose is serviced adequately with regard to water supply and waste disposal; (b) the water supply meets the stated standard of service for the intended use and fire-fighting purposes.	**AO9.1** Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced. **AO9.2** Development provides the lot with reticulated water supply and sewerage to a standard acceptable to the distributor-retailer.	✓ ✓	The development will be provided with a direct connection to the water and sewerage networks in accordance with SEQ Code requirements.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO10 Development provides public utilities and street lighting which are the best current or alternative technology and facilitate accessibility, easy maintenance, minimal whole of life costs, and minimum adverse environmental impacts.	**AO10.1** Development provides public utilities and street lighting which are located and aligned to: (a) avoid significant trees and other habitat areas; (b) minimise earthworks; (c) avoid crossing waterways, waterway corridors and wetlands or if a crossing is unavoidable, tunnel boring techniques are used to minimise disturbance, and a disturbed area is reinstated and revegetated on completion of the work. Note- Guidance on the restoration of habitat is included in the Biodiversity areas planning scheme policy.	✓		
	AO10.2 Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services.	✓		
	AO10.3 Development provides public utilities and street lighting which are designed and constructed in compliance with the public utilities standards in the Infrastructure design planning scheme policy.	✓		

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO11 Development ensures that land used for urban purposes is serviced adequately with telecommunications and energy supply.	**AO11** Development provides land with the following services to the standards of the approved supplier: (a) electricity; (b) telecommunications services; (c) gas service where practicable.	✓	Further details to be provided at the operational works phase if required.	
PO12 Development ensures that major public projects promote the provision of affordable, high bandwidth telecommunications services throughout the city.	**AO12** Development provides conduits which are provided in all major Council and government works projects to enable the future provision of fibre optic cabling, if: (a) the additional expense is unlikely to be prohibitive; or (b) further major work is unlikely or disruption would be a major concern, such as where there is a limited capacity road; or (c) there is a clear gap in the telecommunications network; or (d) there is a clear gap in the bandwidth available to the area. Editor's note—An accurate, digital 'as built' three-dimension allocation plan is to be supplied for all infrastructure provided in a road.	N/A		

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PUBLIC ART AND SIGNAGE				
PO13 Development provides public art identified in a neighbourhood plan or park concept plan which: (a) is provided commensurate with the status and scale of the proposed development; (b) is sited and designed: (i) as an integrated part of the project design; (ii) as conceptually relevant to the context of the location; (iii) to reflect and respond to the cultural values of the community; (iv) to promote local character in a planned and informed manner.	**AO13** Development provides public art identified in a neighbourhood plan or park concept plan which is sited and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.	N/A		

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO14 Development provides signage of buildings and spaces which promote legibility to help users find their way.	**AO14** Development provides public signage: (a) at public transport interchanges and stops, key destinations, public spaces, pedestrian linkages and at entries to centre developments; (b) which details the location of the key destinations, public spaces and pedestrian linkages in the vicinity, the services available within the development and where they are located. Editor's note—Signage is to be in accordance with Local Law Number 1 (Control of Advertisements local law).	N/A		
PUBLIC FACILITIES				
PO15 Development provides community facilities which form part of the development that are functional, safe, low maintenance, and fit for purpose.	**AO15** Development that provides community facilities which form part of the development are designed in compliance with the community facilities standards in the Infrastructure design planning scheme policy.	N/A		
PO16 Development provides public toilets which: (a) are required as part of a community facility or park; (b) are located, designed and constructed to be: (i) safe; (ii) durable; (iii) resistant to vandalism; (iv) able to service expected demand; (v) fit for purpose.	**AO16** Development that provides public toilets are designed and constructed in compliance with the public toilets standards in the Infrastructure design planning scheme policy.	N/A		

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
STRUCTURES				
PO17 Development provides bridges, tunnels, elevated structures and water access structures that are designed and constructed using proven methods, materials and technology to provide for: (a) safe movement of intended users; (b) an attractive appearance appropriate to the general surroundings and any adjacent structures; (c) functionality and easy maintenance; (d) minimal whole of life cost; (e) longevity; (f) current and future services. Note—All bridges and elevated and associated elements must be designed and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	**AO17** Development that provides bridges, tunnels, elevated structures and water access structures are designed and constructed in compliance with the standards in the Infrastructure design planning scheme policy.	N/A		

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO18 Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the general surroundings; (c) functionality and easy maintenance; (d) minimal whole of life cost; (e) longevity; (f) future widening; (g) current and future services; (h) minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns.	**AO18** Development that provides culverts are designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	N/A		
Note—All culverts and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in accordance with the applicable design standards.				

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO19 Development provides batters, retaining walls, and sea and river walls which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the surrounding area; (c) easy maintenance; (d) minimal whole of life cost; (e) longevity; (f) current and future services. Note—All bridges and elevated and associated elements must be designed and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	**AO19** Development that provides batters, retaining walls and sea and river walls are designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	✓	All operational works are to be in accordance with the infrastructure design planning scheme policy unless otherwise approved by Council.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
IF INVOLVING DEVELOPMENT WITH A GROSS AREA GREATER THAN 1,000m^2				
PO20 Development ensures that construction is managed so that use of public spaces and movement on pedestrian, cyclist and other traffic routes is not unreasonably disrupted and existing landscaping is adequately protected from short term and long-term impacts. Note—The preparation of a construction management plan can assist in demonstrating achievement of this performance outcome. Note—The Transport, access, parking and servicing planning scheme policy provides advice on the management of vehicle parking and deliveries during construction	**AO20** Development ensures that during construction: (a) the use of adjoining and surrounding parks and public spaces, such as malls and outdoor dining, is not compromised; (b) adjoining and surrounding landscaping is protected from damage; (c) safe, legible, efficient and sufficient pedestrian, cyclist and vehicular accessibility and connectivity to the wider network is maintained.	✓	To be managed by the contractor during construction.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO21 Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts, including sleep disturbance, at a sensitive use, due to noise and dust, including dust from construction vehicles entering and leaving the site. Note—The preparation of a noise and dust impact management plan in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO21.1** Development ensures that demolition and construction: (a) only occurs between 6:30am and 6:30pm Monday to Saturday excluding public holidays; (b) do not occur over periods greater than 6 months. **AO21.2** Development including construction and demolition does not release dust emissions beyond the boundary of the site. **AO21.3** Development construction and demolition does not involve asbestos-containing materials.	✓	To be managed by the contractor during construction.	

INFRASTRUCTURE DESIGN CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO22 Development ensures that: (a) construction and demolition do not result in damage to surrounding property as a result of vibration; (b) vibration levels achieve the vibration criteria in Table 9.4.4.3B and Table 9.4.4.3C. Note— The preparation of a vibration impact assessment report in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO22** Development ensures that the nature and scale of construction and demolition does not generate noticeable levels of vibration.	✓	To be managed by the contractor during construction.	

OPERATIONAL WORKS CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO1 Development for operational work: (a) is designed and constructed to the standards in the Compensatory earthworks planning scheme policy, Infrastructure design planning scheme policy and Transport, access, parking and servicing planning scheme policy; (b) is integrated and consistent with the future development envisaged on the site by the planning scheme.	**AO1** Development for operational work is undertaken in accordance with the standards specified in the requirements for another relevant permit as identified in the decision notice for a development permit.	✓	All operational works are to be in accordance with the Infrastructure Design Planning Scheme Policy unless otherwise approved by Council.	
PO2 Development for operational work implements measures to prevent or minimise adverse impacts, including sleep disturbance, at a sensitive use due to noise and dust. Note—The preparation of a noise and dust impact management plan in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO2.1** Development for operational work only occurs between 6:30am and 6:30pm Monday to Saturday, excluding public holidays. **AO2.2** Development for operational work is undertaken in accordance with the standards specified in the requirements for another relevant permit as identified in the decision notice for a development permit.	✓ ✓	All operational works are to be in accordance with the Infrastructure Design Planning Scheme Policy unless otherwise approved by Council.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
SECTION A – If for a material change of use, reconfiguring a lot, operational work or building work **Note-** Compliance with the performance outcomes and acceptable outcomes in this section should be demonstrated by the submission of a site-based stormwater management plan.				
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: (a) minimise flooding; (b) protect environmental values of receiving waters; (c) maximise the use of water sensitive urban design; (d) minimise safety risk to all persons; (e) maximise the use of natural waterway corridors and natural channel design principles. Note—The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.	**AO1** Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	✓	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO2 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.	**AO2.1** Development does not result in an increase in flood level or flood hazard on upslope, downslope or adjacent premises. **AO2.2** Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	✓ ✓	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	
PO3 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.	**AO5** Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or water corridor. **AO6** Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy. **AO7** Development obtains a lawful point of discharge in compliance with the standards in the infrastructure design planning scheme policy. **AO8** Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	✓ ✓ ✓ N/A	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS		SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO4	Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from pervious surfaces and flooding in local catchments.	**AO4.1**	Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the Infrastructure design code and the standards in the Infrastructure design planning scheme policy.	✓	All stormwater drainage works are to be in accordance with the Infrastructure Design Planning Scheme Policy and QUDM unless otherwise approved by Council.	
		AO4.2	Development provides sufficient area to convey run-off which will comply with the Infrastructure design code and the standards in the Infrastructure design planning scheme policy.	✓		
PO5	Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the environmental values of the waterway corridor or drainage path for fauna movement.	**AO7**	Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	N/A		

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO6 Development ensures that location and design of stormwater detention and water quality treatment: (a) minimises risk to people and property; (b) provides for safe access and maintenance; (c) minimises ecological impacts to creeks and waterways;	**AO6.1** Development locates stormwater detention and water quality treatment: (a) outside of a waterway corridor; (b) offline to any catchment not contained within the development. **AO6.2** Development providing for stormwater detention and water quality treatment devices are designed in compliance with the Infrastructure design code and the standards in the infrastructure design planning scheme policy.	N/A N/A	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	
PO7 Development is designed, including any car-parking areas and channel works to: (a) reduce property damage; (b) provide flood-free access to the site above the defined flood event.	**AO7.1** Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.4.3.F. Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site based stormwater management plan).	✓		
	AO7.2 Development including the road network provides a stormwater management system that provides safe pedestrian and vehicle access in accordance with the standards in the Infrastructure design planning scheme policy.	✓	All stormwater drainage works are to be in accordance with the Infrastructure Design Planning Scheme Policy and QUDM unless otherwise approved by Council.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO8 Development designs stormwater channels, creek modification works and the drainage network to protect and enhance the environmental values of the waterway corridor or drainage path.	**AO8.5** Development ensures natural waterway corridors and drainage paths are retained. **AO8.6** Development incorporates the use of natural channel design principles in constructed components to maximise environmental benefits and minimise scour. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines. **AO8.7** Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in compliance with Infrastructure design code and the standards in the Infrastructure design planning scheme policy. **AO8.8** Development ensures that the design of modifications to the existing design of new stormwater channels, creeks and major drains is in compliance with the Infrastructure design code and the standards in the Infrastructure design planning scheme policy.	N/A		
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	**AO9** No acceptable outcome is prescribed.	N/A	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high risk development only.	**AO10** No acceptable outcome is prescribed.	✓		
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: (a) existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; (b) safe management of stormwater discharge from existing and future upslope development; (c) implication for adjacent and down-slope development.	**AO11.1** Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge. **AO11.2** Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Priority infrastructure plan and the standards in the Infrastructure design planning scheme policy.	✓	The development is proposed to have new underground stormwater pipes within the new internal private roads draining generally from south to north, that will directly connect into the existing stormwater drainage network at the north-eastern corner of the site. This approach is consistent with the previously approved Stormwater Management Plan for the site under reference DEV2023/1383.	
PO12 Development provides proposed stormwater infrastructure which: (a) remains fit for purpose for the life of the development and maintains full functionality in the design flood event; (b) can be safely accessed and maintained in a cost effective way; (c) ensures no structural damage to existing stormwater infrastructure.	**AO12.1** The stormwater management system is designed in compliance with the Infrastructure design code and Infrastructure design planning scheme policy. **AO12.2** Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	✓ N/A		

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: (a) the environmental values and water quality objectives of waters; (b) waterway hydrology; (c) the maintenance and serviceability of stormwater infrastructure. Note—The Infrastructure design code and Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.	**AO13** No acceptable outcome is prescribed.	✓	Erosion and sediment control plans will be prepared and implemented for the project in accordance with Brisbane City Council requirements.	
PO14 Development ensures that: (a) unnecessary disturbance to soil, waterways or drainage channels is avoided; (b) all soil surfaces remain effectively stabilised against erosion in the short and long terms.	**AO14** No acceptable outcome is prescribed.	✓	Erosion and sediment control plans will be prepared and implemented for the project in accordance with Brisbane City Council requirements.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO15 Development does not increase: (a) the concentration of total suspended solids or other contaminants in stormwater flows during site construction; (b) run-off which causes erosion either on-site or off-site.	**AO15** No acceptable outcome is prescribed.	✓	Erosion and sediment control plans will be prepared and implemented for the project in accordance with Brisbane City Council requirements.	
SECTION B – Additional criteria which applies to high risk development, being: (a) a material change of use for an urban purpose which involves greater than 2,500m^2 of land that: (i) will result in an impervious area greater than 25% of the net developable area; or (ii) will result in 6 or more dwellings. (b) reconfiguring a lot for an urban purpose that involves greater than 2,500m^2 of land and will result in 6 or more lots; (c) operational work for an urban purpose which involves disturbing greater than 2,500m^2 of land.				
WATER QUALITY				
PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised. Note—Prescribed water contaminants are defined in the Environmental Protection Act 1994.	**AO16** Development provides a stormwater management system which is designed in compliance with the Infrastructure design code and the standards in the Infrastructure design planning scheme policy. Note—The preparation of a site based stormwater management plan can assist in demonstrating compliance with this acceptable outcome.	N/A	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	

STORMWATER CODE
Performance Criteria and Acceptable Solution

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
PO17 Development ensures that: (a) the discharge of wastewater or contaminated stormwater to a waterway or external to the site is avoided; or (b) if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment. Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome. Editor's note—This code does not deal in the sewerage which is the subject of the Wastewater code.	**AO17** No acceptable outcome is prescribed.	N/A	The approved Stormwater Management Plan for the Oxley Priority Development Area accounted for development runoff from the subject site.	

Appendix E – Erosion Hazard Assessment Form

BRISBANE CITY COUNCIL ABN 72 002 765 795

Erosion Hazard Assessment - June 2014

Brisbane City Council (BCC), *Erosion Hazard Assessment* form must be read in conjunction with the *Erosion Hazard Assessment- Supporting Technical Notes* (June 2014 or later version) for explanatory terms and Certification information.

What is an Erosion Hazard Assessment?
Soil erosion and sediment from urban development, particularly during construction activities, is a significant source of sediment pollution in Brisbane's waterways. The Erosion Hazard Assessment determines whether the risk of soil erosion and sediment pollution to the environment is 'low' , 'medium' or 'high'.

When is the EHA required?
An *Erosion Hazard Assessment* form must be completed and lodged with BCC for any Development Application (ie MCU or ROL) that will result in soil disturbance OR Operational Works or Compliance Assessment Application for 'Filling' or Excavation.

Failure to submit this form during lodgement of an application may result in assessment delays or refusal of the application.

Privacy Statement
The personal information collected on this form will be used by Brisbane City Council for the purposes of fulfilling your request and undertaking associated Council functions and services. Your personal information will not be disclosed to any third party without your consent, unless this is required or permitted by law.

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

2 Based on the erosion hazard assessment overleaf, is the site:

☐ ***A 'low' risk site***

Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets outlining best practice ESC can be found at http://www.waterbydesign.com.au/factsheets

☒ ***A 'medium' risk site***

If the development is approved, the applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy.

☐ ***A 'high' risk site***

If the development is approved, the applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.

3 Site Information and Certification

Application number (if known)

Site address

10 Honeyeater Circuit, Oxley

Postcode 4075

I certify that:

☒ I have made all relevant enquiries and am satisfied no matters of significance have been withheld from the assessment manager.

☒ I am a person with suitable qualifications and/or experience in erosion and sediment control.

☒ The Erosion Hazard Assessment was completed in accordance with the Erosion Hazard Assessment Supporting Technical Notes and the BCC Infrastructure Design Planning Scheme Policy.

☒ The Erosion Hazard Assessment accurately reflects the site's overall risk of soil erosion and sediment pollution to the environment.

☒ I acknowledge and accept that the BCC, as assessment manager, relies, in good faith, on this certification as part of its development assessment process and the provision of false or misleading information to the BCC constitutes an offence for which BCC may take punitive steps/ action against me/ enforcement action against me.

Certified by *Print name*

Craig Hurley - Hurley Consulting Engineers

Certifier's signature

Date

29 / 07 / 2024

Assessment Table

Table 1: Low Risk Test

		Yes	*No*
1.1	is the area of land disturbance > 1000 m^2	☐	☒
1.2	does any land disturbance occur in a BCC mapped waterway corridor	☒	☐
1.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 5%	☐	☒
1.4	does any land disturbance occur below 5 m AHD	☐	☒
1.5	does development involve endorsement of a staging plan	☐	☒
1.6	is there an upstream catchment passing through the site > 1 hectare	☐	☒

	Yes	*No*	
Have you answered 'yes' to any of the questions in Table 1?	☒	☐	**If '*No*' then site is <u>low risk</u> with respect to erosion and sediment control**

If '*Yes*' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	*No*	
2.1	is the area of land disturbance > 1 hectare	☐	☒	**If '*No*' then site is <u>medium risk</u> with respect to erosion and sediment control**

If '*Yes*' then proceed to Table 3

Table 3: High Risk Test

		Yes	*No*
3.1	is there an upstream catchment passing through the site > 1 hectare	☐	☐
3.2	does any land disturbance occurs in a BCC mapped waterway corridor	☐	☐
3.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 15%	☐	☐

	Yes	*No*	
Have you answered 'yes' to any of the questions in Table 3?	☐	☐	**If '*No*' then site is <u>medium risk</u> with respect to erosion and sediment control**

If '*Yes*' then site is <u>high risk</u> with respect to erosion and sediment control