Hon Steven Miles MP
Deputy Premier
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DECISION NOTICE

Ministerial Infrastructure Designation (MID) for Ballymore Master Plan (Ballymore)

Decision details

Decision:	MID made under section 38 of the *Planning Act 2016*
Date of decision:	31 December 2021
Type of infrastructure:	Planning Regulation 2017, Schedule 5, Part 2: • Item 6: educational facilities • Item 11: facilities for parks and recreation • Item 12: hospitals and health care services • Item 15: sporting facilities.
DSDILGP reference:	MID-0121-0477

Premises details

Street address:	91 Clyde Road and 201 and 231 Butterfield Street, Herston, QLD, 4006
Real property description:	Lots 1-2 on RP189805 and Lot 495 on SL6366
Local government area:	Brisbane City Council (the council)

Infrastructure entity details

Infrastructure entity:	Queensland Rugby Union (QRU)

Requirements

A notice of requirements included in the MID is at **Schedule 1**.

Submissions

A notice of how I have considered submissions is at **Schedule 2**.

Advice to the entity

Despite the MID, the entity is responsible for determining what obligations exist under previous development approvals that apply to the premises.

Effective date

As set out in section 9(3) of the *Planning Act 2016*, the MID will take effect from the date the gazette notice for this MID is published in the Queensland Government Gazette.

Duration of designation

The duration of the MID is set out in section 39 of the *Planning Act 2016.*

STEVEN MILES MP
DEPUTY PREMIER
Minister for State Development, Infrastructure,
Local Government and Planning
Minister Assisting the Premier on Olympics Infrastructure

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Schedule 1 - Notice of requirements included in the MID

Development under the MID is to be carried out generally in accordance with the plans, reports and documents referenced in the requirements included in Table 1.

Table 1 – Requirements	
Plan of designation	
1.	The 'Plan of designation for the Ballymore Master Plan', ref. MID-0121-0477 and included at **Annexure 1** (Plan of designation).
Limitation of use	
2.	At all times, the buildings A, B and C as shown on the Plan of designation, shall be limited to the following uses: i. sports and recreational facilities ii. sports administration iii. sports medicine and/or allied health.
3.	The gross floor area of buildings A, B and C used for commercial sports and recreational facilities, commercial sports administration and commercial sports medicine/or allied health uses shall not exceed 5,000m^2.
4.	For all parties other than Queensland Rugby Union, the gross floor area used of buildings A, B and C and Rugby House shall not exceed 5,000m^2.
Design/built form	
5.	The design of each of the new buildings should include/incorporate: i. variation in roof form ii. variation in façade materials, muted tones and detailing iii. easy to identify building entrances iv. well disguised service elements.
6.	Building B as shown on the Plan of Designation must be of a design, bulk, scale and massing generally in accordance with the following plans in the Ballymore Master Plan prepared by Blight Rayner and dated October 2021, as included at **Annexure 2:** i. Concept image of building from Clyde Road ii. Concept image of Clyde Road building looking over building from west iii. Concept aerial image of Clyde Road building from south.
Flora and fauna management	
7.	(a) Clearing must retain: i. existing mature vegetation adjacent to Clyde Road

	ii. existing mature vegetation unless required to facilitate the proposed development as identified in the Plan of Designation iii. all other existing mature vegetation unless a suitably qualified person confirms it is required to be removed in response to an unacceptable safety risk. (b) Prior to the commencement of works, undertake the necessary actions to protect vegetation that is not required to be cleared from construction impacts in accordance with the AS4970-2009 Protection of Trees on Development Sites.
8.	Prior to the commencement of works, undertake a site inspection to confirm the presence of any invasive, declared or pest species (flora or fauna). If found, remove these in accordance with legislative requirements.
9.	(a) Prior to any clearing operations, a suitably qualified wildlife officer or ecologist must undertake a preclearing inspection of trees, wet areas and other vegetation for fauna, hollows, nests and other breeding places. (b) The suitably qualified wildlife officer or ecologist must be present during clearing operations to ensure risk of injury to, or death of fauna is minimised.
Flooding	
10.	The minimum finished floor level of new buildings must be constructed in accordance with Figure 29 and Table 5.2 of the Ballymore Stadium Masterplanning Flood Study (ref: PS122604-WAT-REP-001- RevB.docx), prepared by WSP, dated 18 January 2021, as included at **Annexure 3**.
11.	(a) Prior to the commencement of use of the National Rugby Training Centre (NRTC), prepare and submit a flood emergency and evacuation procedure to the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) (infrastructuredesignation@dsdilgp.qld.gov.au). The flood emergency and evacuation procedure must addresses/include the following: i. identify buildings for safe refuge in flood events ii. emergency procedures including mapped evacuation routes and emergency assembly point(s) iii. details of warning signage to be installed throughout the site alerting that the area is subject to flash flooding and for persons to not traverse flood waters iv. emergency team roles and responsibilities including contact details v. staff training on awareness of procedures to be followed during potential flood events. (b) The flood emergency and evacuation procedure must be updated with the development of the site. (c) From commencement of use of the NRTC, implement the flood emergency and evacuation procedure.

Stormwater management	
12.	Prior to commencement of use of new buildings, implement best practice stormwater quantity measures generally in accordance with the following sections of the Ballymore Masterplan - NRTC, Future Buildings and Car Park Civil Engineering Report & Stormwater Management Plan (ref: PS118925-CIV-REP- Rev03), prepared by WSP, dated 21 January 2021, and included at **Annexure 4**: i. 4 – Stormwater Quantity ii. 5 – Stormwater Quality iii. Drawing SK28 Rev P2 - Proposed Catchment Plan iv. Drawing SK29 Rev P2 - Stormwater Quality Plan.
Car parking	
13.	(a) Provide 385 on-site car parking spaces as follows: i. 163 car parking spaces prior to the commencement of use of the NRTC ii. 222 car parking spaces prior to the commencement of use of new buildings A, B and C as shown on the Plan of designation. (b) All new car parking spaces are to comply with the relevant council or Australian standards.
Active transport	
14.	(a) Prior to the commencement of use of new buildings A, B and C as shown on the Plan of designation, provide 63 secure cycle parking spaces on the site for staff use. (b) Prior to the commencement of use of new buildings A, B and C as shown on the Plan of designation, provide 25 cycle parking spaces on the site for visitor use. (c) Provide end-of-trip cyclist facilities (lockers, showers and toilets) for staff, designed in accordance with Australian Standards AS2890.3 for Bicycle Parking.
15.	(a) Prior to the commencement of use of the NRTC, provide an easement to council along the northern boundary of the site adjoining Enoggera Creek. (b) The easement should provide for a sufficiently wide corridor to allow for the construction of the ‘6m wide bike path corridor’ as shown on the Plan of Designation. (c) The future bike path is to be constructed by QRU or an entity other than the operator of the facility.
16.	(a) Retain existing mangroves and riparian vegetation unless required to be removed to facilitate the proposed bike path corridor or in response to an unacceptable safety risk which is to be confirmed by a suitably qualified person. (b) Prior to the commencement of works, undertake the necessary actions to protect mangrove and riparian vegetation that is not required to be cleared

	from construction impacts in accordance with the AS4970-2009 Protection of Trees on Development Sites.
Event transport management plan	
17.	(a) Prior to the commencement of use of the NRTC, prepare an Event Transport Management Plan (ETMP) for all events with over 3,000 attendees. (b) The ETMPs should be prepared in consultation with the Department of Transport and Main Roads, the council, Queensland Rail and bus operators, and include/incorporate the following information: i. detail on proposed event start/finish times and likely peak attendance periods ii. car parking management including persons with a disability parking iii. provision of wayfinding signage for all vehicles and pedestrians accessing the site iv. use of temporary fencing within proximity to the stadium to temporarily augment footpath space and manage pedestrian crossing arrangements v. any required road closures vi. temporary private vehicle and rideshare drop-off/pick-up facilities at the stadium with associated waiting areas, pedestrian access and management of these facilities vii. temporary bus setdown facilities at the stadium with associated waiting areas for passengers and pedestrian access viii. temporary bus layover locations at or in proximity to the stadium ix. impacts on urban bus services during events x. active transport xi. measures to minimise vehicle/pedestrian/bicycle conflict within the site xii. disability compliant access arrangements xiii. advertising/awareness of ETMP. (c) From commencement of use of the NRTC, implement the ETMPs.
Landscaping	
18.	Prior to the commencement of use of new buildings, implement the landscape measures in the Landscape Master Plan (ref: PR 147324-1), prepared by RPS Group, dated 18 January 2021 as included at **Annexure 5**.
Lighting	
19.	(a) All external lighting is installed and maintained to accord with Australian standards. (b) All lighting is to be shielded so as not to cause nuisance to adjoining properties.

Refuse and plant screening	
20.	Refuse storage bins and all plant and equipment are to be stored behind fencing or screened from view from roads, adjoining premises and open space.
Construction management	
21.	(a) Prior to the commencement of works, prepare and submit a Construction Environmental Management Plan (CEMP) to DSDILGP (infrastructuredesignation@dsdilgp.qld.gov.au). The CEMP include/address the following: i. an Erosion and Sediment Control Plan that addresses erosion risk and surface water run-off ii. dust mitigation methods (such as use of water to supress potential dust) and air quality management measures iii. hours of construction, vibration, and construction noise (including the default noise standards), in accordance with the *Environmental Protection Act 1994* (s440R & 440S) iv. waste control and management, in conjunction with a waste management plan if deemed necessary v. disposal and management of hazardous materials and regulated waste, including removal by a suitably licenced contractor where deemed necessary vi. access locations for and management of construction vehicle traffic. Any construction parking off-site is subject to engagement with council or other relevant landowners vii. proximity of works to easements and services and any necessary design measures, additional analysis or safe work methods viii. other required permits from the council, easement holders or utility providers ix. maintenance of safe pedestrian and cyclist access/movement around the site x. complaint resolution procedures, including who to contact and a record of how complaints have been addressed xi. a construction communication plan including: ▪ how neighbouring properties will be advised of construction activities for each stage ▪ how the appropriate extent of neighbouring properties to be notified will be determined ▪ timeframes for notification of construction activities to occur prior to works commencing xii. the continued function and pedestrian access to the surrounding public transport facilities. (b) Construction of the development is to be undertaken in accordance with the CEMP.

Information signage	
22.	(a) Prior to the commencement of works, place an information sign on the site. (b) The information sign is to: i. include the following details: ▪ a link to where a copy of the MID decision and CEMP can be viewed on the DSDILGP website; and ▪ the name, postal and/or email address and a contact telephone number for the key contact/principal contractor ii. be positioned on the Clyde Road and Butterfield Street frontages and be clearly visible for a pedestrian iii. be non- illuminated and maintained at all times during construction.
Public utility services (services)	
23.	(a) Prior to commencement of works, confirm the adequacy, capability and location of services (water, sewer, electricity and telecommunications) for the proposed development. (b) If reasonably required, the infrastructure should be upgraded to cater for the proposed development. (c) Connect the development to all available urban infrastructure.
Geotechnical conditions	
24.	Prior to commencement of works, undertake a geotechnical investigation that confirms the ground conditions and informs building requirements.
Acid sulfate soils (ASS)	
25.	If potential or actual ASS is identified during construction, an ASS investigation is to be carried out and managed in accordance with an ASS management plan.

Schedule 2 – Notice of how submissions were dealt with

Submissions received during Minister's consultation

On 23 February 2021, I gave a notice to the council and the landowner advising that I was proposing to make the MID and inviting final submissions within 25 business days.

Public consultation actions were also conducted by the entity inviting submissions between 3 March 2021 and 31 March 2021.

522 submissions were received during this period which were from the council, a local Councillor, local businesses, community organisations and surrounding residents.

A summary of how I have considered submissions is provided in the table below.

Matters raised	Response
MID process	
• The proposal doesn't meet the criteria for making a MID under the *Planning Act 2016.* • The need for the proposal has not been adequately demonstrated. • The proposal has not been fully funded.	I am satisfied that need for the efficient and timely supply of the infrastructure was adequately demonstrated in the MID proposal. The assessment of the proposal has been undertaken on its planning merits. This has included balancing the environmental, economic and social considerations of the proposal.
A lack of community consultation has been undertaken on the proposal.	I am satisfied that broad and effective public consultation has been undertaken. Public consultation ran from 3 March 2021 to 31 March 2021 and included the placement of signs on the site, a public notice in the Courier Mail, letters sent to surrounding local residents. I am aware that a meeting was also held between concerned community members, the state member for McConnel and representatives from the Department of State Development, Infrastructure, Local Government and Planning. A significant number of submissions were received during the consultation period raising concerns with the proposed development. As a result of the valid concerns raised, an extensive assessment process has been undertaken that has resulted in significant modifications to the master plan. A further round of limited public consultation was undertaken on the amended master plan prior to my decision on the MID.
Inadequate assessment of the impacts of the proposal has been undertaken.	The MID has been subject to an extensive and rigorous assessment process.

	In response to submissions received during the consultation period, a number of changes were made to the master plan. The changes to the masterplan have resulted in a substantial reduction in the scale of the proposal. I am satisfied that the impacts of the proposal have been fully considered and assessed with requirements included to ensure the site, when further developed, is appropriately managed.
The land is controlled privately under a Deed of Grant in Trust (DOGIT) by QRU which limits the use of the site.	Achieving alignment of the master plan with the DOGIT was a critical part the assessment of the MID. The Department of Resources were consulted throughout the MID assessment process and I am satisfied that the MID achieves alignment with the DOGIT. To manage ongoing compliance, I have included a requirement to limit uses on site.
Use of the designation process for private infrastructure.	Queensland planning legislation includes provisions for the Planning Minister to designate land for a range of purposes specified in the Planning Regulation 2017. As such, the designation process is an appropriate assessment process for this type of development.
Master plan	
• The site is not appropriate for unrestricted commercial development. • The proposed office buildings should not be included in the MID. • The site is not appropriate for a proposal of this scale. • The proposal is an overdevelopment of the site. • The MID proposal is greatly more intensive than the existing planning approval over the site. • The proposed new buildings will adversely impact on the existing kindergarten adjoining the site.	In response to the views expressed, I requested a number of changes be made to the master plan. The MID no longer includes the four new buildings fronting Butterfield Street with only the existing 'Rugby House' building to be retained in this location. Further, I have included a requirement in the MID to limit the use of new buildings to sports and recreation facilities, sports administration and sports medicine and/or allied health to ensure alignment with the DOGIT. Additional requirements have also been included to limit the amount of commercial development.
The constraints of the site make the site an inappropriate location for a major stadium facility.	The assessment of the proposal included the impacts of event days held at Ballymore. I am satisfied that impacts from events will remain largely unchanged as no increase is proposed to the existing spectator capacity of Ballymore.

	Notwithstanding, the MID requires the preparation of an Event Transport Management Plan (ETMP) to manage the traffic and transport impacts of all events with over 3,000 attendees.
• The proposal will harm the character of the surrounding residential neighbourhood. • Proposed building heights should be reduced.	In response to the submissions received during the consultation process, a number of changes have been made to the master plan resulting in a substantial reduction in the number and height of proposed buildings. The MID no longer includes the four new buildings fronting Butterfield Street with only the existing 'Rugby House' building to be retained in this location. Further, proposed new buildings will not exceed two storeys in height. In order to preserve the character of the area, existing mature vegetation along both the Butterfield and Clyde Street frontages will be retained. I have also included requirements in the MID for the design of new buildings to incorporate variations in roof form, façade materials, muted tones and detailing and for the implementation of the submitted landscape master plan.
Concerns with the accuracy of the MID proposal.	I acknowledge that concerns have been raised regarding the accuracy of the MID proposal. Given these concerns and the responses received during the consultation process, the MID has been subject to an extensive and rigorous assessment of all technical matters. In response a number of changes were made to the master plan including a substantial reduction in the scale and subsequent impacts of the proposal. Following this process, I am satisfied that the impacts of the MID have been properly considered.
• The proposed new facilities should be open for community use. • The proposal will result in a loss of community open space. • The proposal will result in a loss of green space.	The MID no longer includes the four new buildings fronting Butterfield Street with only the existing 'Rugby House' building to be retained in this location. By removing these buildings, this land can be maintained as a large area of green space for informal community use. In addition, the MID includes a new aquatic centre and climbing facilities that can be used by the local community.
Approval should not be granted for all infrastructure items being applied for.	I am satisfied that the proposed infrastructure items are relevant for the uses proposed on site.
The Ballymore 'Hill' should be retained.	A new building is proposed on the southern end of field one with the Ballymore 'Hill' to be replicate at the northern end of field one.

A number of swim schools and rock climbing facilities already exist in the area.	I am satisfied that the swim school and rock climbing facility are appropriate uses for the site and are consistent with the DOGIT.
Greater detail is required for the shared barbeque and overflow parking area.	Details of the shared barbeque and overflow parking area will be determined by QRU as detailed design of the proposed development progresses.
Traffic	
• The traffic impact assessment (TIA) lacks detail and does not comprehensively assess the impacts of the proposal. • The proposal will result in increased local traffic. • Increased traffic in the area will contribute to decreased air quality. • Increased traffic from the proposal will result in safety issues for cyclists and pedestrians.	I received a significant number of submissions during the consultation period which raised a number of valid concerns in relation to traffic impacts. In response to the views expressed and extensive assessment of the proposal, a number of changes have been made to the master plan resulting in a substantial reduction in the number of buildings, scale and subsequent impacts of the proposal. Given the substantial reduction in the scale of development, I am satisfied that the MID will not adversely impact on the local road network. Further, external upgrade works are not considered to be required for the MID. Notwithstanding, I have included a requirement in the MID for the preparation of a plan to manage the traffic and transport impacts of events with over 3,000 attendees.
The Traffic Impact Assessment (TIA) should assess the following intersections to determine if any upgrade works are required. • Butterfield Street/Clyde Road/Dunsmore Street • Butterfield Street/Fagan and Aberleigh Roads.	The TIA supporting the MID proposal included an assessment of these intersections and determined that no upgrade works were required.
An event management plan should be prepared for the site.	The MID requires the preparation of an Event Management Plan for all events held on site with over 3,000 attendees to manage traffic and transport impacts.
A bus turn around area should be constructed at the end of Clyde Road.	I am satisfied that sufficient options are present on site for the parking, setdown and turn around of buses and coaches.
Parking	
• Insufficient on-site car parking is proposed.	I received a significant number of submissions during the consultation period which raised a number of valid concerns about the proposed car parking configuration.

• The proposal will result in on-street car parking impacts. • City frame car parking rates are not appropriate for the site.	In response to the views expressed and extensive assessment of the proposal, a number of changes have been made to the master plan resulting in a substantial reduction in the number of buildings, scale and subsequent impacts of the proposal. Given the substantial reduction in the scale of development, I am satisfied that the 385 proposed car parking spaces is sufficient to cater for the uses proposed as part of the MID. I have included a requirement to ensure that car parking is delivered in line with the construction of new buildings.
Details of site servicing and refuse collection should be provided.	Details of site servicing areas and refuse collection will be determined by QRU as detailed design of the proposed development progresses.
Food truck parking space should be provided.	Details of space for food truck parking during events will be determined by QRU.
Public transport	
• Insufficient public transport services the site to cater for the proposed development. • A bus zone should be provided on Butterfield Street.	An extensive and rigorous assessment process has been undertaken of the impacts of the MID. In response to the assessment and consultation process, a number of changes were made to the master plan. This has resulted in a substantial reduction in the scale and subsequent impacts of the proposal. Given the substantial reduction in the scale of development, I am satisfied that external upgrade works are not required for the MID.
Active transport	
• Sufficient space should be provided for the bike path along Enoggera Creek. • The bicycle path along Enoggera Creek should be provided.	The MID requires land for the future bike path corridor along Enoggera Creek to be dedicated to the council to ensure its construction. The bike path will be constructed by an entity other than the operator of the site when required.
The proposal should incorporate bicycle facilities.	The MID requires the provision of both staff and visitor cycle parking and staff end of trip facilities.
A pedestrian crossing of Butterfield Street needs to be considered.	An extensive and rigorous assessment process has been undertaken of the impacts of the MID. In response to this assessment and the consultation process, a number of changes were made to the master plan. This has resulted in a substantial reduction in the scale and subsequent impacts of the proposal. Given the substantial reduction in the scale of development, I am satisfied that external upgrade works are not required for the MID.

Pedestrian connections should be provided to adjacent bus stops.	I am satisfied that pedestrian connectivity around and through the site is adequate with existing footpaths along the entirety of the Clyde Road and Butterfield Street frontages and footpaths proposed on both sides of internal roads providing connections to public transport.
Ecology	
An environmental study has not been undertaken for the proposal.	The site does not contain any Matters of State Environmental Significance that would require an assessment of ecology on site.
• The proposal will result in the loss of substantial mature vegetation. • Existing mature vegetation should be retained where possible. • The proposal will impact on local wildlife.	The MID requires vegetation not required to be removed as part of the proposed development be retained and protected from construction impacts, including the mature vegetation adjoining Clyde Road and riparian vegetation and mangroves. Further, the MID requires a suitably qualified wildlife officer or ecologist to undertake an inspection of trees, wet areas and other vegetation for fauna, hollows, nests and other breeding places prior to any clearing occurring. The suitably qualified wildlife officer or ecologist must be present during clearing operations to ensure risk of injury to, or death of fauna is minimised.
Amenity	
• The proposal will result in adverse visual amenity impacts on the surrounding neighbourhood. • New buildings should be screened by vegetation. • The rock climbing facility detracts from the natural setting.	To protect existing levels of amenity, the MID requires mature vegetation to be protected where possible, the submitted landscaping plans to be implemented and for new buildings to incorporate the following design elements • variation in roof form • variation in façade materials, muted tones and detailing • easy to identify building entrances • well disguised service elements.
The proposal will result in adverse noise impacts on the surrounding neighbourhood.	The MID is for improvements to an existing stadium facility and does not propose to increase the spectator capacity of the facility. I am satisfied that the MID, as revised, will result in minimal change to noise impacts beyond that experienced from existing operations of the site.
The proposal will result in privacy impacts to neighbouring homes.	Proposed new buildings have been sited with adequate setbacks from neighbouring residential properties.
New outdoor lighting will impact on the amenity of the area.	External lighting will be installed and maintained to accord with Australian Standards and shielded to avoid light spill to surrounding residential properties.

The construction of the proposal will result in increased noise and traffic.	The MID requires the preparation of a Construction Environmental Management Plan prior to works commencing that will address construction noise and construction vehicle traffic.
Flooding	
The proposal will exacerbate flooding impacts in the local area.	I am satisfied that the proposal has minimal impact on existing flood conditions with local flood impacts remaining within acceptable and tolerable levels.
The proposal should include a flood evacuation plan.	The MID requires the preparation and implementation of a flood emergency and evacuation procedure to be updated with the development of the site.
Support	
General support for the proposal.	Comments of support for the proposal are acknowledged.
The existing amenities at Ballymore are dated and require upgrading.	Comments are noted. The MID seeks to provide new and upgraded facilities.
The proposal will grow the sport of rugby and create employment opportunities.	Comments are noted.

Annexure 1 to Schedule 1 – Plan of designation

Legend

- **A** — Built form envelope comprising buildings and structures not exceeding 2 storeys (letter denotes buildings as identified in Requirements 2, 3, 11 and 12 in Decision Notice)
- Built form envelope comprising buildings and structures not exceeding 3 storeys (Rugby House is identified in Requirement 3 in Decision Notice)
- Built form envelope comprising buildings and structures not exceeding 4 storeys
- Ground level car parking and vehicular circulation
- Open space, sport and recreation, landscaping and associated structures
- East stand with integrated rock climbing centre
- Area for bouldering use
- 6 metre wide bike path corridor
- Vehicular ingress/egress
- Designation boundary

Title: Plan of designation for the Ballymore Master Plan
Address: 91 Clyde Road, 201 and 231 Butterfield Street, Herston, QLD, 4006
Reference: MID-0121-0477

Aerial not to scale
Scale (metres)
0 30 60

Queensland Government

Annexure 2 to Schedule 1 – Design/Built Form

CLYDE ROAD BUILDING

CONCEPT IMAGE OF BUILDING FROM CLYDE ROAD

CONCEPT IMAGE OF CLYDE ROAD BUILDING LOOKING OVER BUILDING FROM WEST

CLYDE ROAD BUILDING

CONCEPT AERIAL IMAGE OF CLYDE ROAD BUILDING FROM SOUTH

Annexure 3 to Schedule 1 – Flood management

5.2 POST DEVELOPMENT - FLOOD PLANNING LEVEL

Table 5-2 summarizes the floor planning levels applicable to the proposed development; masterplan reference for individual buildings are shown in Figure 29.

Figure 29: Masterplan with building reference

Table 5.2: Minimum floor planning levels relevant to proposed development

Masterplan reference as indicated in Figure 29	Description	Planning requirements*1, 2*	Flood planning levels (m AHD)	Proposed floor level (m AHD)	Compliance
A	NRTC building (proposed)	1% AEP creek flood + 500 mm (habitable)	5.95	6.00	Yes
		1% AEP creek flood (non-habitable)	5.45		
B	Sports training building (proposed)	1% AEP creek flood + 500 mm (habitable)	5.98	7.25	Yes (building on stilts – open undercroft)
		1% AEP creek flood (non-habitable)	5.48		
C	2-level building (proposed)	1% AEP creek flood (habitable)	5.51	5.55	Yes
		1% AEP creek flood (non-habitable)	5.51		

Masterplan reference as indicated in Figure 29	Description	Planning requirements*1, 2*	Flood planning levels (m AHD)	Proposed floor level (m AHD)	Compliance
D	Redevelopment of existing QRU Office	1% AEP creek flood (habitable)	NA	NA	Yes – outside the 1% AEP creek flood area
E	New office buildings	1% AEP creek flood (non-habitable)	NA	NA	
F	New swim school	1% AEP creek flood + 500 mm (habitable)	5.58	5.60	Yes
		1% AEP creek flood (non-habitable)	5.08		
G-1	New car park 1	2% AEP overland flow flood (non-habitable)	5.62	NA	No
G-2	New car park 2	NA	NA	NA	Yes – not affected by creek or overland flooding up to and including the 1% AEP event
G-3	New car park 3	1% AEP creek flood (non-habitable)	5.08	5.1	Yes
G-4	New car park 4	1% AEP creek flood (non-habitable)	5.07	5.1	Yes
G-5	Car park 5	1% AEP creek flood (non-habitable)	5.51	NA	No
G-6	Car park 6	1% AEP creek flood (non-habitable)	5.47	NA	No
H	Outdoor sport facilities	NA	NA	NA	To be confirmed at future stage once building details are available
L	Existing car park	2% AEP overland flow flood (non-habitable)	5.57	5.60	Yes
M	Existing fields	NA	NA	NA	Flood planning levels do not apply

Masterplan reference as indicated in Figure 29	Description	Planning requirements*1, 2*	Flood planning levels (m AHD)	Proposed floor level (m AHD)	Compliance
N	Existing Eastern Stand	1% AEP creek flood (non-habitable)	5.13	NA	Existing building (unmodified)
O	Possible sports training facility or similar	1% AEP creek flood + 500 mm (habitable)	5.53	5.55	Yes
		1% AEP creek flood (non-habitable)	5.13		

*1 – non-habitable buildings include garages and storage rooms and exclude offices, training rooms or medical facilities

*2 – based on the critical source of flooding at individual building locations

*3 - floor levels of individual building elements will be confirmed in detailed design

5.3 AREAS OF NON-COMPLIANCES

5.3.1 CAR PARK G1

Car park G1 (refer to Figure 29 for car park location) lies in an area affected by overland flooding in the 2% and 1% AEP flood events.

Car park area G1 is affected by flood hazard H1 (i.e. no vulnerability constraints) and H2 (unsafe for small vehicles) in the 2% and 1% AEP overland flow flood event.

Car park G-1 is not affected by Creek flooding up to and including the 1% AEP flood event.

5.3.2 CAR PARK G5

Car park G5 (refer to Figure 29 for car park location) lies in an area affected by Creek flooding in the 1% AEP flood event.

Car park area G5 is affected by flood hazard H1 (i.e. no vulnerability constraints) in the 1% AEP overland flow flood event.

Car park G5 is not affected by overland flooding up to and including the 1% AEP flood event.

5.3.3 CAR PARK G6

Car park G6 (refer to Figure 29 for car park location) lies in an area affected by Creek flooding in the 2% and 1% AEP flood events.

Car park area G6 is affected by flood hazard H4 and H5 (unsafe for all people and all vehicles) in the 2% and 1% AEP creek flood event.

Car park G6 is not affected by overland flooding up to and including the 1% AEP flood event.

Access to car park G6 should be restricted during flood events due to unsafe flood hazard for all people and all vehicles.

Annexure 4 to Schedule 1 – Stormwater management

4 STORMWATER QUANTITY

4.1 STORMWATER QUANTITY MANAGEMENT

To ensure the development's stormwater runoff will not cause an actionable nuisance to downstream properties, existing and developed stormwater peak flows from the proposed developable areas have been calculated and analysed. These have been modelled using the hydraulic software DRAINS. The ILSAX hydrological model was used in the DRAINS analysis. The ILSAX hydrological model uses hydrological losses and depression storage.

Australian Rainfall Runoff 2016 (ARR2016) rainfall data was used in the DRAINS analysis. Brisbane City Council Planning Scheme refer to the Queensland Urban Drainage Manual (QUDM), where the drainage design standards for developments within the region are provided. According to Table 7.3.1, the Ballymore Precinct would be considered as a 'Open space – parks, etc.' development category, which requires the minor drainage system (pit and pipe network) to be designed for a minimum 63.2% AEP. The major drainage system for the development is must be designed to a minimum 1% AEP, this comprises of the overland flow component of the design and end-of-line discharge components to be design accordingly.

4.2 CATCHMENTS

4.2.1 PRE-DEVELOPED CATCHMENTS

The existing site consists of eight (8) main sub-catchments serviced by existing stormwater infrastructure. The pre-developed peak flows from the development area were analysed for all storm events between the 63.2% AEP and the 1% AEP as per Table 7.3.1 from the Queensland Urban Drainage Manual 2016. DRAINS input parameters for the pre-developed catchments are depicted in Table 4.1 below.

Table 4.1 DRAINS Input Parameters (Pre-developed)

PRE-DEVELOPED CATCHMENTS	CATCHMENT AREA (HECTARES)	IMPERVIOUSNESS (%)	IMPERVIOUS TIME OF CONCENTRATION (MIN)	PERVIOUSNESS (%)	PERVIOUS TIME OF CONCENTRATION (MIN)
A1	2.56	3	5	97	22.5
A2	1.95	20	5	80	22
A3	1.14	45	10	55	13
A4	1.53	43	10	57	22
A5	0.59	-	-	100	19
A6	0.09	100	5	-	-
B1	2.06	57	12.5	43	12.5
B2	2.84	38	7	62	19

Refer to "Appendix B – Stormwater Drawings" for the existing site catchments plan.

4.2.2 POST-DEVELOPED CATCHMENTS

Post-developed peak flows from the developed areas were analysed for all storm events between the 63.2% AEP and the 1% AEP. Catchment areas and fraction impervious values were determined from the preliminary site layout plan within Appendix A and utilising Table 4.5.1 of QUDM 2016.

4.2.3 CATCHMENT 1

Catchment 1 (NRTC development site) consists of multiple sub-catchments discharging into the north and west discharge locations. The times of concentrations were calculated in accordance with Section 4.6 of QUDM 2016. DRAINS input parameters for the developed catchments are depicted in Table 4.2.

Table 4.2 Catchment 1 DRAINS Input Parameters (Post-developed)

POST-DEVELOPED CATCHMENTS	CATCHMENT AREA (HECTARES)	IMPERVIOUSNESS (%)	IMPERVIOUS TIME OF CONCENTRATION (MIN)	PERVIOUSNESS (%)	PERVIOUS TIME OF CONCENTRATION (MIN)
C1	0.27	-	-	100	20
C2.1	0.31	100	5	-	-
C2.2	0.12	100	5	-	-
C3	0.42	83	5	17	7
C4	0.25	-	-	100	18
C5	0.21	100	5	-	-
C6	0.78	100	5	-	-
C7	0.57	46	5	54	32
C21	0.29	66	5	34	10
C23	0.20	70	5	30	5
C24	0.30	53	5	47	5
C25	1.05	-	-	100	19

Catchment 1 has a total area of 4.77 hectares with a total impervious area of 2.52 hectares, in comparison to the pre-developed catchment areas of B1 and B2 in section above, the post-developed catchment has negligible increase in impervious area.

Refer to “Appendix B – Stormwater Drawings” for the existing post developed catchments plan.

4.2.4 CATCHMENT 2

Catchment 2 (Future buildings and Car parks development site) consists of multiple catchments discharging into the north and east discharge locations. The times of concentrations were calculated in accordance with Section 4.6 of QUDM 2016. DRAINS input parameters for the developed catchments are depicted in Table 4.3. Note that the proposed drainage network for Catchment 2 diverts water from the eastern outfall to the northern outfall. This reduces the reliance on the eastern outfall.

Table 4.3 Catchment 2 DRAINS Input Parameters (Post-developed)

POST-DEVELOPED CATCHMENTS	CATCHMENT AREA (HECTARES)	IMPERVIOUSNESS (%)	IMPERVIOUS TIME OF CONCENTRATION (MIN)	PERVIOUSNESS (%)	PERVIOUS TIME OF CONCENTRATION (MIN)
C8	0.7	7	5	93	31
C9	1.01	100	5	-	-
C10	0.36	-	-	100	8
C11	0.59	-	-	100	19
C12	0.09	100	5	-	-
C13	0.96	-	-	100	23
C14 - Roof	0.11	100	5	-	-
C15.1 – Carpark I	0.24	92	7	8	5
C15.2 – Carpark G	0.22	64	9	36	5
C16.1 – Roof	0.15	100	5	-	-
C16.2 – Bypass	0.22	37	5	63	14
C17.1 – Roof	0.18	100	5	-	-
C17.2 – Bypass	0.36	44	5	56	16.5
C18.1 – Roof	0.18	100	5	-	-
C18.2 – Bypass	0.30	52	5	48	16
C19	1.67	-	-	100	23
C20.1 – Roof	0.16	100	5	-	-
C20.2 – Bypass	0.27	33	5	67	8
C22.1 – Roof	0.17	100	5	-	-
C22.2 – Bypass	0.32	38	5	62	11

Catchment 2 has a total of 8.26 hectares with a total impervious area of 3.07 hectares, in comparison to the pre-developed catchment areas of A1-A6 in section above, the post-developed catchment has significant increase in impervious area.

Refer to Appendix B – Stormwater Drawings for the existing post developed catchments plan.

4.3 DRAINS OUTPUT

4.3.1 CATCHMENT 1

The table below demonstrates Catchment 1 post developed attenuated peak run-off will not exceed the Catchment 1 pre-developed peak run-off due to the minimizing of impervious area throughout the, refer to Appendix C for DRAINS model.

Table 4.4 DRAINS Results

ARI (YEARS)	PRE-DEVELOPED PEAK RUNOFF (M^3/S)	POST-DEVELOPED PEAK RUNOFF WITH OSD (M^3/S)	PRE-DEVELOPED PEAK RUNOFF ATTENUATION MET (M^3/S)
1[1]	0.612	**0.598**	**Yes**
2	0.737	**0.660**	**Yes**
5	1.120	**1.040**	**Yes**
10	1.400	**1.330**	**Yes**
20	1.650	**1.520**	**Yes**
50	1.960	**1.730**	**Yes**
100[2]	2.210	**1.950**	**Yes**

[1] Minor drainage system

[2] Major drainage system

4.3.2 CATCHMENT 2

Table overleaf demonstrates Catchment 2 post developed attenuated peak run-off will not exceed Catchment 2 pre-developed peak run-off due to the implementation of on-site detention basins and optimizing the proposed pit and pipe network, refer to Appendix C for DRAINS model. Low flow events will be further investigated at the detail design stage.

Table 4.5 DRAINS Results

ARI (YEARS)	PRE-DEVELOPED PEAK RUNOFF (M^3/S)	POST-DEVELOPED PEAK RUNOFF WITH OSD (M^3/S)	PRE-DEVELOPED PEAK RUNOFF ATTENUATION MET (M^3/S)
1[1]	Detailed design for low flow weir control will be conducted at further design stage to suit the detailed design of each facility.		
2			
5			
10	1.79	**1.79**	**Yes**

ARI (YEARS)	PRE-DEVELOPED PEAK RUNOFF (M^3/S)	POST-DEVELOPED PEAK RUNOFF WITH OSD (M^3/S)	PRE-DEVELOPED PEAK RUNOFF ATTENUATION MET (M^3/S)
20	2.15	**2.10**	**Yes**
50	2.67	**2.47**	**Yes**
100[2]	3.03	**2.78**	**Yes**

[1] Minor drainage system

[2] Major drainage system

4.4 PROPOSED INFRASTRUCTURE

The proposed stormwater network involves the upgrade and extension of the existing pit and pipe network within the NRTC development (Catchment 1) to capture the site runoff. Attenuation of Catchment 1 will not be required as there is no increase in post-development runoff. However, Catchment 2 will require attenuation of the increased post-development runoff. To ensure non-worsening is achieved throughout the developed site, the individual buildings and car park locations were identified as individual catchments. This allows each catchment to provide detention infrastructure to ensure flows determined in the post-developed catchment will be equal or less than the identical existing catchment. This will be favoured as each future building developer will be required to manage and maintain their individual detention tanks accordingly. Also, these works can be carried out as each building is established.

The stormwater attenuation strategy proposed for the development consists of installing six (6) underground on-site detention tanks within the proposed building developments located in Catchment 2.

4.4.1 CATCHMENT 1

4.4.1.1 PROPOSED PITS AND PIPES

The existing stormwater network within Catchment 1 is extensive and will only require extension to proposed Car park A and B. The proposed stormwater network involves the installation of a pit and pipe network, to convey stormwater flows which will then discharge into Enoggera Creek through two (2) existing outlets to the west and north. The pits have been located to maximise capture of overland flow from the sub-catchments within the site. Preliminary locations of the pit and pipe network can be found in Appendix B – Stormwater Drawings. Detailed design of the stormwater will be undertaken with the design of the NRTC.

4.4.2 CATCHMENT 2

4.4.2.1 PROPOSED DETENTION STRATEGY

The stormwater attenuation strategy, proposed for the development, consists of installing six (6) on-site detention (OSD) tanks, to attenuate increased flows from only Catchment 2 to ensure non-worsening. To minimise impact on useable site area, all OSD tanks will be designed within each proposed building location.

The maximum detention tank volumes to account for the 1% AEP event and their respective orifice sizes can be found in table overleaf. The stormwater in Catchment 2 will be discharged predominately into Enoggera Creek, through an existing outlet north of the site.

Observations suggest that the existing headwall will require upgrading to suit the proposed drainage.

The tanks will be designed to appropriately attenuate the developed minor peak flows in detailed design stage, however at the current stage the detention tanks have been sized per the major design flows. The tanks will each be maintained by each future building asset owner, and it is not intended to be hand over to Brisbane City Council.

Table 4.6 Preliminary Detention Tank Detail

TANK NO.	FOOTPRINT SIZE (M^2) *	MAXIMUM VOLUME CAPACITY (M^3) *	ORIFICE SIZE (MM)*
Detention Tank – C15	25	50	95
Detention Tank – C16	35	70	100
Detention Tank – C17	45	90	110
Detention Tank – C18	45	90	110
Detention Tank – C20	40	80	100
Detention Tank – C22	45	90	100

*Note that these parameters would be expected to be adjusted slightly to reflect the eventual detail of each individual building at the time of development.

4.4.2.2 PROPOSED PITS AND PIPES

The proposed stormwater network involves the installation of a pit and pipe network, to convey stormwater flows to the proposed OSD tank and which will then discharge into Enoggera Creek through an existing outlet. The pits have been located to maximise capture of overland flow from the sub-catchments within the site. Preliminary sizing and locations of the pit and pipe network can be found in Appendix B – Stormwater Drawings. Detailed design of the stormwater will be undertaken to suit the detailed design of each stage.

4.4.2.3 PROPOSED OVERLAND FLOW STRATEGY

The proposed overland flow strategy involves the use of appropriate site grading and earthworks, as well as swale and piped drainage. To reduce overland flows through to the neighboring properties to the east, the site grading and earthworks are proposed to compliment the overland flow path and convey majority of the flows to the northern boundary of the site. Swales located on the perimeter on the east of Training Field 3 and east of the Eastern Stand of Ballymore Stadium are maintained to direct runoff into the existing discharge location, refer to Appendix B – Stormwater Drawings. To ensure overland flow towards the east discharge location is achieved, the use of appropriate site grading and earthworks must be implemented to the east catchment.

5 STORMWATER QUALITY

5.1 STORMWATER QUALITY REQUIREMENTS

The proposed overall masterplan will increase the sites impervious area and subsequently increase the pollutants discharging the site. The pollutants will vary between the construction phase and the operational phase of the development. The pollutants anticipated to be encountered are detailed in Table 5.1.

Table 5.1 Anticipated Pollutants During Construction and Operational Phase

	OPERATIONAL PHASE	CONSTRUCTION PHASE
Road Areas	- Heavy metals - Trash and litter - Sediments	- Nutrients - Sediments - Trash and litter
Impervious Pavement Areas	- Gross solids - Trash and litter	- Nutrients - Sediments - Trash and litter

The urban runoff which is contaminated with nutrients, sediments and other pollutants adversely impact the downstream catchment. To limit the impact of these pollutants, the WSUD best practice guidelines were adopted. The WSUD guidelines nominate the use of stormwater quality measures such as bioretention basins, grassed swales, proprietary systems etc. Stormwater water quality measures reduce the impact of the contaminated runoff by treating the captured runoff. It is proposed to use water quality measures during the construction phase and operational phase to ensure minimal impact to the downstream catchments.

The Brisbane City Council City Plan 2014 – SC6.16 Chapter 7 nominates the 'Healthy Waterways Waterbydesign MUSIC Modelling Guideline' relevant water quality targets for the site. The water quality objectives noted in the scheme are as follows:

— 80% Total Suspended Solids Removed

— 60% Total Phosphorus Removed

— 45% Total Nitrogen Removed

— 90% Gross Pollutants (>5mm) Removed.

5.2 STORMWATER QUALITY MODEL

The proposed initial and future Ballymore masterplan was modelled in MUSIC v6.3, where water quality treatment was evaluated with a holistic approach, incorporating all water treatment requirements for the surrounding development into multiple treatment infrastructure. The stormwater quality will be split into the two main phases; NRTC development (Catchment 1) and the Future buildings and Car park developments (Catchment 2).

Figure overleaf shows the combined Catchment 1 and 2 MUSIC Model.

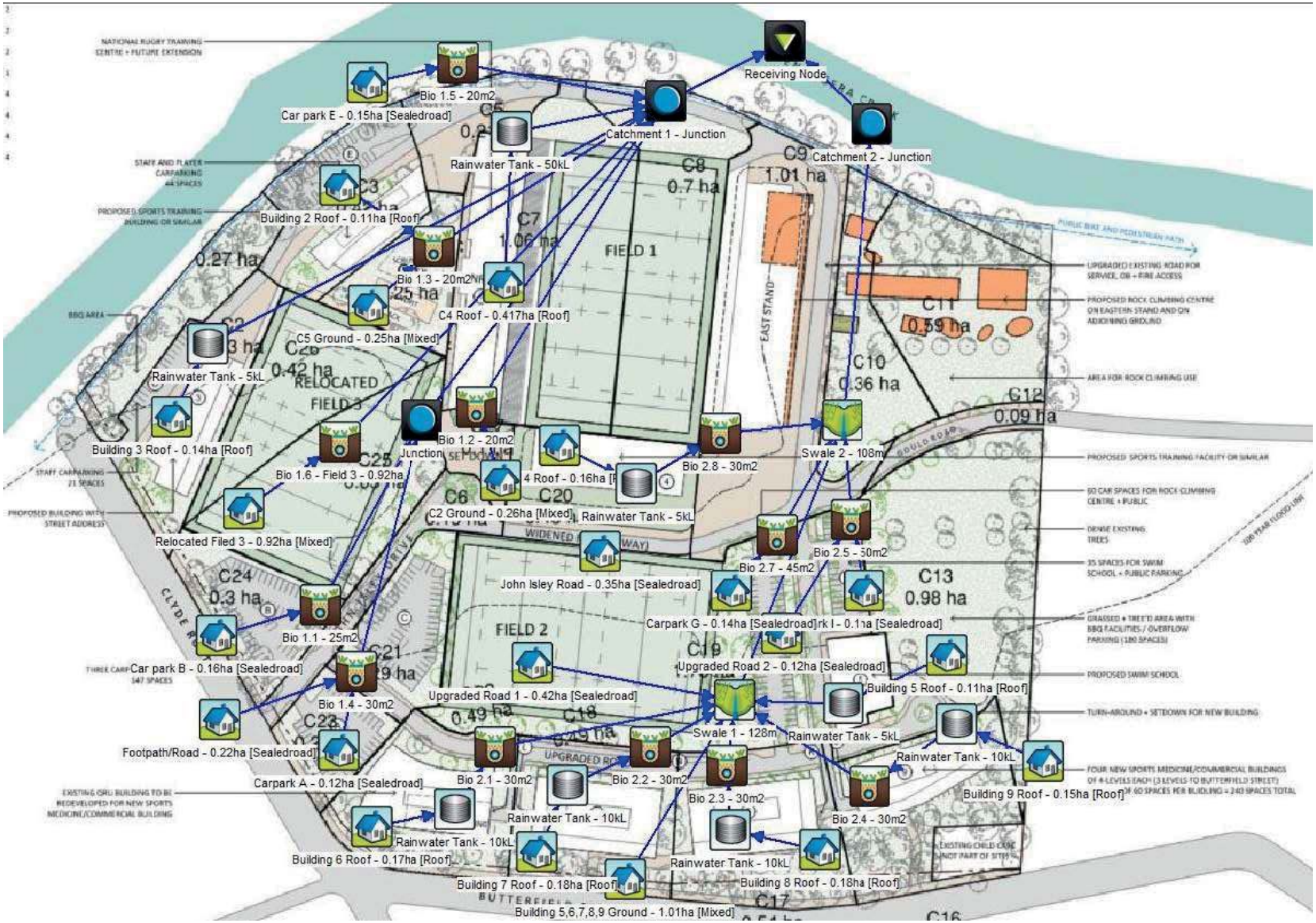


Figure 3 Combined Catchment 1 and 2 MUSIC Model

5.2.1 CATCHMENT 1

The treatment infrastructure utilized to achieve the stormwater quality requirements within Catchment 1 comprised of two (2) proposed Rainwater Tanks, five (5) proposed Bioretentions, and one (1) Sports Pitch (unvegetated Bioretention).

Undisturbed areas such as John Isley Road, Car park C, Car park D and existing paved areas north of the catchment will not be considered in the MUSIC model, as these areas are unchanged existing features.

Rainwater tanks have been implemented in the design, and have been modelled according to the reuse demands required for the facility. The rainwater tanks are required to ensure stormwater quality requirements are met and are included in the treatment train. A minimum of one (1) 50kL tank within the proposed NRTC building and one (1) proposed 5Kl tank within proposed Building 3 will ensure the stormwater quality requirements needed for the proposed site are met.

Table below summarises the treatment infrastructure nodes utilized within the MUSIC Model for Catchment 1.

Table 5.2 MUSIC Model Treatment infrastructure details

TREATMENT INFRASTRUCTURE	PROPERTIES
Rainwater Tanks	One (1) 50KL Rainwater Tank - There is an opportunity for glass reinforced plastic (GRP) tanks to be fitted between foundations within the west stand of Ballymore Stadium (refer to Appendix B). One (1) 5KL Rainwater Tank - Typical 5KL Rainwater Tank collecting roof water from Building 3, with reuse demands of a community facility (refer to Appendix B).
Bioretentions	Bioretention 1.1 – 25m2 - Capturing runoff from proposed Car park B (0.26ha) Bioretention 1.2 – 20m2 - Capturing runoff from proposed Set Down area (0.1ha) Bioretention 1.3 – 20m2 - Capturing runoff from proposed grassed scrummage pitch/sandpit/running track area (0.25ha) Bioretention 1.4 – 30m2 - Capturing runoff from proposed Car park A (0.26ha) and proposed Footpath (0.22ha) Bioretention 1.5 – 20m2 - Capturing runoff from proposed Car park E (0.15ha) Bioretention 1.6 (Sports Pitch) – 9175m2 - Capturing runoff from relocated Field 3 (0.9175ha)

5.2.2 CATCHMENT 2

The treatment infrastructure utilized to achieve the stormwater quality requirements within Catchment 2 comprised of six (6) proposed Rainwater Tanks, seven (7) proposed Bioretentions, and two existing Swales.

Undisturbed areas such as Field 2, Field 1, existing Eastern Stand and existing paved areas north of the catchment will not be considered in the MUSIC model, as these areas are unchanged existing features.

Rainwater tanks have been implemented in the design, and have been modelled per the reuse demands required for each facility. The rainwater tanks are required to ensure stormwater quality requirements are met and are included in the treatment train. A minimum of one (1) 5kL tank has been fitted into each proposed building infrastructure (Building 4-9), this will ensure the stormwater quality requirements needed for the proposed site are met.

Table below summarises the treatment infrastructure nodes utilized within the MUSIC Model for Catchment 2.

Table 5.3 Catchment 2 MUSIC Model Treatment infrastructure details

TREATMENT INFRASTRUCTURE	PROPERTIES
Rainwater Tanks	Four (4) 10KL Rainwater Tank - Typical 10KL Rainwater Tank collecting roof water from proposed Building 6-9, with reuse demands for a mixed industry/business facility (refer to Appendix B). Two (2) 5 Kl Rainwater Tank - Typical 5KL Rainwater Tank collecting roof water from Building 4 and 5, with reuse demands of a community facility (refer to Appendix B).
Bioretentions	Three (3) Bioretention 2.1 – 2.4 – 30m2 - Typical Bioretention basin capturing roof water from proposed Building 6-9. Bioretention 2.5 – 50m2 (split into two (2) 25m^2 Bioretention basins, due to site constraints) - Capturing runoff from Car park I (0.10ha), and Upgraded Road – 2 (0.12ha). Bioretention 2.6 – 45m2 - Capturing runoff from proposed Car park G (0.14ha). Bioretention 2.7 – 30m2 - Capturing roof water from proposed Building 4 (0.16ha)
Swales	Swale 1 - Capturing treated water from Bio 2.1 – Bio 2.4, runoff from Building 6-9 ground areas (1.01ha), roof water from Building 5 and Upgraded Road - 1 (0.42ha) Swale 2 - Capturing treated water from Swale 1, Bio 2.7 and Bio 2.4

5.3 STORMWATER QUALITY RESULTS

The significant increase of impervious and roofed areas to the site causes a large increase to residual loads of total suspended solids (TSS), total phosphorus (TP), total nitrogen (TN) and gross pollutants (GP). The implementation of the above-mentioned treatment infrastructure, provides a large reduction of all residual loads. Table 5.4 shows the results output from MUSIC for both the combined post development site.

Table 5.4 Post-Development Treatment Train Results Comparison

	RESIDUAL LOAD REQUIEMENTS	**CATCHMENT 1** - POST-DEVELOPEMNT RESIDUAL LOAD RESUCTION	STORMWATER QUALITY ACHIEVED (YES/NO)	**CATCHMENT 2** - POST-DEVELOPEMNT RESIDUAL LOAD RESUCTION	STORMWATER QUALITY ACHIEVED (YES/NO)
Total Suspended Solids (kg/yr)	80%	83.4%	**Yes**	85.5	**Yes**
Total Phosphorus (kg/yr)	60%	69.0%	**Yes**	69.8	**Yes**
Total Nitrogen (kg/yr)	45%	46.6%	**Yes**	45.7	**Yes**
Gross Pollutants (kg/yr)	90%	100%	**Yes**	100	**Yes**

It is evident with the existing Swales, proposed Rainwater Tanks and proposed Bioretention Basins, the MUSIC model indicates that the proposed development will achieve compliance with the necessary Brisbane City Council City Plan requirements for stormwater quality outcomes.

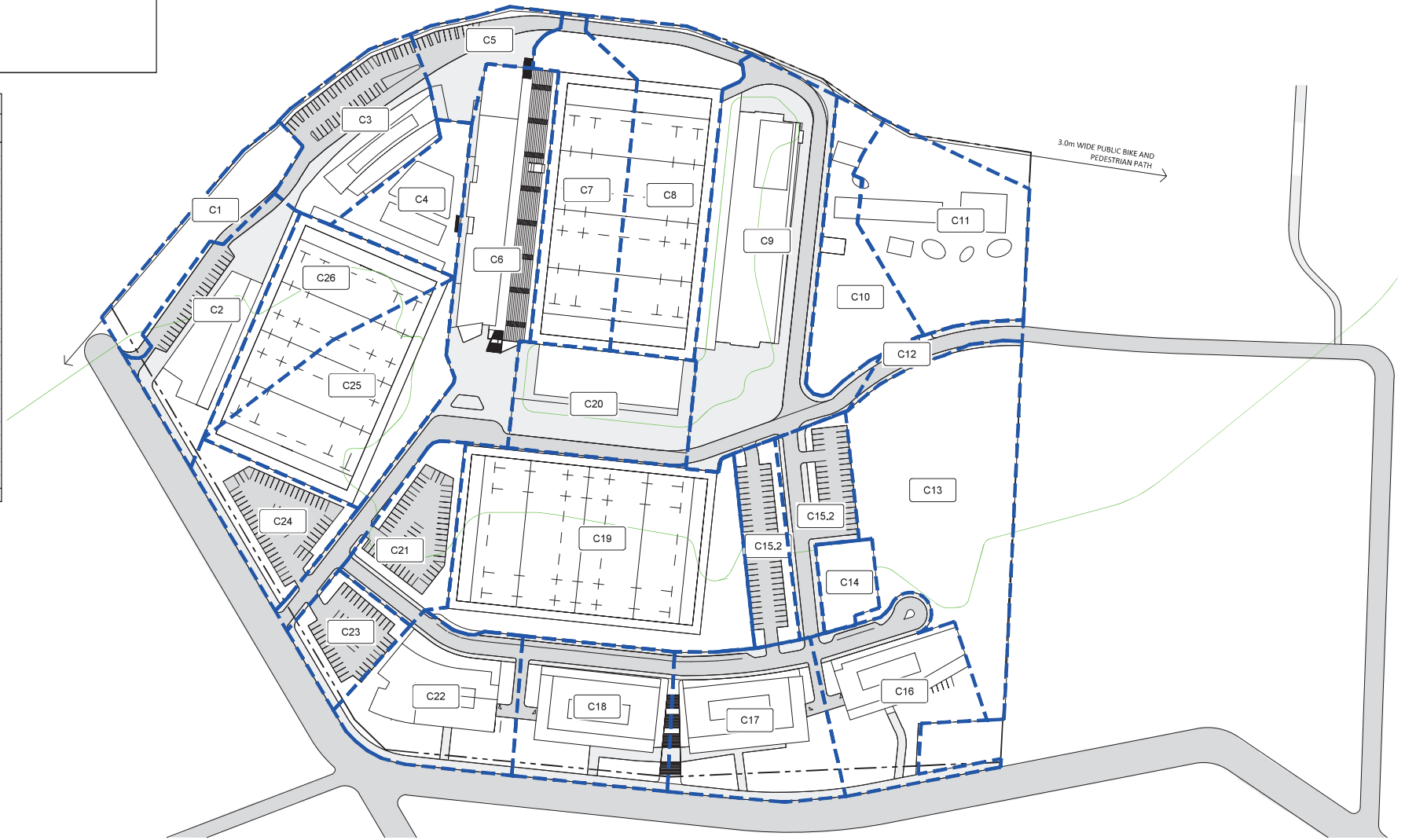
LEGEND

PROPOSED CATCHMENT BOUNDARY

C20 PROPOSED CATCHMENT ID

CATCHMENT AREA

CATCHMENT ID	CATCHMENT AREA (ha)
C1	0.27
C2	0.43
C3	0.42
C4	0.25
C5	0.21
C6	0.78
C7	0.57
C8	0.70
C9	0.98
C10	0.36
C11	0.59
C12	0.12
C13	0.96
C14	0.10
C15,2	0.22
C15,2	0.24
C16	0.50
C17	0.54
C18	0.49
C19	1.51
C20	0.43
C21	0.29
C22	0.49
C23	0.20
C24	0.30
C25	1.05
TOTAL	12.71



PRELIMINARY

Revision	Amendment	Approved	Revision Date
P1	PRELIMINARY ISSUE		18/12/2020
P2	PRELIMINARY ISSUE FOR APPROVAL		12/01/2021

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900 Ann Street, Level 12
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Designed	Approved	Approved Date
NW	JC	24/08/2020
Drawn	Scales	
DP	1:1000	

Project: NATIONAL RUGBY TRAINING CENTRE
BALLYMORE
QUEENSLAND

Sheet: PROPOSED CATCHMENT PLAN

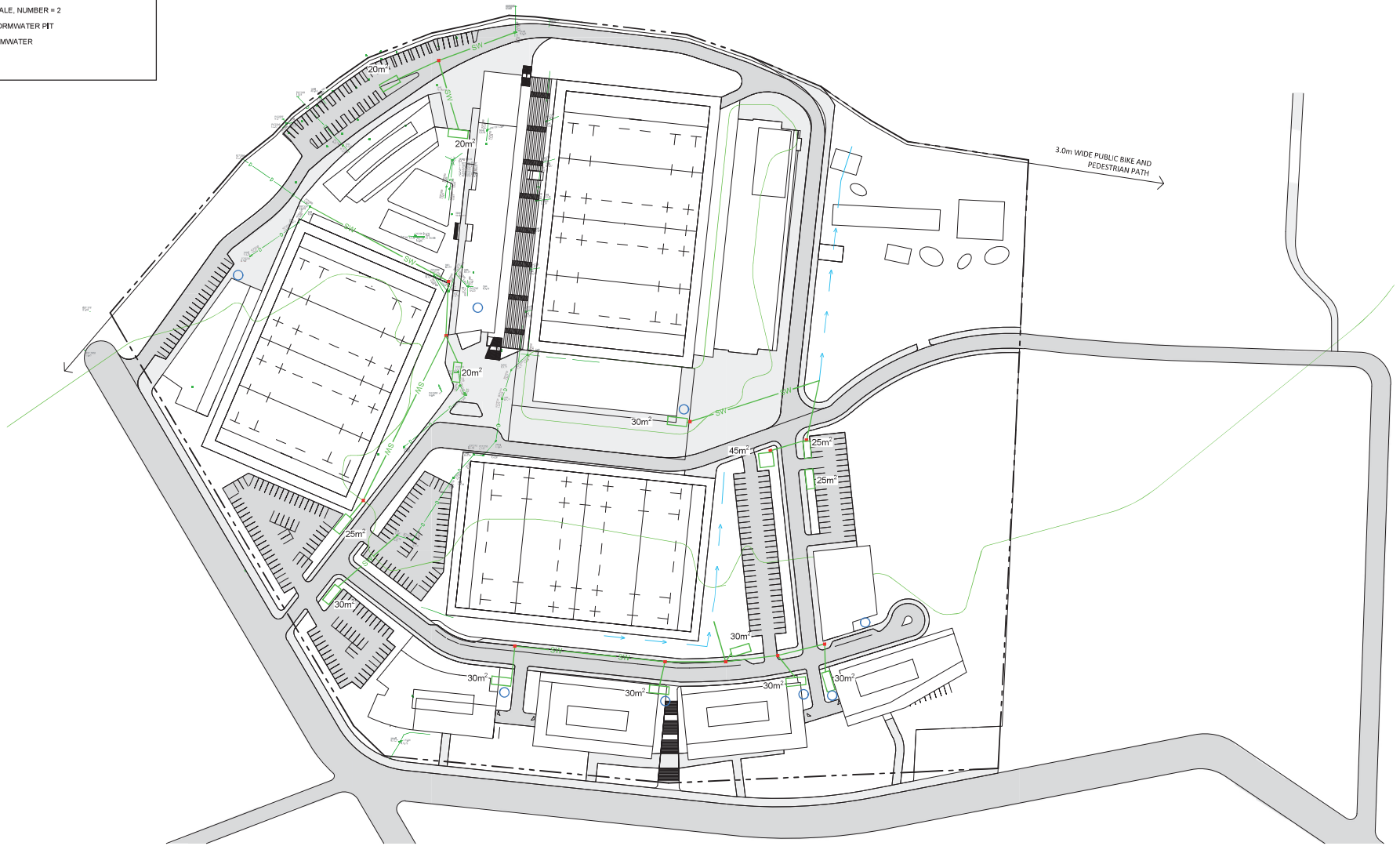
Project No.	Sheet No.	Revision
PS118925	SK28	P2

1:1000 @ A1
1:2000 @ A3
0 10 20 30 40 50 60 70 80 90 100 m

Original Sheet Size A1 [841x594] Plot Date 12 Jan 2021 @ 8:47 AM Path \\corp.pbwan.net\ANZI\Projects\AU\PS118xxx\PS118925_MD - NRTC Ballymore\4_WIP\BIM\CV_Civil\ZD\PS118925-SK26-29_SW_REPORT.dwg SK28

LEGEND

- PROPOSED RAINWATER TANK NUMBER = 8
- PROPOSED BIORETENTION TOTAL AREA = 340m²
- SW — PROPOSED STORMWATER CONNECTION
- PROPOSED SWALE, NUMBER = 2
- PROPOSED STORMWATER PIT
- EXISTING STORMWATER



PRELIMINARY

Revision	Amendment	Approved	Revision Date
P1	PRELIMINARY ISSUE		18/12/2020
P2	PRELIMINARY ISSUE FOR APPROVAL		12/01/2021

wsp
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Fortitude Valley, QLD
Australia

Designed	Approved	Approved Date
JC	JC	24/08/2020
Drawn	Scales	
DP	1:1000	

Project
NATIONAL RUGBY TRAINING CENTRE
BALLYMORE
QUEENSLAND

Sheet
STORMWATER QUALITY PLAN

Project No.	Sheet No.	Revision
PS118925	SK29	P2

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1:2000 @ A3
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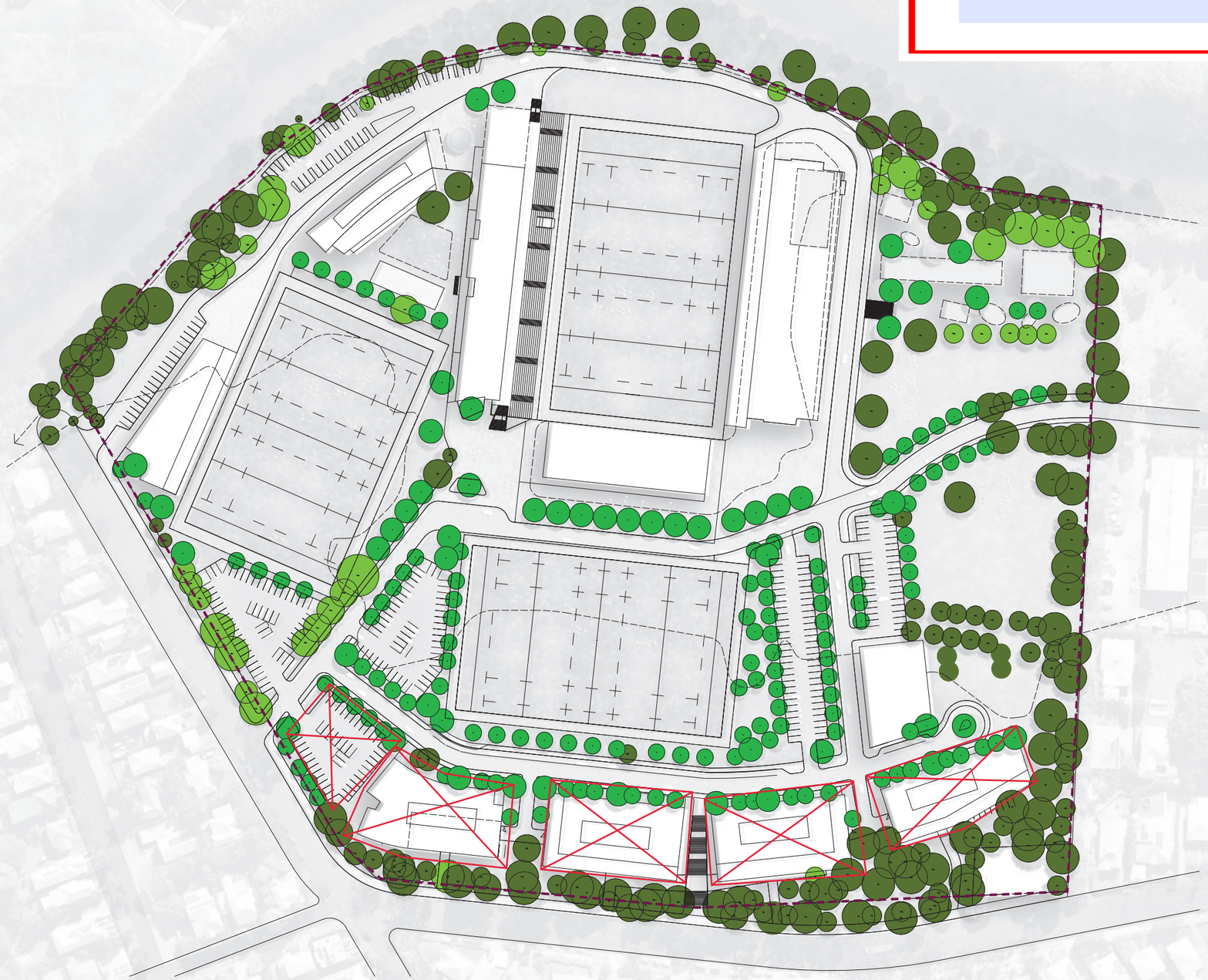
Annexure 5 to Schedule 1 – Landscaping

Amended in red by DSDILGP on

9 December 2021



EXISTING TREE AND NEW TREE PLAN

- Trees to retained
- Trees to retained pending detailed review of proposed works/ Arborist advice
- New Trees

NOTE: Location of existing site trees shown on eastern side of main field are sourced from aerial and location to be confirmed in future phase.

G:\147324 BALLYMORE NATIONAL RUGBY\TRAINING CENTRE\147324-1_BALLYMORE TRAINING CENTRE\C_TECH\CAD\C4_INDESIGN\C4-1_A3 REPORT\147324-1 LANDSCAPE CONCEPT - MASTERPLAN.INDD

SCALE 1:1000 @A1 / 1:2000 @A3

Amended in red by DSDILGP on

9 December 2021

FIELD 1

RELOCATED FIELD 3

FIELD 2

GOULD ROAD

CLYDE ROAD

JOHN ISLEY DRIVE

BUTTERFIELD STREET

LANDSCAPE MASTER PLAN

SCALE 1:1000 @A1 / 1:2000 @A3

PLANTING
TREES

ARAUCARIA heterophylla 'Norfolk Island Pine'

LIVISTONA australis 'Cabbage-tree Palm'

DELONIX regia 'Poinciana'

CUPANIOPSIS anacardioides 'Tuckeroo'

BRACHYCHITON acerifolius 'Flame Tree'

G:\147324 BALLYMORE NATIONAL RUGBY TRAINING CENTRE\147324-1_BALLYMORE TRAINING CENTRE\C_TECHNICAL\C4_INDESIGN\C4_1_A3 REPORT\147324-1 LANDSCAPE CONCEPT - MASTERPLAN.INDD

PLANTING
SHRUBS AND GROUNDCOVERS

MYOPORUM ellipticum 'Creeping Boobialla'

ANIGOZANTHOS 'Big Red'

ACROSTICHUM speciosum 'Mangrove Fern'

DIANELLA caerulea 'Blue Flax Lily'

ALPINIA mutica 'False Cardomom Ginger'

LOMANDRA hystrix 'Green Mat-rush'

DORYANTHES palmeri 'Giant Spear Lily'

ANIGOZANTHOS 'Yellow Gem'

G:\147324 BALLYMORE NATIONAL RUGBY TRAINING CENTRE\147324-1_BALLYMORE TRAINING CENTRE\C_TECHNICAL\C4_INDESIGN\C4_1_A3 REPORT\147324-11 LANDSCAPE CONCEPT - MASTERPLAN.INDD