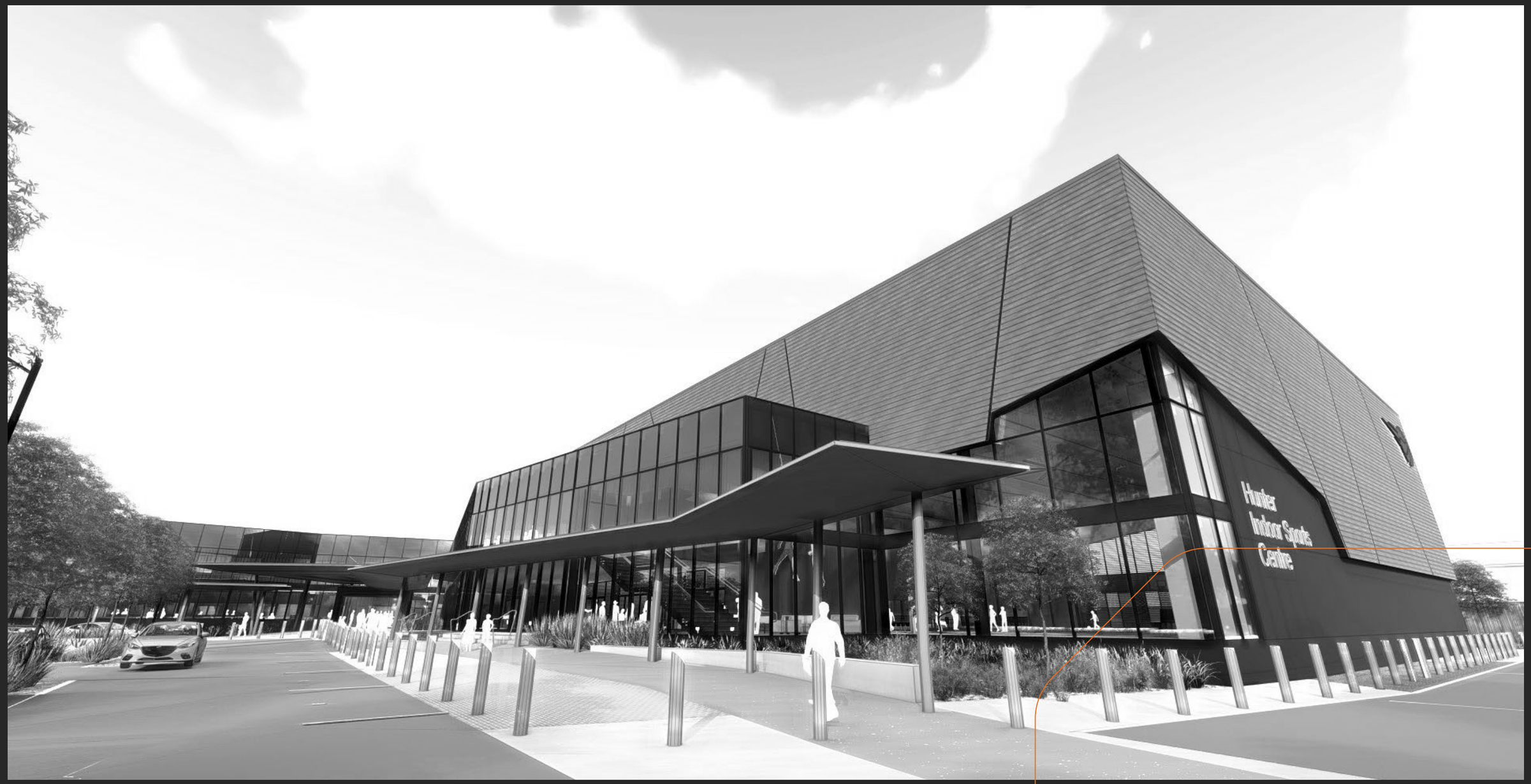
EJE Integrity Innovation Inspiration

Architectural Design Report

Architecture | Interior Design | Heritage



20 August 2024

Revision Summary

Date	Reason	Revision
14/05/2024	Test of Adequacy Submission	A
22/05/2024	TOA Submission	B
20/08/2024	Revised ToA Issue	C

Contents

1. Introduction

EJE has been commissioned by Basketball Association of Newcastle Limited (BANL) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD- 65595459) for the proposed Hunter Indoor Sport Centre with courts, indoor stadium, amenities and associated civil and landscaping works, at 2 Monash Road and 24 Wallarah Road, New Lambton.

Description of the site and Locality

The site is located at 2 Monash Road and 24 Wallarah Road, New Lambton, within the Newcastle local government area (LGA). The site comprises multiple parcels of land and is legally described as:

- Lot 2380 DP755247
- Lot 2379 DP755247
- Lot 2378 DP755247
- Lot 2377 DP755247

The project area also includes the land on which the existing amenities block is located.

Figure 1: South-East Aerial Image

Hunter Sports Centre - Key Information

Element	Proposal
Applicant	Basketball Association of Newcastle Limited
Project Name	Hunter Indoor Sports Centre
Site Address / Legal Description	2 Monash Road and 24 Wallarah Road, New Lambton Lot 2380 DP755247, Lot 2379 DP755247, Lot 2378 DP755247 and Lot 2377 DP755247. Amenities block land.
Site Area	The site has an area of 7.83ha.
GFA	Indicative GFA of up to 17,700m2, comprising ground floor of approximately 15,300m2 and first floor mezzanine of 2,400m2.
Proposed Maximum Building Height	15,820 AGFL, RL 25,020 AHD
Proposed Car Parking Spaces	240 car parking spaces.
Hours of Operation	The complex will operate 7 days a week from 6am - 11pm
Staging	The proposal has been designed so that the project can be delivered as an initial block of six courts with subsequent additions to be delivered over several construction stages, as described below: **Stage 1A** A single storey building with total GFA of approximately 10,218m2 comprising: ▪ Ground floor: 6 x basketball courts, amenities to support the functioning of the complex including bathrooms, change rooms, lobby and foyer, retail tenancy and café. ▪ Car park with 110 spaces **Stage 1B** ▪ Ground floor extension to the west to provide 2 x courts with a GFA of approximately 1,630m2. ▪ Additional 75 Car parks, total 185 spaces at completion of Stage 1b. ▪ Mezzanine level: function rooms, administration space and training areas. **Stage 2** Extension to the northern and southern sides of the existing building with total additional GFA of approximately 7,180m2 comprising: ▪ Ground floor 3 x courts including Show court with retractable grandstand seating over the 2 adjacent courts ▪ Extension to the southern side of the building to provide 1 x court plus high performance training area. ▪ Mezzanine level: extension of mezzanine to provide additional corporate spaces. ▪ Expansion of existing carpark to provide 240 spaces The staging approach will be dependent on available funding and full details will be provided in the EIS. BANL is committed to delivery of the full proposal subject to allocation of additional funding. Estimated construction start date for construction of the first stage is April 2025.
Employment Numbers	Construction Employment 267 Operational Employment 150
Expected CIV	Over $30 million.

Executive Summary

EJE Architecture was appointed as Lead Consultant for the Hunter Indoor Sports Centre (HISC) project in October 2023 to deliver the design for this exceptional project for the Newcastle Basketball and the City of Newcastle.

HISC is briefed as a 12 court facility, comprising a building of approximately 17,700m² of multi-purpose indoor sporting facilities and ancillary spaces including Allied Health Facilities, Function Rooms, Café and Kiosk, and Players and Officials amenities, with external carparking and significant landscaping .

The stated aim of HISC is to provide a new state of the art indoor sports facility that caters to a multitude of users including Newcastle Basketball as the primary tenant, but also caters for Netball, Volleyball, Futsal and Pickle Ball. The proposed facility will allow Newcastle Basketball to move out of their current end of life facility and centralise themselves within one building that once complete will be the largest indoor sports facility in New South Wales.

The land for the proposed indoor sports facility at is at 2 Monash Road and 24 Wallarah Road, New Lambton. The current use of the site is sporting fields known as Wallarah and Blackley Ovals.

The proposed Indoor Sports Facility on the site will set a high-quality benchmark for Newcastle and is required to meet the Design Excellence standard as determined by the State Design Review Panel.

The project currently has State Funding for Stage 1a, with applications in for further Federal Funding which will allow additional Stages to be undertaken.

Figure 2: 3D Render - Approach View

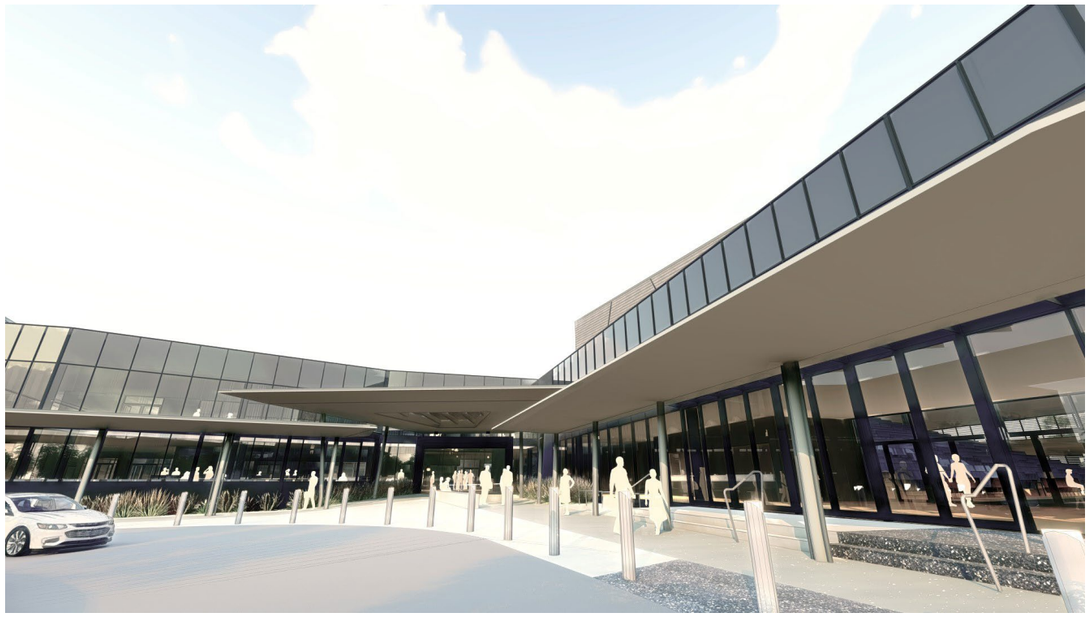


Figure 3: 3D Render - Entrance View

Figure 4: 3D Render - Aerial View

2. Project Brief & Design Objectives

2.1 Functional Design Brief

The Functional Design Brief for the project has been developed throughout Concept Design to include key spaces such as:

- 12 Community Courts with associated Change Rooms and Amenities designed with the ability to be constructed in a staged manner
- High Performance Training Hub
- Show Court with retractable seating for 2,500 patrons.
- Allied Health Hub
- Public Foyer and Lobby Spaces
- Multi-Purpose and Function Rooms
- Administration Area
- Café and Dining Area
- Public Amenities
- Landscaping and Carparking zones with pedestrian links to existing networks and public transport.

2.2 Project Design Principles

The Need

The driving project needs are to:

- Replace an ageing stadium that no longer meets contemporary standards
- Address the short fall in indoor court provision across the Lower Hunter
- As an enabler and supporting project for the visionary Hunter Park Precinct and Broadmeadow Place Strategy

Objectives

- To facilitate improved health outcomes, economic opportunity and social and community inclusion particularly for people with a disability, culturally diverse communities and women and girls.
- To address a priority regional need by increasing the supply of indoor courts to address part of the identified shortage of court availability in the region
- Create a regional quality facility to improve user experience and address functional and quality issues of the current facility
- Enable major regional events and representative games to be held in the region
- Complement high profile spectator facilities to be provided in Hunter Park
- Provide athlete development and training opportunities and pathways
- Complement and leverage existing and planned sport facilities in and around the Hunter Park Precinct.
- Provide multi-sport courts for other indoor sports and spaces for community and partner event

SEARS Table

SEARs Requirement	Response/Reference Section
Design Quality	**Refer to:**
The EIS must: • Demonstrate how the development will achieve good design in accordance with the seven objectives for good design in Better Placed. • Demonstrate that the development has been reviewed by the State Design Review Panel (SDRP) consistent with the NSW SDRP: Guidelines for Project Teams. • Recommendations of the jury and Design Integrity Panel (where a competitive design process has been held) or the SDRP are to be addressed prior to lodgment. • Provide a Design Excellence Strategy to clearly outline measures to maintain design integrity for future detailed development applications, taking into consideration advice from the SDRP. • Address matters raised by Council at Attachment B.	Refer Section 4.3 Good Design in Accordance with Better Placed Objectives Refer Section 5.5 State Design Review Panel N/A Refer Section 4.2 Design Excellence Statement Refer Section 3. Site and Context Analysis
Built Form & Urban Design	**Refer to:**
The EIS must: • Explain and illustrate the proposed built form, including a detailed site and context analysis to justify the proposed site planning and design approach. • Demonstrate how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality. • Demonstrate how the building design will deliver a high-quality development, including consideration of façade design, articulation, activation, roof design, materials, finishes, colours, any signage and integration of services. • Assess how the development complies with the relevant accessibility requirements. • Address matters raised by Council at Attachment B.	Refer Section 3. Site & Context Analysis Refer Section 4. Design Quality Refer Section 5. Design Strategies & Process Refer Section 4.2 Design Excellence Refer Section 5.4 Urban Design Principles Refer Section 5.5 State Design Review Panel Refer Section 3. Site and Context Analysis
Trees & Landscaping	**Refer to:**

The EIS must:
• Assess the number, location, condition and significance of trees to be removed and retained and note any existing canopy coverage to be retained on-site.
• Provide a detailed site-wide landscape plan, that:
  • Details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage (as a percentage of the site area).
  • Provides evidence that opportunities to retain significant trees have been explored and/or informs the plan.
  • Demonstrates how the proposed development would:
  • Contribute to long term landscape setting in respect of the site and streetscape.
  • Mitigate the urban heat island effect and ensure appropriate comfort levels on-site.
  • Contribute to the objective of increased urban tree canopy cover.
  • Maximise opportunities for green infrastructure, consistent with Greener Places and having regard to any bush fire risk.
• Address matters raised by Council at Attachment B
	Refer AIA prepared by Bark.
	Refer to Landscape Design Report and Drawings by Terras.

SEARs Requirement	Response/Reference Section
Environmental Amenity	**Refer to:**
The EIS must: ▪ Address how good levels of environmental amenity would be achieved, including access to natural daylight and pedestrian movement throughout the area including access to open space. ▪ Assess amenity impacts on the surrounding locality (both within and outside the site), including lighting impacts, solar access, visual privacy, visual amenity, view loss and view sharing, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. ▪ Provide a solar access analysis of the overshadowing impacts of the development within the site, on surrounding properties and public spaces (during summer and winter solstice and spring and autumn equinox) at hourly intervals between 9am and 3pm, when compared to the existing situation and a compliant development (if relevant). ▪ Include an external lighting plan and lighting impact assessment which demonstrates compliance with the most recent/applicable version of Australian Standard AS/NZS 4282 Control of the obtrusive effects of outdoor lighting. The lighting impact and illumination assessment for the proposal should consider the adjoining residential areas, potential light pollution and light overspill, potential impacts to surrounding sensitive receivers, potential impacts on the safety of the road network, cumulative impacts and propose mitigation measures.	Refer Section 6.7 Refer Section 7.3.1 Refer Section 7.3.3 Refer External Lighting Plan prepared by EPA. Refer Wind Impact Assessment by Windtech.
Visual Impact	**Refer to:**
The EIS must: ▪ Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. ▪ The visual impact assessment should identify potential impacts on the surrounding environment including the urban setting and surrounding land uses. ▪ Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that addresses the impacts of the development on the existing catchment.	Refer Visual Impact Assessment prepared by Terras Landscape Architects
Ecologically Sustainable Development (ESD)	**Refer to:**

The EIS must:
▪ Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.
▪ Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.
▪ Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.
▪ If Chapter 3 of SEPP (Sustainable Buildings) 2022 applies:
  ▪ Demonstrate how the development has been designed to address the provisions set out in Chapter 3.2(1).
  ▪ Provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with section 35B of the EP&A Regulation.
  ▪ Provide a net zero statement (as defined in section 35C of the EP&A Regulation) that includes:
  ▪ Evidence of how the development will either be fossil fuel-free after the occupation of the development commences or transition to be fossil fuel-free by 1 January 2035.
  ▪ Details of any renewable energy generation and storage infrastructure implemented and any passive and technical design features that minimise energy consumption.
  ▪ Estimations of annual energy consumption for the building and amount of emissions relating to energy use in the building (if information is available).
	Refer Section 6.7
	Refer ESD report prepared by Northrop

SEARs Requirement	Response/Reference Section
Traffic, Transport and Accessibility	**Refer to:**
The EIS must include a Traffic and Transport Impact Assessment prepared by suitably qualified person/s in accordance with the Austroads Guide to Traffic Management Part 12, the complementary TfNSW Supplement and RTA Guide to Traffic Generating Developments that includes, but is not limited to the following:	
• An analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	Refer Section 3.2.5 Refer Section 5.5.5 Refer Section 7.2.3 Refer Traffic and Transport Impact Assessment prepared by SECA solutions.
• Details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.	
• Consideration of the traffic impacts on existing and proposed intersections including Turton Road/Griffiths Road, Turton Road/Young Road and Turton Road/Lambton Road.	
• Analysis of the impacts of the proposed development (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling) and peak movements during events (if relevant), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	
• Measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.	
• Explanation and justification of all inputs informing the proposed mitigation measures and conclusions.	
• Measures to promote sustainable travel choices for residents and employees such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high-quality end-of-trip facilities, and implementing a Green Travel Plan.	
• Include an Operation Management Plan inclusive of an Events Management Plan that details measures to be implemented during large events to mitigate traffic impacts, including parking and traffic controls. The plan should have regard to the existing Operational Management Plan for McDonald Jones Stadium and comprise measures to ensure large scale events do not coincide.	
• Address matters raised by Transport for NSW at Attachment B.	
• Address matters raised by Council at Attachment B.	
Biodiversity	**Refer to:**
The EIS must:	
• Assess any biodiversity impacts associated with the development in accordance with the Biodiversity Conservation Act 2016 and the Biodiversity Assessment Method 2020, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted, or the site is on biodiversity certified land.	Refer BDAR prepared by SLR
• Address matters raised by Biodiversity Conservation Division at Attachment B	
Contamination	**Refer to:**
The EIS must:	
• Assess and quantify any soil or groundwater contamination and demonstrate that the site is suitable (or will be made suitable, after remediation) for the development in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021 and the associated guidelines.	Refer RAP prepared by Kleinfelder

SEARs Requirement	Response/Reference Section
Aboriginal Cultural Heritage	**Refer to:**
Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts on any Aboriginal cultural heritage values on the land.	Refer ACHAR prepared by Artefact.
Heritage	**Refer to:**
Where there is potential for direct or indirect impacts on the heritage significance of environmental heritage, provide a Statement of Heritage Impact and Archaeological Assessment (if potential impacts to archaeological resources are identified), prepared in accordance with the relevant guidelines, which assesses any impacts and outlines measures to ensure they are minimised and mitigated.	Refer Section 3.1.3 Refer to the following reports by Artefact. ▪ Aboriginal Archaeological Technical Report ▪ ACHAR ▪ Connecting with Country ▪ Historical Archaeological Assessment
Flooding	**Refer to:**

The EIS must:
▪ Identify and describe any on-site flood impacts and risks associated with the proposed development, having regard to the relevant provisions of the NSW Floodplain Development Manual and other local or State studies and guidance.
▪ Describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.
▪ Assess the impacts of the development, including any changes to flood risk both on-site or off-site, and identify any mitigation and management measures to minimise the impacts of flooding on the proposed development.
▪ Provide a Flood Emergency Response Plan prepared by a suitably qualified person that addresses:
  ▪ Likely flood behaviour;
  ▪ Flood warning systems;
  ▪ Education awareness program;
  ▪ Evacuation and evasion procedures;
  ▪ Evacuation routes and flood refuges; and
  ▪ Flood preparedness and awareness procedures for visitors.
▪ Address matters raised by Biodiversity Conservation Division at Attachment B
▪ Address matters raised by Council at Attachment B
	Refer Section 5.1
	Refer Flood Report prepared by Torrent.

SEARs Requirement	Response/Reference Section
Public Space	**Refer to:**

The EIS must:
▪ Demonstrate how the development maximises the amount, access to and quality of public spaces, reflecting relevant design guidelines and advice from the local councils and the Department.
▪ Demonstrate how the development:
  ▪ Ensures that public space is welcoming, attractive and accessible for all.
  ▪ Maximises permeability and connectivity.
  ▪ Maximises the amenity of public spaces in line with their intended use, such as through adequate facilities, solar access, shade and wind protection.
  ▪ Maximises street activation.
  ▪ Minimises potential vehicle, bicycle and pedestrian conflicts.
▪ Address how Crime Prevention through Environmental Design (CPTED) principles are to be integrated into the open space for the development, in accordance with Crime Prevention and the Assessment of Development Applications Guidelines.
	Refer Section 7.2.3
	Refer Section 8.1
	Refer CPTED report prepared by James Marshall and Co.

Stormwater Drainage and Water Quality	**Refer to:**

The EIS must:
▪ Provide an Integrated Water Management Plan for the development that:
  ▪ Is prepared in consultation with the local councils and any other relevant drainage or water authority.
  ▪ Outlines the water-related servicing infrastructure required by the development (informed by the anticipated annual and ultimate increase in servicing demand) and evaluates opportunities to reduce water demand (such as recycled water provision).
  ▪ Details the proposed drainage design (stormwater and wastewater) for the site including any on-site treatment, reuse and detention facilities and their proposed locations, water quality management measures and nominated discharge points.
  ▪ Demonstrates compliance with the local council or other drainage or water authority requirements and avoids adverse downstream impacts.
▪ Where drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards of, the local council or other drainage or water authority.
▪ Address matters raised by Council at Attachment B
	Refer Stormwater and Water Quality Report prepared by Northrop.

Ground and Water Conditions	**Refer to:**

The EIS must:
▪ Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site, including soil erosion, salinity and acid sulfate soils.
▪ Provide a Surface and Groundwater Impact Assessment that assesses potential impacts on:
  ▪ Surface water resources (quality and quantity) including related infrastructure, hydrology, dependent ecosystems, drainage lines, downstream assets and watercourses.
  ▪ Groundwater resources in accordance with the Groundwater Guidelines.
	Refer Groundwater Report prepared by Kleinfelder

SEARs Requirement	Response/Reference Section
Social	**Refer to:**
Prepare a social impact assessment, in accordance with the Social Impact Assessment Guidelines for State Significant Projects, which: ▪ Identifies and analyses the potential social impacts of the development, from the points of view of the affected community/ies and other relevant stakeholders, i.e. how they expect to experience the project. ▪ Considers how potential environmental changes in the locality may affect people's: way of life; community; access to and use of infrastructure, services, and facilities; culture; health and wellbeing; surroundings; personal and property rights; decision-making systems; and fears and aspirations, as relevant and considering how different groups may be disproportionately affected. ▪ Assesses the significance of positive, negative, and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest. ▪ Includes mitigation measures for likely negative social impacts, and any proposed enhancement measures. ▪ Details how social impacts will be adaptively monitored and managed over time.	Refer Social Impact Assessment prepared by LCG Solutions.
Noise & Vibration	**Refer to:**
The EIS must include a noise and vibration assessment in accordance with the relevant NSW Environment Protection Authority (EPA) guidelines. This assessment must detail construction and operational noise and vibration impacts on nearby sensitive receivers (both within and external to the site) and outline the proposed management and mitigation measures that would be implemented.	Refer Acoustic Assessment prepared by RAPT Consulting.
Construction	**Refer to:**

The EIS must:
▪ Include an assessment of any potential impacts of construction on the amenity of the surrounding area (including the public domain and within the site) with respect to noise and vibration, air quality, dust and particle emissions, water quality, storm water runoff, groundwater seepage, soil pollution and construction waste, having regard to relevant standards and guidelines, and identify required measures to mitigate potential impacts to acceptable levels
▪ Address any potential impacts, particularly from the use of cranes during the construction phase, on any surrounding helicopter flight paths.
▪ Include a Construction and Pedestrian and Traffic Management Plan addressing:
  ▪ Details of peak hour and daily construction and servicing vehicle movements and access arrangements and cumulative impact from surrounding development sites, on the local road network, public transport services and parking (including the temporary loss of parking on the site)
  ▪ Road safety at key intersections and locations subject to heavy vehicle movements and high pedestrian activity
  ▪ Details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements
  ▪ Details of temporary cycling and pedestrian access during construction demonstrating that pedestrian and bicycle rider movements along footways and cycleways are maintained at all times during construction activities
  ▪ Should the development require closure of either cycling or pedestrian facilities, adequate safety measures and diversion measures to limit time delay and detour distances should be detailed
  ▪ Assessment of traffic and transport impacts during construction and how these impacts will be mitigated for any associated traffic, pedestrians, cyclists and public transport operations.
	Refer Construction Management Plan prepared by APP
	Refer Aviation Impact Assessment by AviPro
	Refer Construction, Pedestrian and Traffic Management Plan prepared by SECA.

SEARs Requirement	Response/Reference Section
Waste Management	**Refer to:**
The EIS must: ▪ Identify, quantify and classify the likely waste to be generated during construction including the disposal facility nominated for each waste type during construction. ▪ Describe measures to be implemented to minimise, reuse, recycle and safely dispose of this waste. ▪ Identify appropriate servicing arrangements (including but not limited to, waste management storage and collection, loading zones and mechanical plant) for the site.	Refer Waste Management Report Dickens Solutions
Infrastructure Requirements and Utilities	**Refer to:**
The EIS must, in consultation with the relevant service provider: ▪ Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site. ▪ Identify any infrastructure upgrades required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained. ▪ Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development. ▪ Address matters raised by Hunter Water Corporation at Attachment B. ▪ Address matters raised by Ausgrid at Attachment B.	Refer Section 5.5.6
Staging and Operation	**Refer to:**
The EIS must provide: ▪ Details of the staging and/or sequencing of the proposed development. ▪ Details of how construction and operation would be managed and any impacts mitigated. ▪ Provide details of existing (if relevant) and proposed operations, including patron capacity, hours of operation, lighting and illumination, and typical events to be held. ▪ Address matters raised by Council at Attachment B.	Refer Section 5.1

3. Site & Context Analysis

3.1 Site Due Diligence Assessments

3.1.1 Site Visit

The Design and Consultant Team have undertaken several physical site inspections of the project site during the course of the Concept Design and the preparation of the SSDA. The site only has one direct street interface being the eastern frontage to Turton Road with Monash Road being physically removed from the site by the existing drainage canal (Ker-rai Creek). Pedestrian access from Monash is via a footbridge located approximately halfway along the Monash Road boundary. A pedestrian link to Womboin Road from the cycle way along Monash Road, adjacent to Lambton High School, exists in the north western portion of the site.

The design challenge is to create and maintain urban activation to Turton Road whilst overcoming the flooding requirements caused by the sites proximity to Ker-rai Creek. Vehicular access to the site is limited to Turton Road. There is an existing stand of mature trees along the Turton Road frontage. The site is generally flat, being used for sporting ovals, with a slight slope from the western edge to the eastern boundary.

The site is bounded by Arthur Edden Oval to the west, Lambton High and a residential development to the north, Turton Road to the east, and Ker-rai Creek drainage canal to the south separating the site from the Monash Road residential area.

PHOTO 1 - TURTON RD - FACING SOUTH-WEST

PHOTO 2 - TURTON RD - FACING WEST

PHOTO 3 - MONASH RD - FACING NORTH-NORTH-WEST

PHOTO 4 - MONASH RD - FACING NORTH-NORTH-EAST

PHOTO 5 - CNR. TURTON & MONASH RDs - FACING NORTH-WEST

*IMAGES SOURCE - GOOGLE STREETVIEW

PHOTO 6 - MONASH RD - FACING NORTH-EAST

KEY

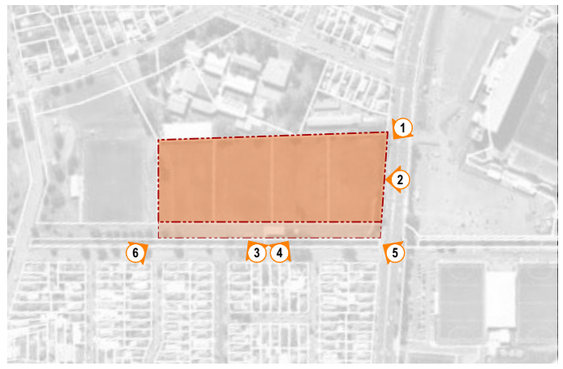


Figure 5: Site Context Photos

3.1.2 Land Survey

A revised detail and contour survey, including adjacent lots, was undertaken for the project site. This includes title and land ownership details, topographical features, surrounding roads/infrastructure, building structures and features and services above and below ground.

The site includes a strip of land to the south where the amenities block is located and also encompasses the existing pedestrian footpath. This part of the site is currently untitled land.

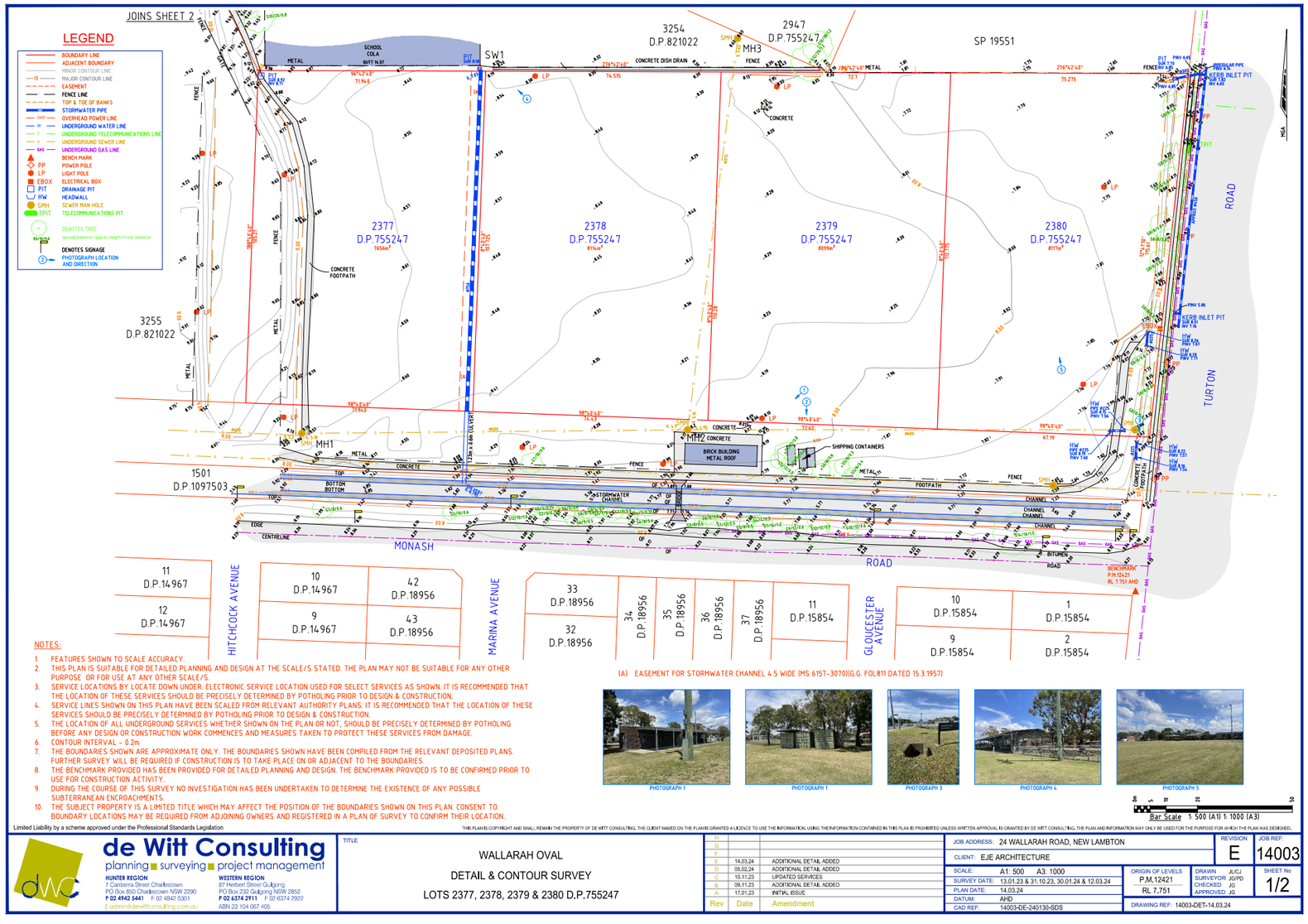


Figure 6: Land Survey

3.1.3 Heritage Strategy & Impact Strategy

A European and Indigenous Heritage assessment has been undertaken for the site by Artefact Consulting. The proposed site is not a heritage item nor is it within a heritage conservation area. The closest heritage item on the Newcastle Local Environment Plan 2012 is the Brick Stormwater Culvert (#1693) located at 41 Wallarah Road New Lambton.

The nearest Potential Archaeological Deposit (PAD) is located at Broadmeadow Railyards approximately 800m to the south east of the subject site.

The Artefact report is included as part of the SSDA.

Figure 7: Image taken from Artefact Report - "Corroboree at Newcastle" 1818 (Source: State Library of NSW)

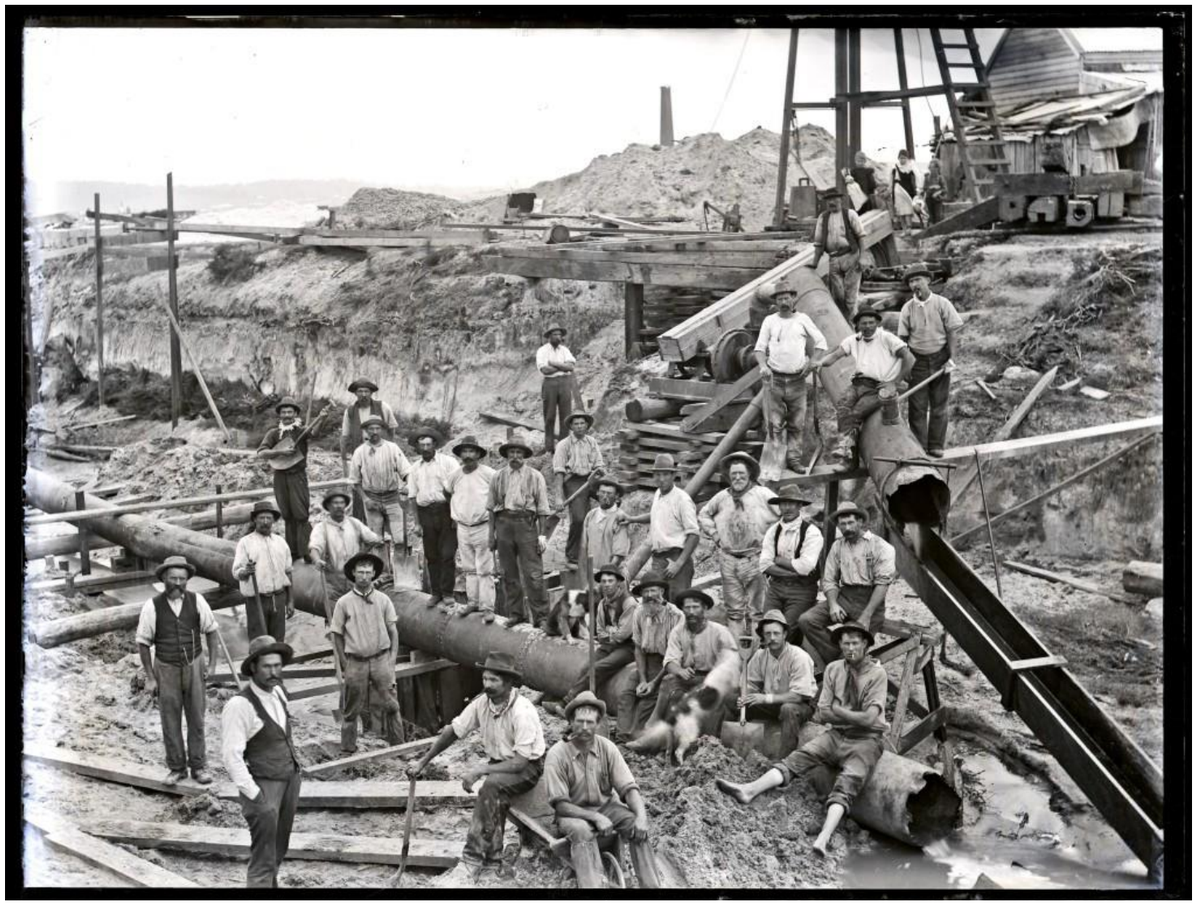


Figure 8: Image taken from Artefact Report - "Drain construction workers at Broadmeadow, NSW, 6 April 1900. University of Newcastle Cultural Collections."

3.1.4 Geotechnical & Contamination Surveys

The project has engaged geotechnical engineers, Kleinfelder, to undertake geotechnical and contamination investigations specific to the project requirements. This includes geotechnical cores to the site to a likely depth suitable for the proposed usage of the site. These core samples were also used to inform the Archaeological Report prepared by Artefact.

A Contamination Assessment and RAP was undertaken in April 2024 by Kleinfelder advised that whilst contaminants were found, it is concluded that the site does not present a risk of harm to human health or the environment subject to the Remediation Action Plan (RAP) for the site being implemented.

Figure 9: Geotech Bore Hole Locations

3.1.5 Overland Flow & Flood Study

It has been identified that the site is subject to overland flow to the north east from Ker-Rai Creek breaking its bank westwards from Turton Road and flowing in a north east direction to Turton Road. The existing eastern portion of the current playing fields currently forms part of the flood storage zone for the local area and will need to be maintained with a minimum of 80% of the capacity retained. A Flood Information Certificate has been provided by the Newcastle Council identifying that the minimum habitable floor level for the development is to be a minimum of RL 8.9 AHD. The building Ground Level has been raised to accommodate the advice provided, allowing for the 0.5m freeboard set by the NSW Government.

Designing for the flood constraints has been one of the key drivers in the site layout and masterplan.

Figure 10: Flood Flow & Storage

3.2 Existing Site Analysis

3.2.1 Development Site Boundary

The HISC site is located at 2 Monash and 24 Wallarah Road, New Lambton. The site is currently used as Wallarah and Blackley Ovals with predominant sports being cricket and soccer. A small storage and amenities building is located on the southern boundary of the site.

Figure 11: Site Boundary

3.2.2 Site Features

The site is a generally flat, current use as sporting ovals, that slopes gently from the west to the east and the Turton Road frontage. And consists of managed turf grass. The site is bounded on the west by a raised spectator berm servicing Arthur Edden Oval. A stand of existing trees marks the Turton Road frontage.

Along the southern boundary the site is bounded by an existing stormwater drainage canal, Lambton Ker-rai Creek, which separates it from Monash Road. An existing pedestrian bridge across the canal is located adjacent to a small amenities block. In addition to the amenities block a number of storage containers have been located on this frontage. A small stand of trees abuts the amenities block.

Along the northern boundary the site is adjoined by Lambton High school, to the west, and some two storey residential units to the eastern portion of the northern boundary.

Due to the location of the stormwater canal along the southern frontage the only direct vehicular site access is off Turton Road.

Figure 12: Site Photos

3.2.3 Wind Analysis

Prevailing winds are from the West & Northwest for 25% of the year. Less than

10% from other directions.

Figure 13: Wind Roads

3.2.4 Orientation & Solar Access

The site is oriented east west, with Turton Road located to the east and Arthur Edden oval to the west. A key concern throughout the design process has been minimising the overshadowing impact cast by the building onto the pedestrian/cycleway and ensuring no overshadowing impact of the proposed development onto any adjoining residential areas that ran near the site, which is of interest and may be incorporated as a design narrative for the project.

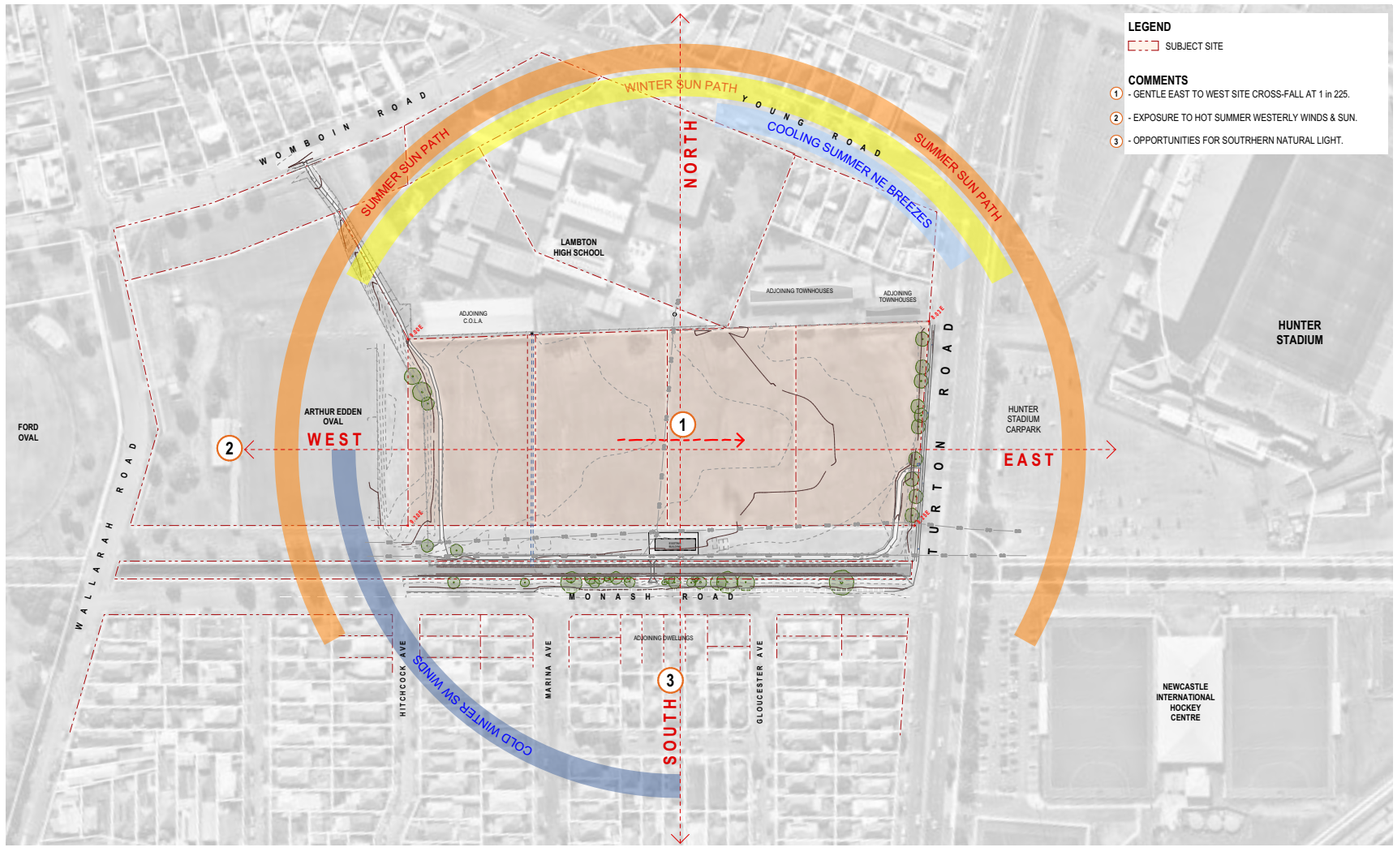


Figure 14: Site Analysis Diagram

3.2.5 Transport & Access Context

A Transport and Accessibility Impact Assessment is provided as part of this SSDA by SECA Solution. In addition to understanding the existing transport context, including the pedestrian, cyclist, public transport and vehicle networks, the design team has responded to the requirements of Newcastle City Council and Transport for NSW.

Public Transport

The site has excellent access to transport nodes, with Turton Road being one of the key roads through Newcastle. Broadmeadow Railway Station is approximately 1km to the east of the site or 15 min walk. Bus stops linking the site to all parts of Newcastle and Lake Macquarie are located on both sides of Turton Road. An existing signaled pedestrian crossing provides access to the southbound bus stop on Turton Road directly out the front of the site.

Pedestrian Connection

The site has strong connectivity to the existing pedestrian networks along Turton, Monash and Womboin Roads. In addition, the southern boundary is bounded by the pedestrian/ cycleway that links New Lambton to the city.

Broadmeadow Railway Station is approximately 1km to the east of the site or 15 min walk.

The project will provide a secure bike parking area with a single and double stack parking options for Staff with direct access to End of Trip shower and locker facilities which form part of the Change Room facilities.

Visitor bicycle hoop parking is to be provided externally within the landscaped forecourt area

Vehicular Access

The project site will provide a single access point of Turton Road at the north eastern edge of the site. Service vehicle access to serve Back of House functions will be provided along the same internal road network. A queuing lane has been designed as part of the internal road network to assist in traffic flows entering and exiting the site.

Staff vehicles will be provided access within the proposed carpark.

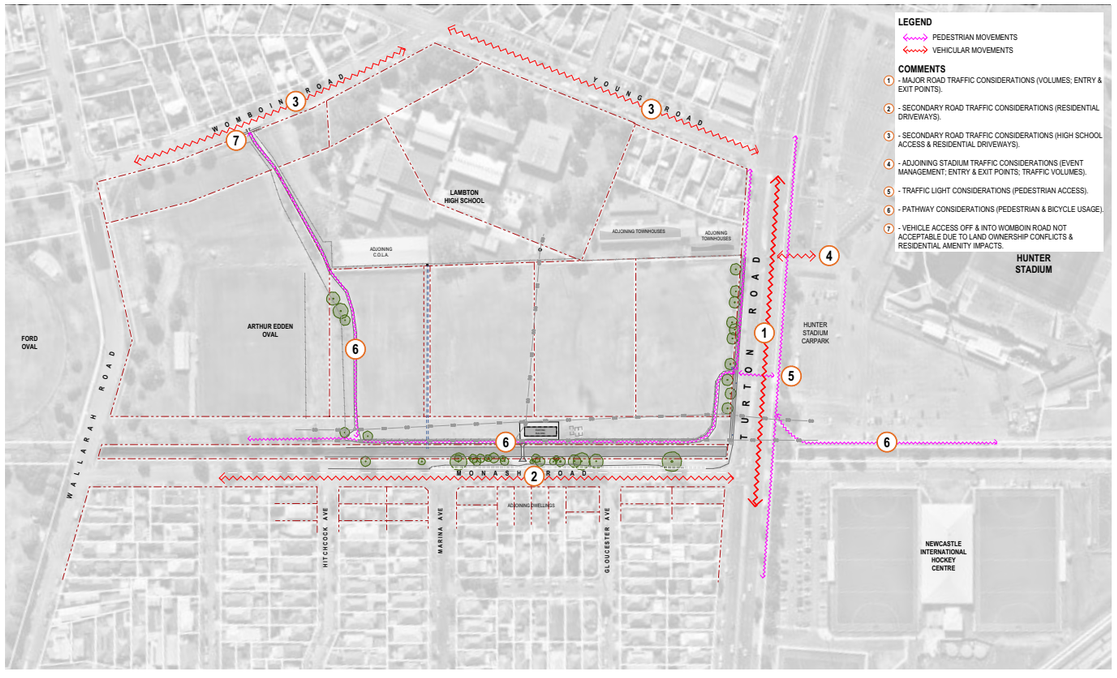


Figure 15: Site Analysis Plan - Traffic

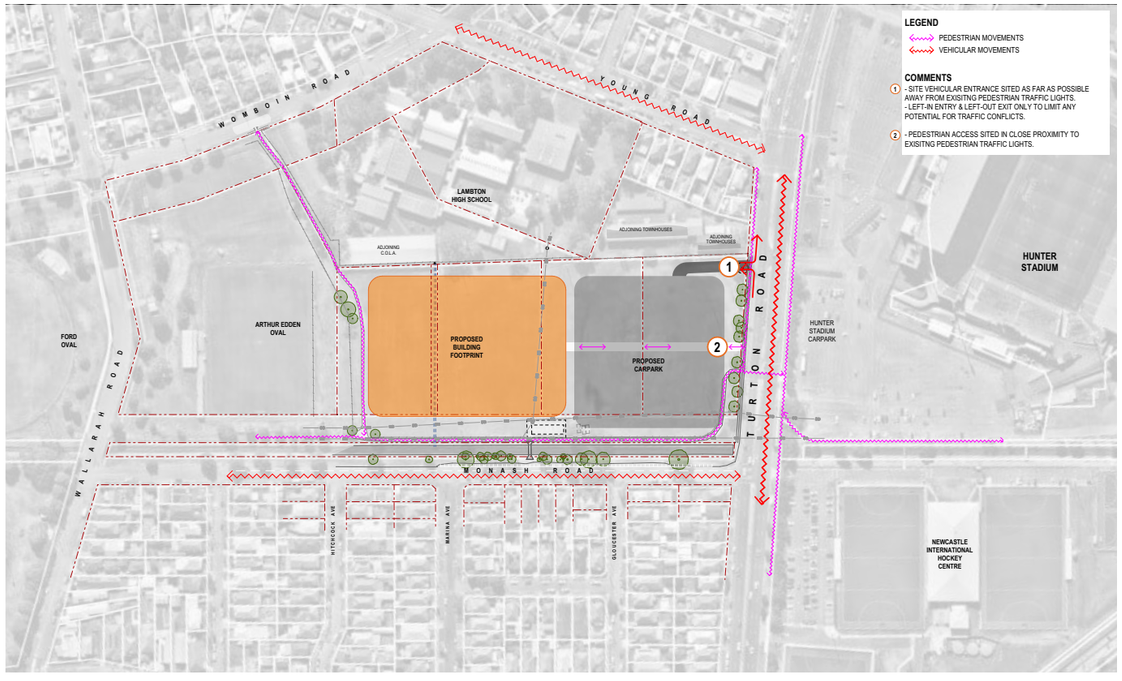
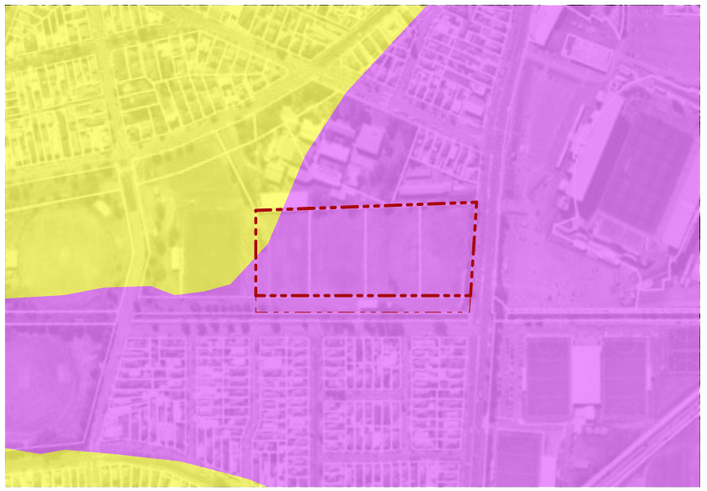


Figure 16: Site Analysis Plan - Traffic

4. Planning Context

4.1 Design Reference Documents

The HISC design has taken into consideration all relevant NSW Government policies to this important project, including key documents such as the Newcastle City Council Development Control Plan, Connecting with Country Framework, and relevant planning legislation and guidelines.



ACID SULPHATE SOILS

- CLASS 4
- CLASS 5

HEIGHT OF BUILIDNGS

- NOT APPLICABLE
- MAX. 8.5m

FLOOR SPACE RATIO

- NOT APPLICABLE
- F - MAX. 0.6 : 1
- I - MAX. 0.75 : 1

LAND ZONINGS

- RE1 - PUBLIC RECREATION
- R2 - LOW DENSITY RESIDENTIAL
- SP2 - INFRASTRUCTURE
- IN2 - LIGHT INDUSTRIAL

LOT SIZE

- AB - 400,000m^2 (40Ha) - *CONSOLIDATED SITE AREA = 37,725.1m^2
- F - 400m^2
- U - 1,000m^2

Figure 17: Newcastle LEP Maps 2012

4.2 Design Excellence Statement

The project design is based on principles of inclusion and openness for players, officials and spectators, and as a regional indoor sporting hub, the local Hunter communities, incorporating high quality internal playing courts, a large community stadium court, high performance court, engaging meeting and event spaces and high quality, publicly accessible outdoor space.

The site is flood affected at the Turton Street frontage of the site, requiring on site storage along the street front. However, design levels for the site have been manipulated to minimise the street front setback along the northern portion of the site furthest from the flood source, to activate Turton Road. The resulting L-shaped frontage to Turton Road, creates the external forecourt addressing Turton Road and the southern approach, as well the frontage to Monash Road, a secondary access to the site. There is a strong focus on the activation of these street frontages within the design, providing a welcoming and attractive facility. The building form will complement the existing sporting facilities within the precinct, through a public-facing interface of internal and external spaces - all designed to encourage community use.

The brief includes a number of indoor playing courts interlinked by broad movement spaces that begin at the front lobby and permeate across the street frontages, to add to the activation of the sporting precinct in Newcastle, as well as welcoming and inviting spaces to encourage the community in. The internal thoroughfares generate separation elements between the three distinct court pavilions, a tool implemented to reduce the overall scale of the facility, as well as allow for staging.

As well as the generous indoor spaces, the project also includes outdoor spaces particularly at the primary building entry, to heighten player, official and spectator experience and well-being through cultural engagement and biophilic connections. Design elements and materials have been introduced that respond to the rich continuing Indigenous stories and people, in particular the sense of place alongside an ancient tributary, now a concrete culvert and the source of flood impact. The main stadium court is afforded the prominent location at the street, allowing the higher spectator volume ease of access during events, through an adjacent dedicated court lobby and directly to the exterior forecourt and circulation. The resulting larger volume of the court places the largest building element closest to the street, providing a beacon to the community.

The design response will engage the community with a new publicly accessible urban space at the building's primary entry, positively facing into the city and major transport routes but also out to the culturally significant Whibayganba (Nobby's Head) and sea entry to Coquun (Hunter River) in the distance. The building response is intended to welcome the community in through a landscaped forecourt, from multiple entry points including Turton Road and Monash Street, and bordered by a visibly activated ground plane with numerous engagement spaces including the cafe - all aimed at encouraging use by both players, officials, spectators and the local community.

The building will utilise materials that are robust, with colours and fenestrations to reference the Hunter's natural geology, and respond to varying contextual scales, with warm natural hues alongside richly planted landscape areas creating a welcoming environment aligning itself with wellness design principles.

The building design implements energy minimisation strategies, through natural lighting (roof lights) and ventilation to playing courts (perimeter openings and rooftop ventilators), whilst placing smaller gathering spaces such the café and associated seating spaces along the building perimeter adjacent natural light and ventilation.

The project team will continue to consult with local indigenous community with the objective to embed Indigenous design collaborators that are engaging with the local Awabakal people, through a recording of their stories, cultural, and geographical narratives that will be used to inform the detail design response in building and landscape design materiality and references in artwork, wayfinding, vegetation and façade (entry). This is of high importance to the project with Newcastle Basketball's own established First Nations Working Party commitments to Indigenous cultural understanding, safety and inclusion.

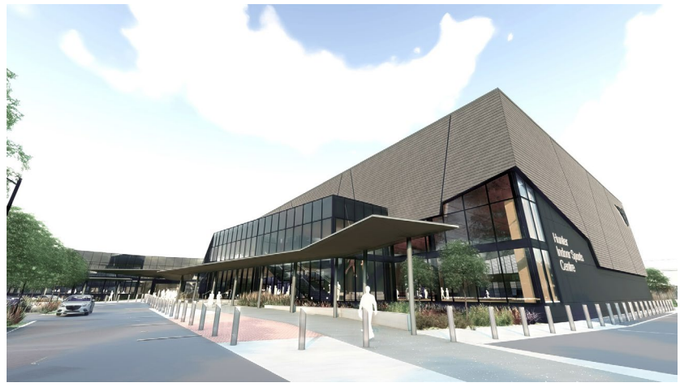
Of relevance to the design story in the concepts developed to date through consultation with community is the importance of the local land and adjacent tributary and local indigenous plant species, alongside a broader idea of the building and hard landscape being 'eroded' away to form an activated and semi-protected gathering space for the connection of local people. This connects with emerging stories about the importance of the salt-water edge, food gathering and general social places that formed along the waterways and inlets of the entire region.

Relationships with the local Community will be fostered through this project, to promote inclusiveness and engagement of local stories and culture to maximise welcoming spaces for Indigenous players, officials, spectators and locals alike.

Figure 18: 3D Render - Aerial View South East

Figure 19: 3D Render - Aerial View South West

Figure 20: 3D Render - Approach View



4.3 Good Design in Accordance with Better Placed Objectives

The development of the site is based on Urban Design principles that have been established with input from Newcastle City Council, and consultations with the State Design Review Panel (through the GANSW), Department of Planning. These principles aim to ensure that the development on the site works cohesively with the surrounding urban context whilst providing solutions for the unique set of constraints that the proposed site provides.

These principles have been developed with reference to the GANSW Better Placed Objectives to ensure an outstanding urban outcome.

Better Fit

Better fit contextual, local and of its place.

HISC has been designed to provide an exemplar sports development, that opens out to the community through an inviting landscape and public realm interface. It's urban form on this site has been carefully considered to provide open space to the key entry corner and approach from Turton Road, the proposed carpark and the key urban arrival point along the proposed pedestrian promenade linking the development to the public transport network, whilst providing clear views into the public lobby spaces with glimpses through to the court spaces and ancillary facilities beyond. The scale of the built form means that the proposed setback to Turton Road complements the sporting precinct, which includes McDonald Jones Stadium, The international Hockey Centre, The Harness Racing track, Knights Centre of Excellence, District Park Tennis Facility as well as numerous sporting ovals, and is appropriate being engaging whilst not overpowering

Better Performance

Better performance is sustainable, adaptable and durable.

The proposal has been designed with sustainability and environmental sensitivity in mind. Facades are thermally treated reducing the requirement for mechanical ventilation with appropriately placed windows or louvres allowing access to natural breezes and cooling effects. In addition, where external glazing is not suitable, rear community courts, overhead thermal translucent sheeting has been used to provide natural daylighting of court spaces. Public spaces have access to natural light as well as being located to interact with the external environment through breakout areas.

Mechanical ventilation has been minimised and only included for the public lobby spaces, Allied Health areas, Show Court and public amenities reducing the energy demand for the building. In addition, a roof top PV system is proposed to generate power for the facility further reducing the buildings reliance on existing infrastructure. Rainwater is also to be harvested and reused in the amenities for toilets and for irrigation of landscaped areas.

The landscape has been carefully designed using endemic species that are more drought tolerant. Carpark spaces have been graded to landscape areas using rain banks and allows for onsite stormwater to re-enter the natural ground systems.

Better for Community

Better for community is inclusive, connected and diverse.

The design has been specifically designed for inclusivity of all. Newcastle Basketball promotes equitable access for all. The design has been developed with feedback from the First Nations Working Group and LAC's, disabled sporting groups, and has been designed to best practice incorporating courts of sufficient size, clearance and perimeter edges allowing for a true multi-sport venue that caters for basketball, netball, volleyball, pickle ball and futsal.

Better for People

Better for people is safe, comfortable and liveable.

The proposal has been designed around the user experience. Clear circulation zones that have a relationship to the outside environment, with external breakout and meeting areas forming a key part of the overall design concept. Multi purposes rooms have been incorporated with direct viewing into the playing halls allowing a quite safe breakout zone for the user as well as culturally safe spaces for people of indigenous background.

Better Working

Better working is functional, efficient and fit for purpose.

The design has specifically designed to be efficient from a special point of view reducing the overall impact of the facility and allowing for remnant green spaces to be used by the general public and adjoining Lambton High School. Retractable seating has been used within the showcourt module allowing three courts to be converted into a 2,500 seat stadium without the increased floor area that dedicated seating would therefore require.

Better Value

Better value is creating and adding value.

The proposal has been designed with efficiency and budget in mind ensuring that the overall facility provides a valuable asset to the local Newcastle Community as well as the broader Hunter and New South Wales regional communities. The funding module has delivered a staged construction methodology with each stage being designed to provide the highest cost benefit to the end user. For instance, Stage 1 is concentrated on providing as many community court spaces as possible as this is where the greatest current demand is. The ultimate result at Stage 2 will provide for a facility that is the largest multi-sport indoor facility outside of Victoria.

Better look and feel

Better look and feel engaging, inviting and attractive.

The proposal provides for a state-of-the-art indoor sports facility that fits that is perfectly placed within the main sporting precinct of Newcastle. The proposal provides an open and engaging frontage to Turton Road, the existing Cycleway and Monash Road, and to Lambton High School with visual transparency providing connection between the internal user and members of the general public. Communal gathering areas internally and externally provide places to meet and come together.

4.4 Urban Design Framework

4.4.1 Urban Design Framework

Development of the site is prescribed locally through the City of Newcastle DCP 2023 and LEP 2012. It is also affected by Urban Planning Documents including the City of Newcastle Local Strategic Planning Statement.

Through the review of the LEP, as the site is not identified as a key site, and zoned public recreation. As the site does not have any prescriptive controls a merit based design approach has been adopted. In particular the design considers the surrounding scale through the development of pavilions with considered fenestration drawing from adjacent buildings, siting the pavilions to eliminate any overshadowing of surrounding public spaces or neighbours, and mitigate visual and acoustic privacy to neighbouring properties.

With respect to the strategic planning context, the site is located on the fringe of the Broadmeadow Catalyst Area, on land adjacent the Hunter Sports and Entertainment Precinct. According to the **City of Newcastle Local Strategic Planning Statement (LSPS)**, the renewal of the Broadmeadow Catalyst Area is *"centred around the future development of a world class sport and entertainment precinct covering the areas of the existing Newcastle Entertainment Centre and Showground, McDonald Jones Stadium and a variety of other sports facilities located in this area".* The addition of a new regional indoor sports centre is highly complementary of the renewal of this Catalyst Area.

The Broadmeadow area has also been identified in the LSPS as a Strategic Centre, servicing the Hunter region with higher order administration, education, health services, cultural and recreational facilities with high density commercial and residential uses. The addition of a new regional indoor sports centre is highly complementary of the Strategic Centre noting the reference to "higher order recreation facilities".

The location of the indoor sports centre supports the City of Newcastle 2040 Vision, for a liveable, sustainable, inclusive global city. Under Item 1. Liveable, the siting of the project supports item 1.3 Safe, active and linked movement across the city: Connected cycleways and pedestrian networks, Road networks, Managed parking and, Effective public transport. The project site is bordered along the southern boundary by an existing pedestrian and cycle way linking the western edge of Newcastle with the City Centre. The eastern boundary is bordered by Turton Road, an arterial road linking the southern and northern edges of Newcastle.

The design of the project has been afforded on site managed car parking, balanced in number with traffic movements and adjacent parking amenity within the Sports Precinct. Public transport currently services the Sports Precinct, within which the project site resides.

The project supports the BANL's Project Vision's Commitments under Social Justice Principles, in particular Equity, Access and Participation. The project provides for a diverse community including people with disability, enable people to have fair access to services, resources and opportunities to improve their quality of life, through the provision of all-weather indoor sporting and recreation space. Finally, the project enables people to fully participate in community life.

Figure 21: Broadmeadow Catalyst Area

4.4.2 2023 Newcastle Development Control Plan

The design response has been guided by the principles within the Newcastle Development Control Plan, with the design response and process including:

- The design team undertook an urban design / masterplan process to understand the holistic considerations of the site in terms of building massing, vehicular and pedestrian access, solar control and landscape opportunity. This was reviewed and approved by the Project Control Group, and largely supported by the SDRP.
- The site does not include buildings that unnecessarily overshadow the public open space, with a development proposal that is approximately three stories tall.
- Flooding; balanced strategies to economically, socially and environmentally manage risk to life and property have been applied, setting aside the landscaped car parking area as an appropriate area to convey and/or store flood waters. The site planning and associated flood modelling has ensured development has been considered both individually and as an instance of cumulative development trends, will not cause unreasonable adverse flooding impacts in other locations.
- The development has a provision of parking for vehicles on site, accessed by Turton Road rear laneway as to not impact the pedestrian access to the public open space.
- Parking is provided on site and includes deep soil planting areas identified in the landscape architect response. Enable and encourage measures to reduce motor vehicle dependency and increase the use of walking, cycling and public transport. Suitable and equitable parking and service provision are adequate relative to the demand. The number of car parking spaces is managed to increase land use efficiency. Promote vehicular parking space management to increase land use efficiency. The design of parking, access and servicing areas is in accordance with best practice standards and ensures the safety, efficiency and usability of roads and access ways. Adequate and safe vehicle access to the site via Turton Road has been afforded without compromising pedestrian access, streetscape qualities and has avoided the negative impacts of large areas of car parking on the streetscape, through the provision of extensive landscaped deep soil planting along affected street boundaries.
- The electric vehicle parking spots have been provided including future connections provisions.

The design attributes described above are depicted in our design response drawings and renders as provided within this report.

5. Design Strategies & Process

5.1 Building Form Massing Options

During the Design Concept phase and upon careful review of the sites unique constraints an overall masterplan option was endorsed that met the brief requirements from a function and staging point of view, but also provided for the design solution for the main site constraint of the flooding from Ker-rai Creek. Initially during early Feasibility Stages three options were investigated which investigated location and siting of the building from an operational point of view as well as from a broader city context and how it relates to the existing streetscape and built environment.

Detailed site investigations informed the Design Team that in order to provide the required flood storage and allow for the flood flow that the carpark for the proposal would need to be in the eastern portion of the site. This also provided the only practical solution to the traffic access, and that Turton Road is the only direct road frontage for the site, and is proposed in the north east corner of the site in the form of a left in left out turning lane. This is a combined access for service vehicles and public vehicles.

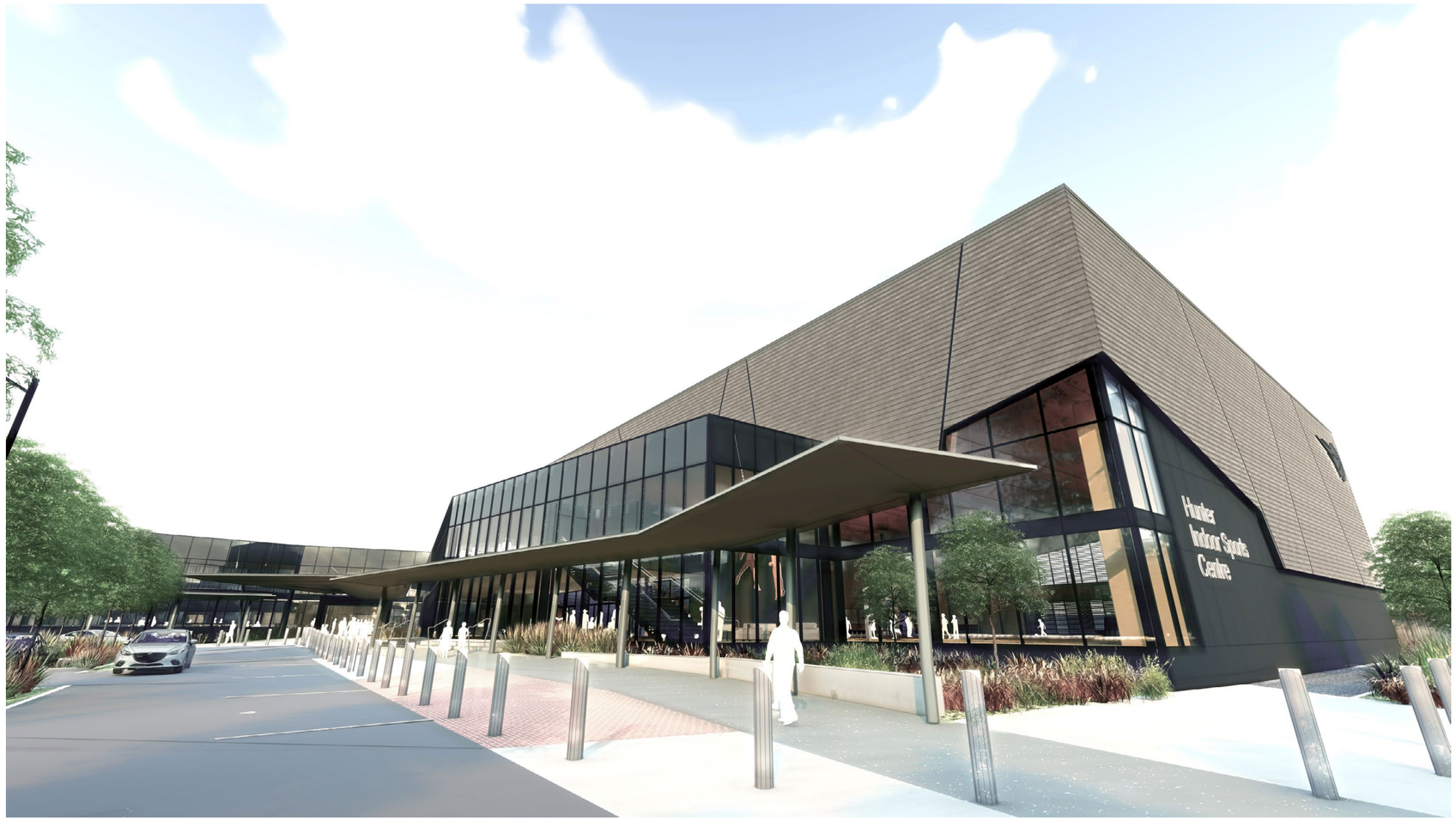
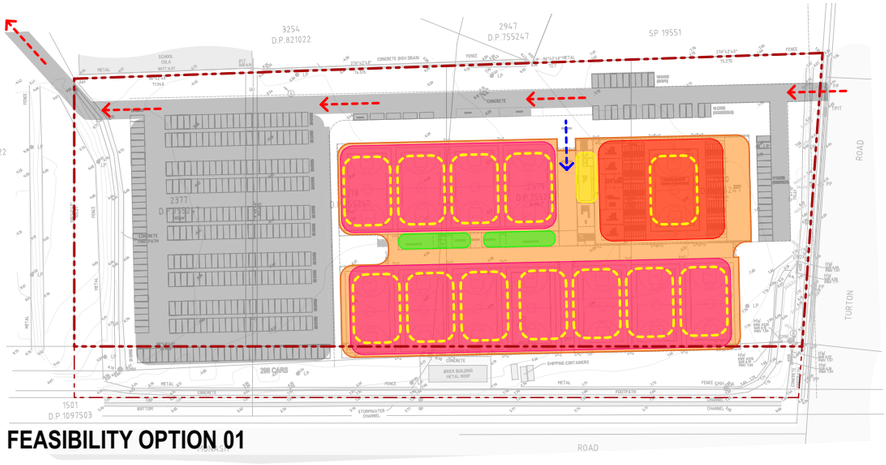
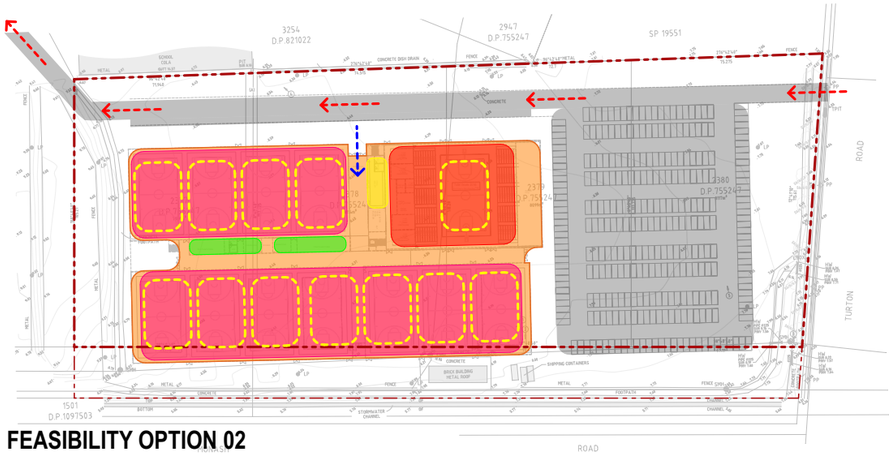


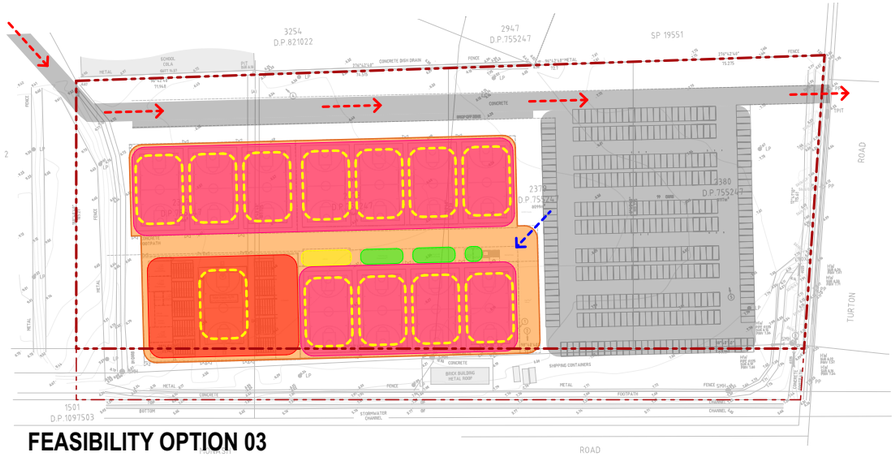
Figure 22: 3D Render - Approach View



FEASIBILITY OPTION 01



FEASIBILITY OPTION 02



FEASIBILITY OPTION 03

Figure 23: Feasibility Diagram

COMMENTS

*EJE WERE APPROACHED INITIALLY, TO UNDERTAKE A HIGH-LEVEL FEASIBILITY ASSSESSMENT, TO GENERALLY ASCERTAIN IF THE POTENTIAL OFFFERED SITE, WAS OF SUFFICIENT SIZE TO ACCOMODATE THE BRIEF.

① - **OPTION 01** -
- INITIAL FEASIBILITY REVIEW (PRIOR TO FLOODING ADVICE).
  - CARPARK AT REAR OF SITE.
  - ONE-WAY VEHICULAR TRAFFIC FLOW (EAST TO WEST).
  - BUILDING FOOTPRINT AT FRONT OF SITE TO PROVIDE STREET ACTIVATION.
  - MAIN BUILDING ENTRY FROM NORTHERN SIDE ELEVATION.

- **ISSUES** -
  - EXISTING FLOOD STORAGE NOT MAINTAINED.
  - TRAFFIC VOLUMES & LIGHT GLARE EXITING ONTO WOMBOIN ROAD RESIDENTIAL AREA.
  - PROPERTY OWNERSHIP AVAILABILITY FOR THROUGH-SITE VEHICULAR ACCESS.
  - MAIN ENTRY POINT NOT PROMINANT & REMOTE FROM CARPARK.
  - UNDESIRABLE LINKAGE OPTIONS TO ADJOINING SCHOOL.
  - LACK OF ABILITY FOR OPEN SPACE.

② - **OPTION 02** -
- SECONDARY FEASIBILITY REVIEW (AFTER PRELIMINARY FLOODING ADVICE).
  - CARPARK AT FRONT OF SITE.
  - ONE-WAY VEHICULAR TRAFFIC FLOW (EAST TO WEST).
  - BUILDING FOOTPRINT AT REAR OF SITE.
  - SHOW-COURT & RETAIL AT THE FRONT, TO PROVIDE FACADE ACTIVATION.
  - MAIN BUILDING ENTRY FROM NORTHERN SIDE ELEVATION.

- **ISSUES** -
  - TRAFFIC & PROPERTY OWNERSHIP AS NOTED ABOVE.
  - MAIN ENTRY POINT NOT PROMINANT.
  - SCHOOL LINKAGE & OPEN SPACE AS NOTED ABOVE.

③ - **OPTION 03** -
- SECONDARY FEASIBILITY REVIEW (AFTER PRELIMINARY FLOODING ADVICE).
  - CARPARK AT FRONT OF SITE.
  - ONE-WAY VEHICULAR TRAFFIC FLOW (**WEST TO EAST**, TO REDUCE IMPACTS TO RESIDENTS).
  - BUILDING FOOTPRINT AT REAR OF SITE.
  - SHOW-COURT AT REAR TO ASSIST WITH STAGING.
  - RETAIL AT THE FRONT TO PROVIDING FACADE ACTIVATION.
  - MAIN BUILDING ENTRY FROM EASTERN FRONT ELEVATION.

- **ISSUES** -
  - TRAFFIC & PROPERTY OWNERSHIP AS NOTED ABOVE.
  - PEDESTRIAN FLOWS THORUGHT BUILDING FOOTPRINT TO REAR SHOW-COURT.
  - SCHOOL LINKAGE & OPEN SPACE AS NOTED ABOVE.

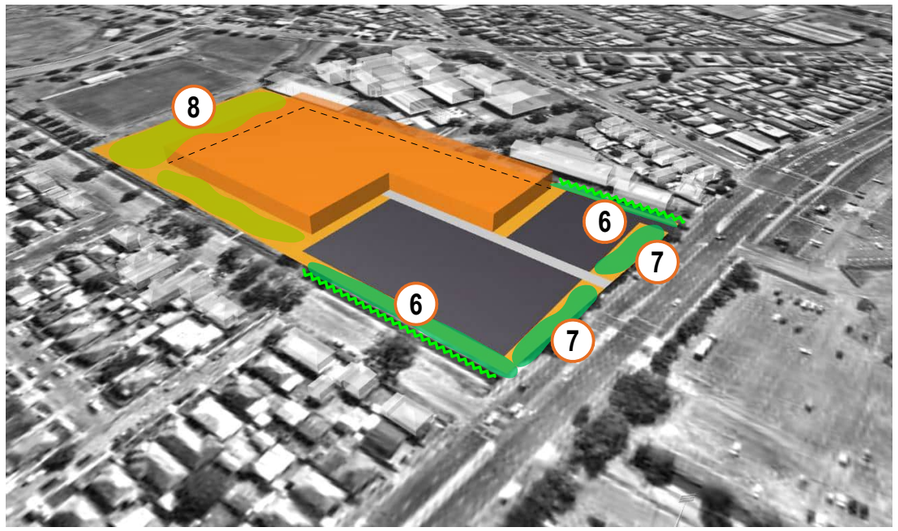
01 - SETBACKS CONSIDERATIONS

02 - FLOODING CONSIDERATIONS

COMMENTS

1. - SETBACKS OF 6m TO NORTHERN, EASTERN, & SOUTHERN BOUNDARIES, & 24m TO THE WESTERN BOUNDARY TO MAINTAIN EXISITNG PUBLIC PATHWAY.
   - *NOMINAL 10m MASSING HEIGHT PROPOSED FOR BASKETBALL COURT VOLUMES & 2-STOREY FACILITIES.
2. - MASSING CARVED-OUT TO SOUTHERN & EASTERN PORTIONS TO ALLOW FOR EXISITNG FLOOD STORAGE VOLUME CONTINUATION.
3. - CARPARK SITED TO MAINTAIN FLOOD STORAGE VOLUMES.
4. - VEHICULAR ENTRY SITED AWAY FROM PEDESTRAIN TRAFIC LIGHTS, WITH LEFT-IN ENTRY & LEFT-OUT EXIT TO MINIMISE TRAFFIC IMPACTS.
5. - PEDESTRIAN ACCESS SPINE, SITED ADJACENT EXISITNG PEDESTRIAN TRAFFIC LIGHTS.
6. - LANDSCAPING SCREENS TO ADJOINING RESIDENTIAL, TO MAINTAIN PRIVACY & MINIMISE LIGHTING & ACOUSTIC IMPACTS.
7. - MAINTAIN EXISTING LANDSCAPE BUFFER TO TURTON RD TO SCREEN PROPOSED CARPARK.
8. - WESTERN FACADE SETBACK TO CREATE OPEN SPACE FOR ADJOINING HIGH SCHOOL.

03 - TRAFFIC & ACCESS CONSIDERATIONS



04 - AMENITY CONSIDERATIONS

Figure 24: Conceptual Massing

The derived massing solution was then reviewed from a program point of view which took into account the brief requirements of Newcastle Basketball and a multi sports facility. 5 options were reviewed which looked at the location of the primary community courts, the Show Court, player and spectator amenities, arrival points and the key brief driver of Staging. Of the five options, Option 1 was the preferred option and was endorsed by the client PCG. The key design opportunities of Option 1 are:

- Stageability
- Hierarchy of Spaces
- Visual Connections and Activation of the public Realm.

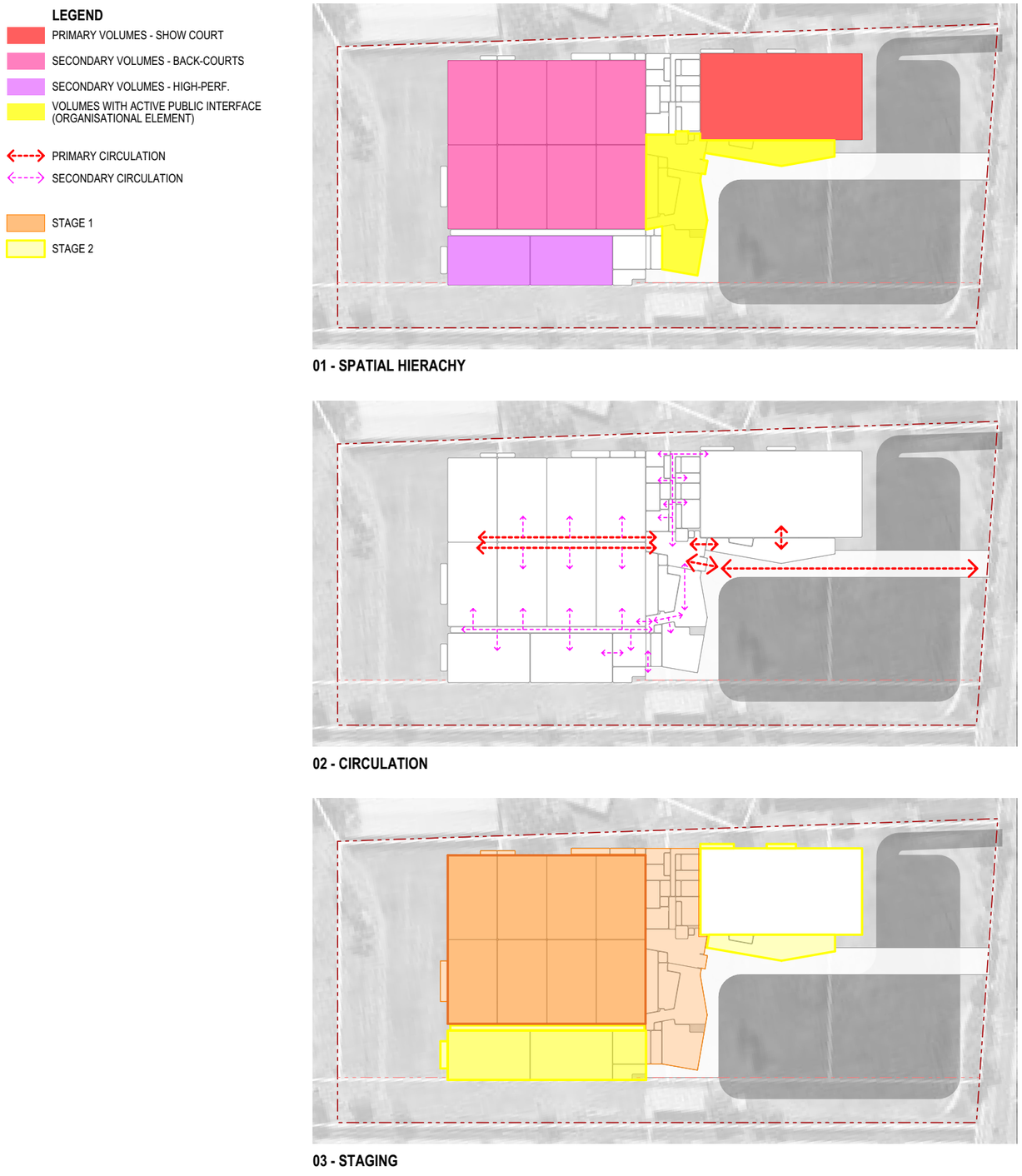
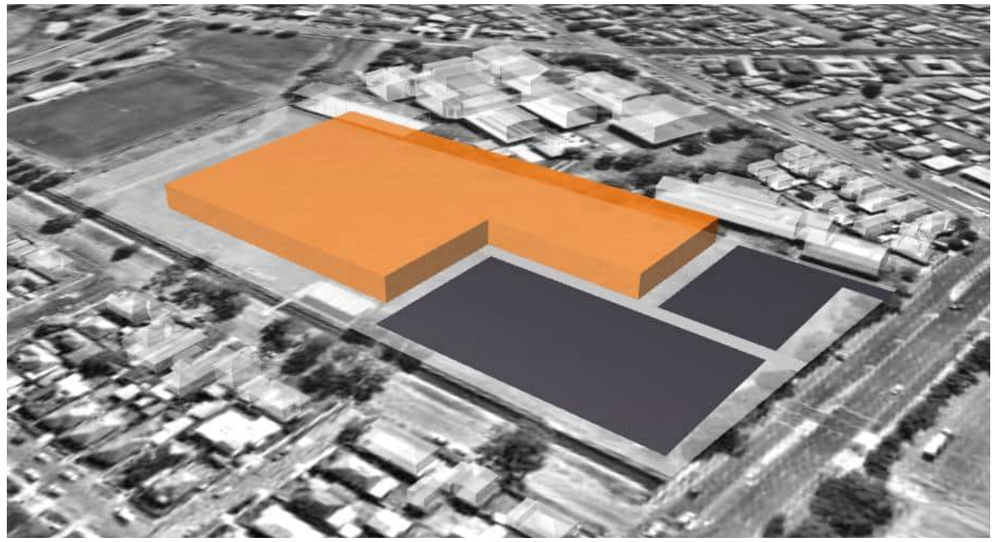
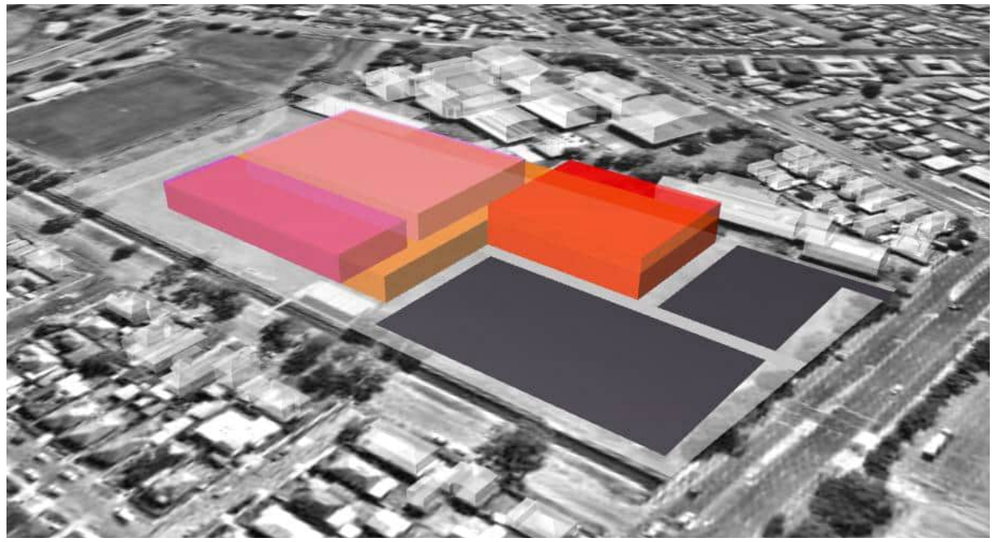


Figure 25: Spatial Hierarchy & Movement

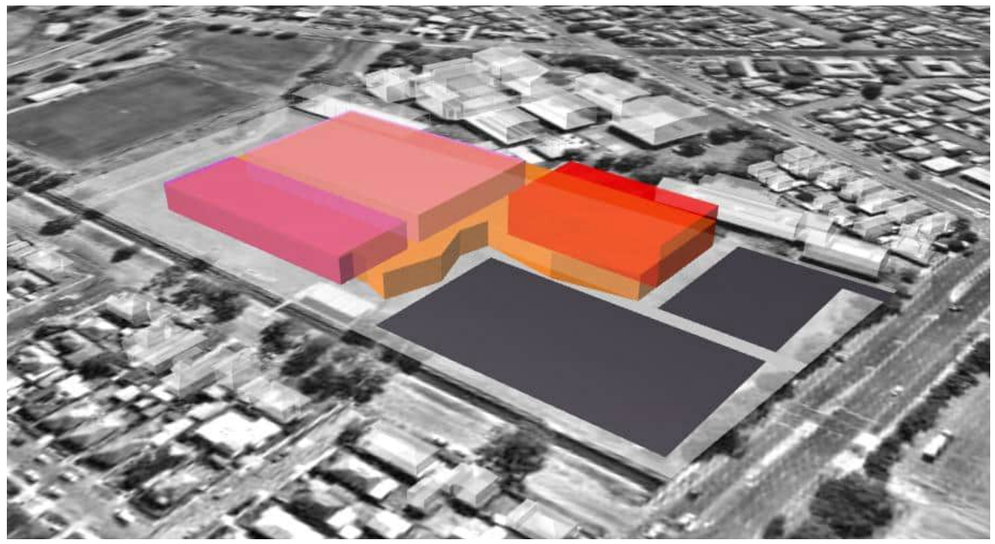
Option 1 has been developed into the final submission form where the planning, special hierarchy and massing were all reviewed and developed. Furthermore, the forms and building articulation were reviewed and a set of design objectives were developed.



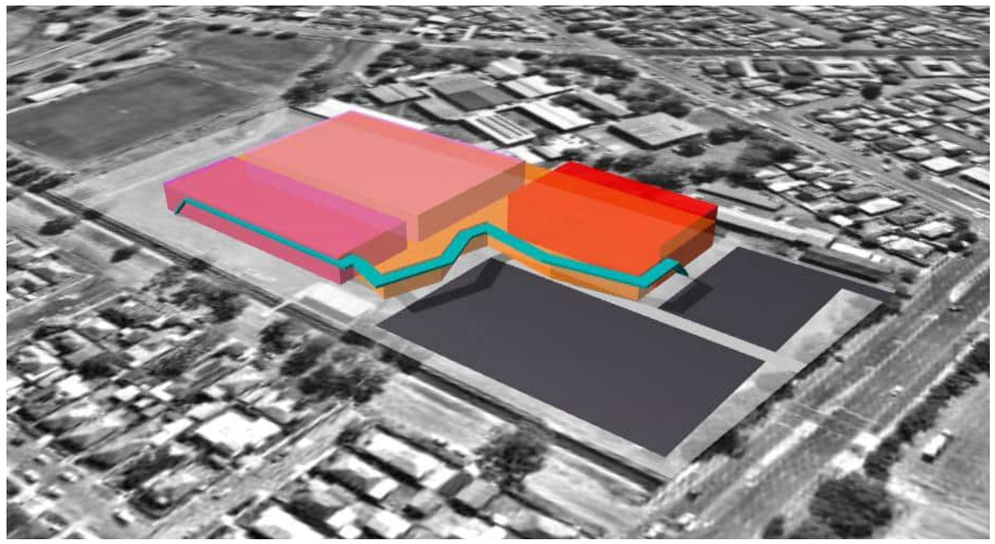
01 - BASE FOOTPRINT FORM



02 - SPATIAL ARTICULATION



03 - FACADE ARTICULATION



04 - FACADE REFINEMENT

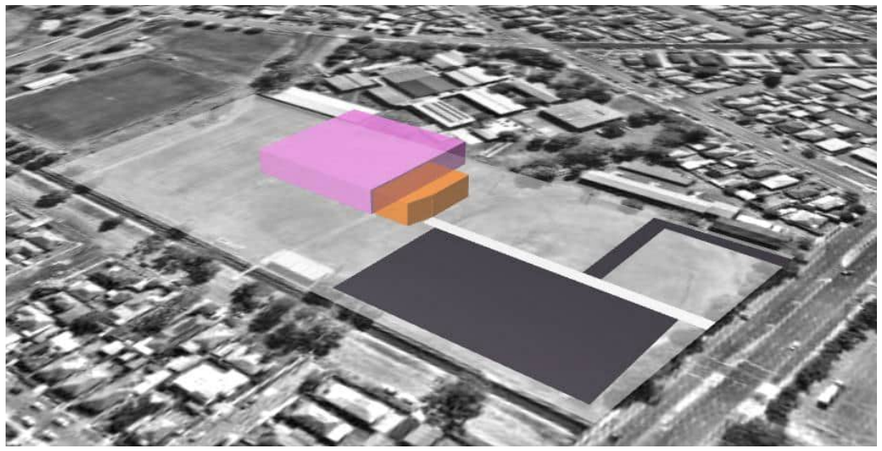
Figure 26: Massing Development

In addition, a key brief requirement for the facility was that it needed to be constructed in Stages due to the current and future funding availability. Stage 1a is to be delivered under the current available Stage Funding, Stage 1b is subject to a current funding application with the Federal Government, and Stage 2 is dependent on subsequent funding applications with State and Federal Governments.

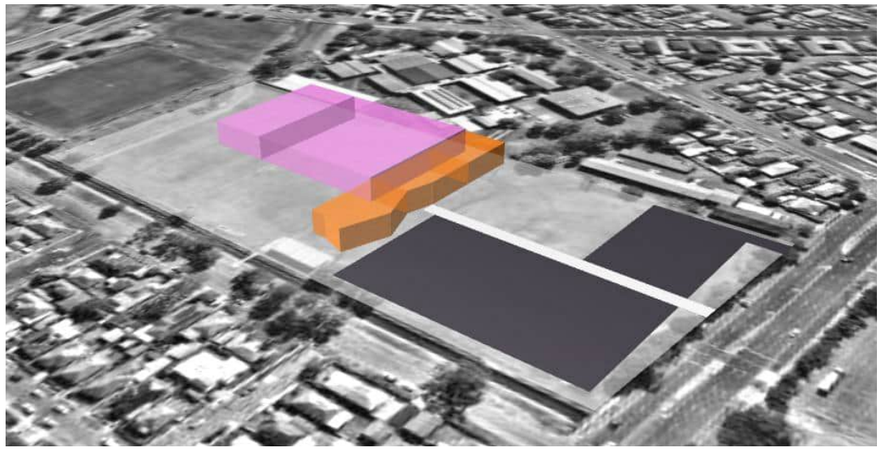
Refer over for detailed staging plans.

The ability to Stage the development was fundamental to the design. Stage 1a sets the architectural theme with each subsequent stage dovetailing in neatly to provide a cohesive overall built form. Stage 1a and 1b is fundamentally about getting maximum availability of playing spaces with future funding directed towards the Show Court and High Performance wing.

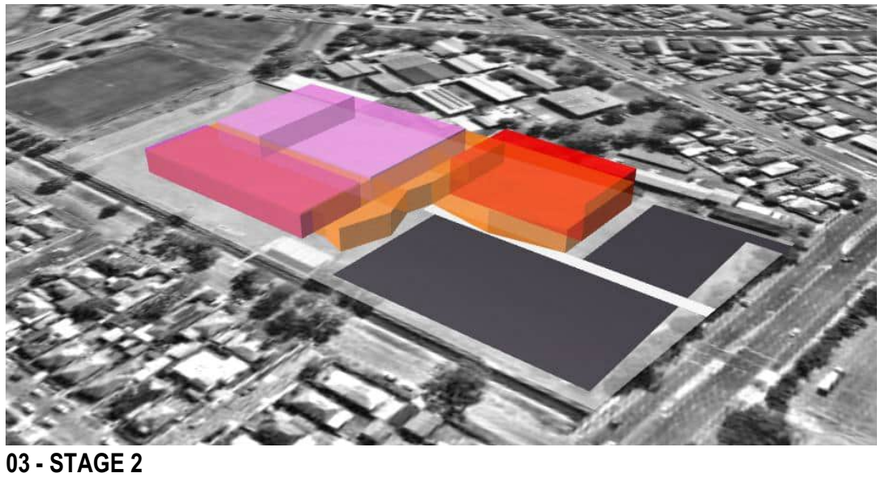
Each Stage is outlined in the subsequent pages.



01 - STAGE 1A



02 - STAGE 1B



03 - STAGE 2

Figure 27: Staging

Stage 1A

Ground Floor

- 6 Courts
- 200 Fixed Spectator Seating to Court 01
- Small Foyer with Court Control
- Public and Player Amenities
- 110 Car-parking Spaces
- Main Entry/Exit from Turton Road
- Carpark Drop Off zone
- Pedestrian Connection to existing pedestrian bridge link to Monash Road.
- Landscaping to Carpark
- 2 x Coach parking spaces

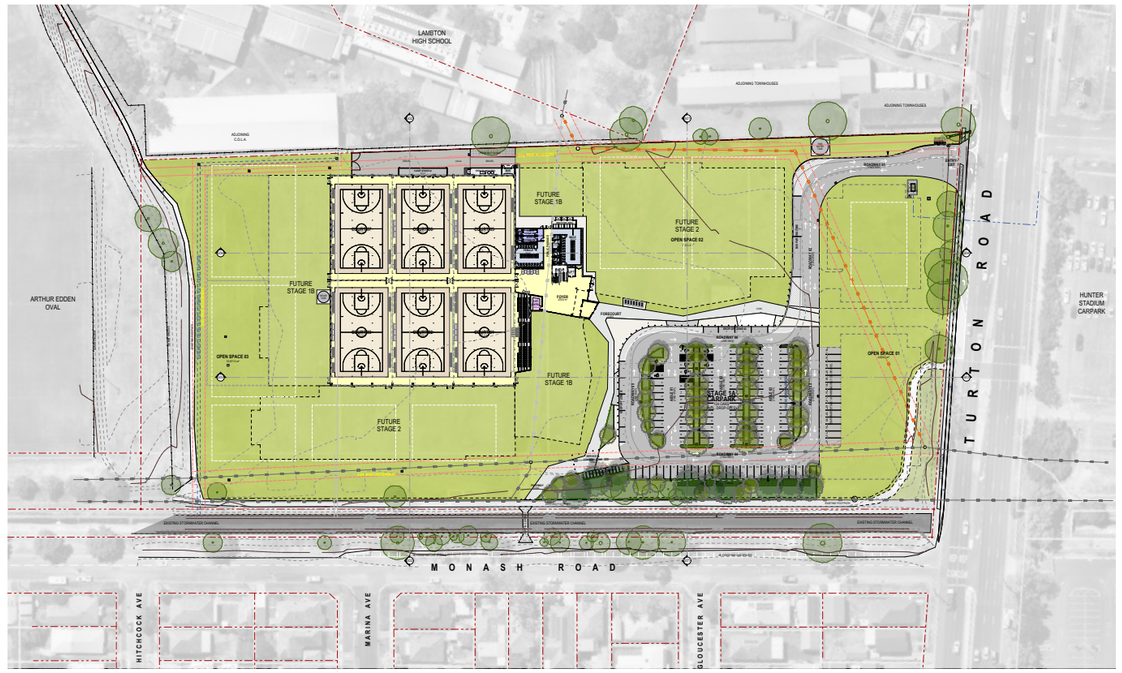
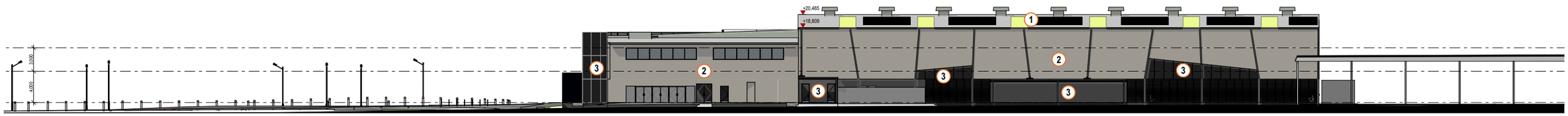
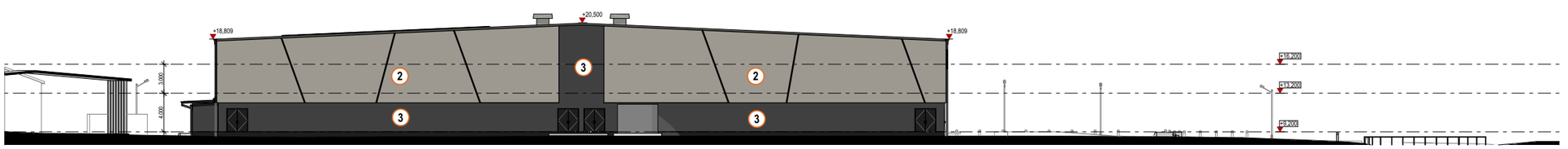


Figure 28: Stage 1A - Ground Floor Plan

Figure 29: Stage 1A - View

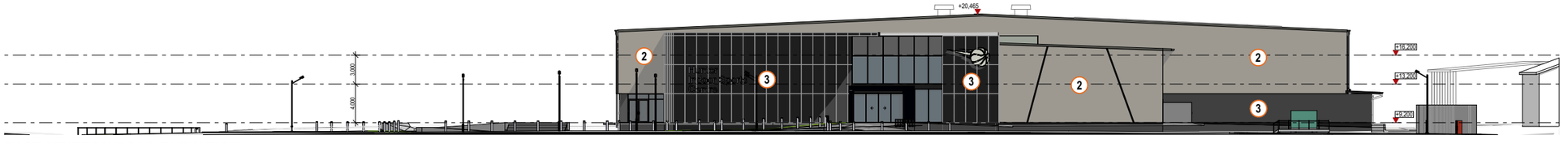


NORTH ELEVATION



WEST ELEVATION

SOUTH / MONASH ROAD ELEVATION



EAST / TURTON ROAD ELEVATION

Figure 30: Stage 1A - Elevations

Stage 1B

Ground Floor

- Additional 2 Community Courts (04 & 08)
- Additional Player Amenities
- Cafe and Dining Area including Alfresco
- Allied Health Hub

First Floor

- Administration Area
- Public and Staff Amenities
- Multi- Purpose Rooms overlooking Court 01
- Gym and Movement Studio

- Additional 75 Carparking spaces
- Associated Landscaping
- Pedestrian Promenade connection to Turton Road.

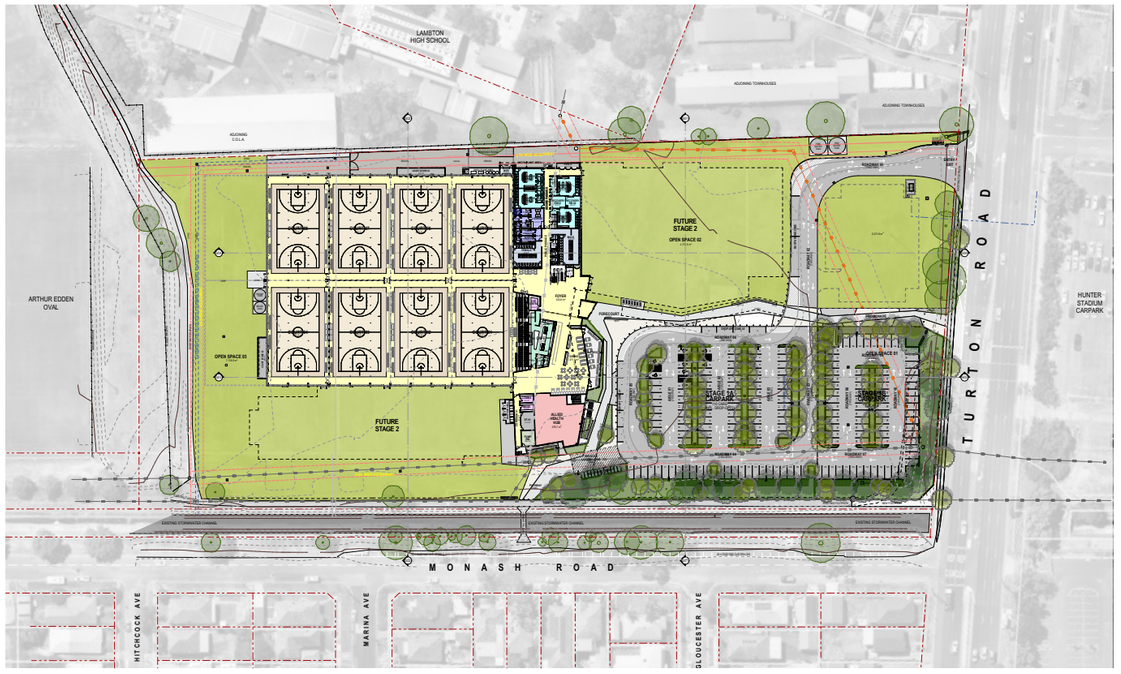
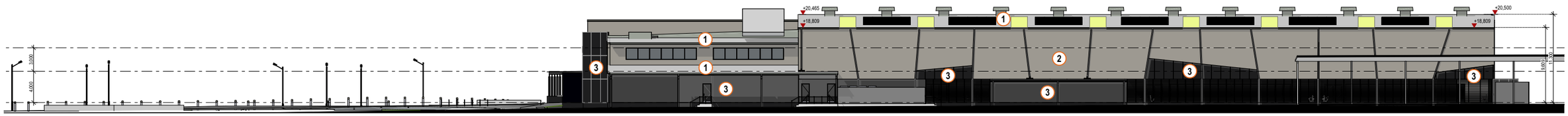
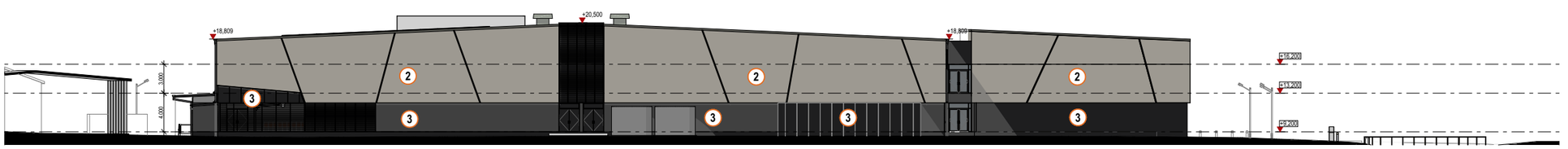


Figure 31: Stage 1B - Ground Floor Plan

Figure 32: Stage 1B - View

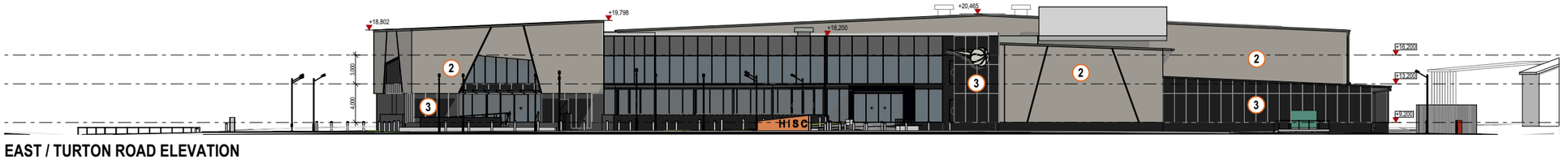


NORTH ELEVATION



WEST ELEVATION

SOUTH / MONASH ROAD ELEVATION



EAST / TURTON ROAD ELEVATION

Figure 33: Stage 1B - Elevations

Stage 2

Ground Floor

- Additional Court 09 and Training and Performance Hub
- Corridor 02 providing link between existing courst 01-09 and Court 09 and Training Hub
- Player and Public Amenities with Recovery Rooms
- Show Court Module consisting of 3 courts and retractable seating for 2500.
- Show Court Lobby

First Floor

- High Performance/ Elite Teams Administration
- Athlete/ Staff Lounge
- Function Room/ Corporate Lounge
- Additional 55 Car-parking spaces
- Pedestrian Walkway Roof over forecourt and promenade
- Final Landscaping and External Gathering and Recreation Spaces.

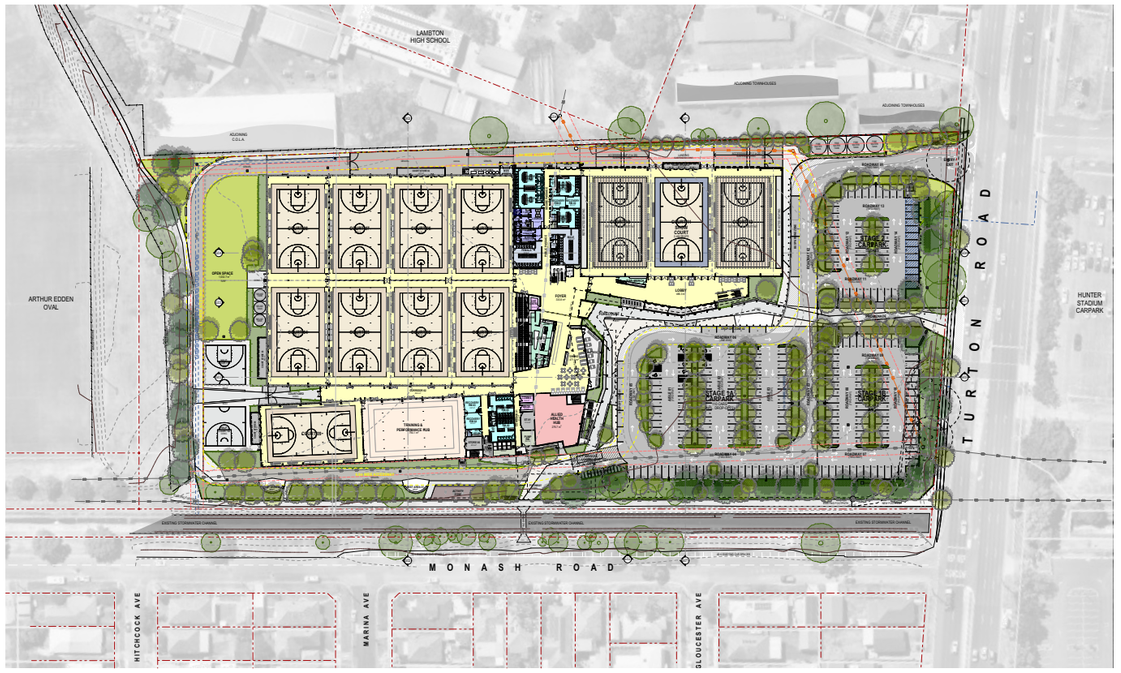
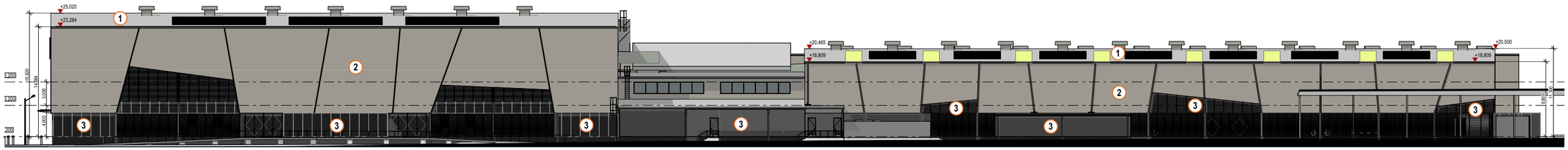
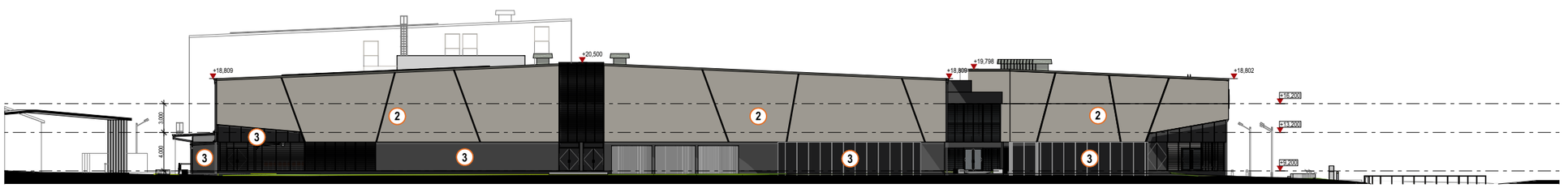


Figure 34: Stage 2 - Ground Floor Plan

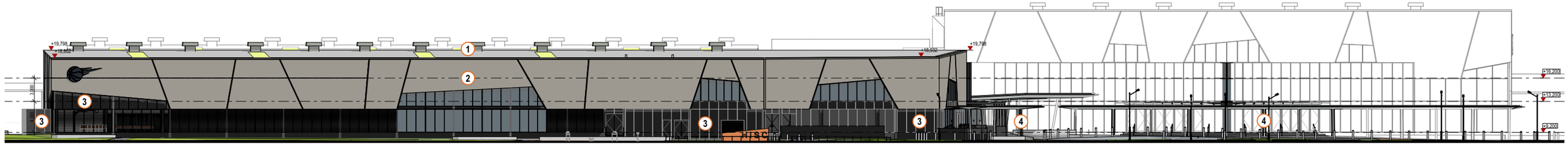
Figure 35: Stage 2 - View



NORTH ELEVATION



WEST ELEVATION



SOUTH / MONASH ROAD ELEVATION

EAST / TURTON ROAD ELEVATION

Figure 36: Stage 2 - Elevations

5.4 Cultural & Heritage Engagement

Connection Strategy

The design team has undertaken cultural values training with representatives of the Local Aboriginal Land Council (LALC), on a local site of cultural significance (Rocky Knob, in Fletcher), on the 18th January 2024.

From this training, key items of cultural significance were identified, which will be considered in the design approach strategy, such as:-

- How the low-land areas & flats ("awaba"), similar to our subject site, were areas where hunting & gathering occurred;
- As a result, they were areas of movement, from the high-level ridge- lines, down to the flats, & along the watercourses;
- Consequently, these areas were areas of interaction between different mobs;
- These areas were therefore places to meet, gather, perform story-telling & knowledge-sharing.

From the above training, the design team has aimed to incorporate these items of movement & gathering into the current design objectives.

A workshop, facilitated by Artefact, with Newcastle Basketballs First Nations Working Group (NBFNWG), the Design Team including members from EJE and Terras Landscape Architects and APP was held on the 11 April 2024.

As the design progresses & evolves, further interaction with the LALC, & other First Nations Groups will be ongoing.

These interactions & consultations, are planned to be an ongoing process, up until the building project is completed, & as the facility operates. The initial training has provided valuable input regarding the wider opportunities, & further interaction & input will be implemented throughout the design & documentation phases.

The planned future involvement, is expected to include the finer details of how the facility can best connect with country, through material selections, landscape design, the incorporation of meeting & gathering spaces, & the inclusion of First Nations groups in the functions of the facility.

Figure 37: Workshop with Newcastle Basketballs First Nations Working Group

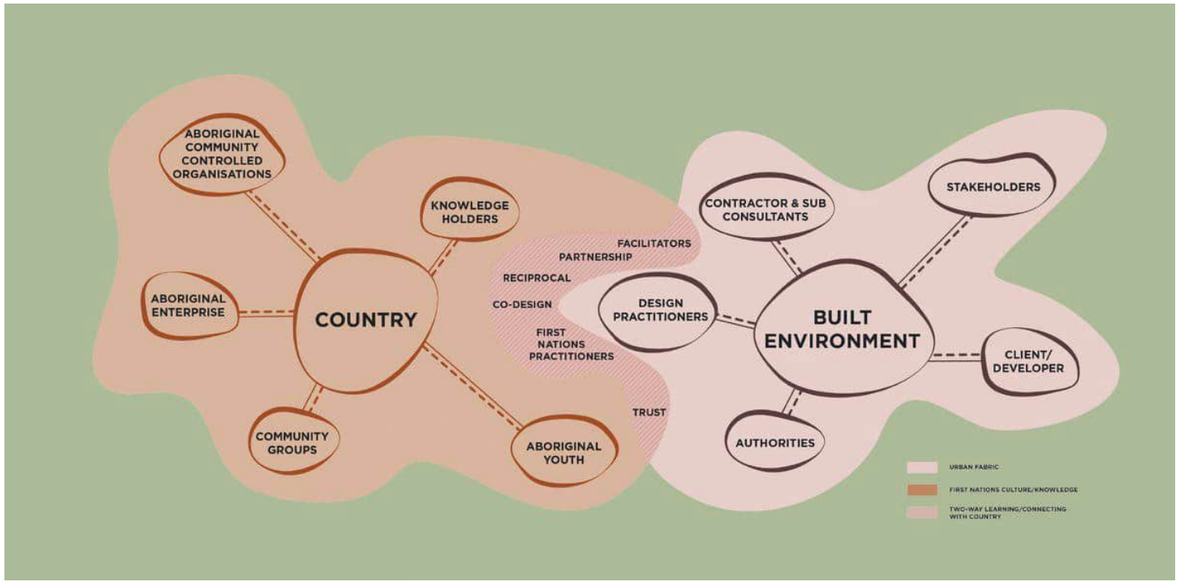
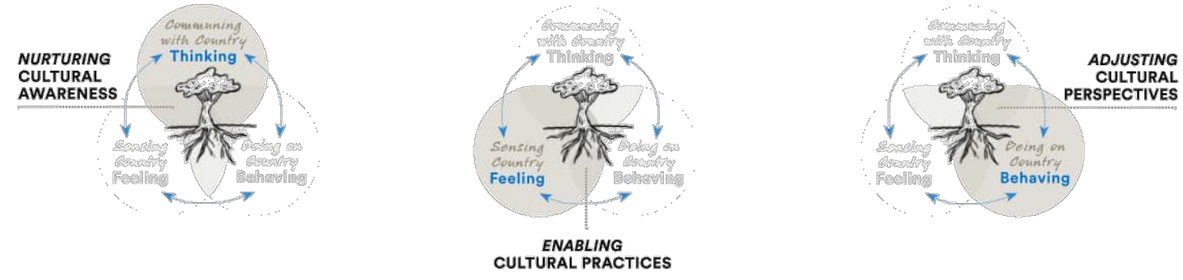
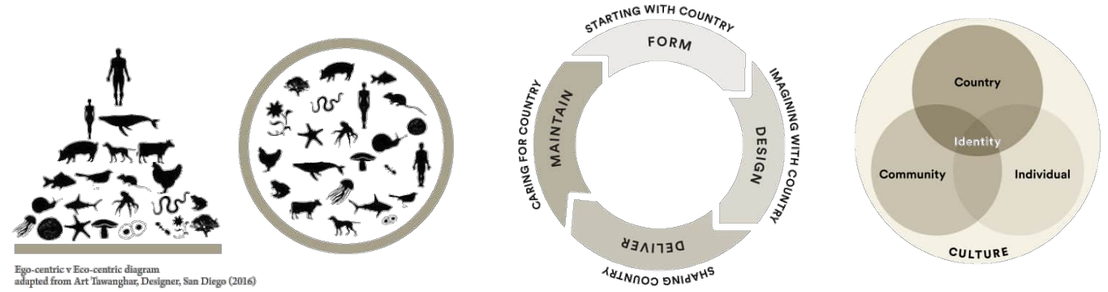


*IMAGE SOURCE - "ADVOCATING COUNTRY: VOICE & COLLABORATION IN URBAN DEVELOPMENT" - ARCHITECTURE AU.



*IMAGES SOURCE - GANSW "CONNECTING WITH COUNTRY" DISCUSSION PAPERS 2020.



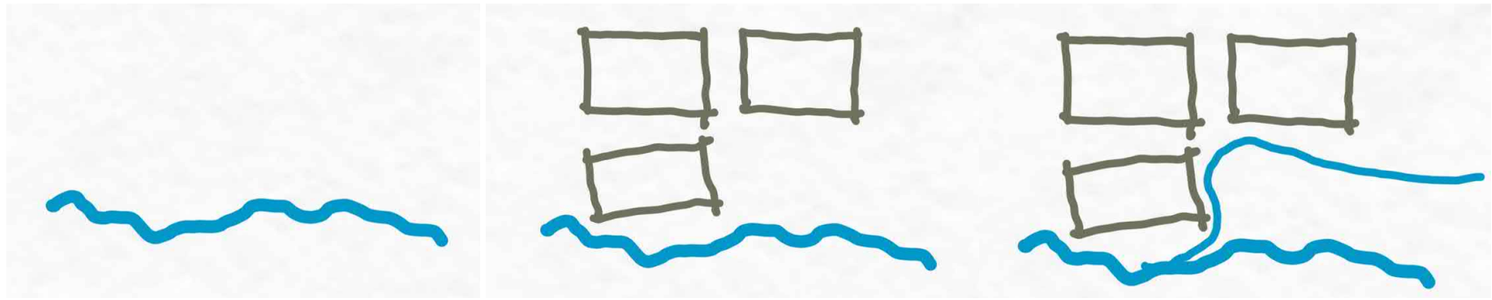
*IMAGES SOURCE - GANSW "DESIGNING WITH COUNTRY" DISCUSSION PAPERS 2020.

Figure 38: "Advocating Country: Voice & Collaboration In Urban Development"

Conceptual Thinking

The conceptual thinking for the proposal developed from initial discussions held between members of the Design Team and LALC members on the Cultural training day and site walk. This allowed the masterplan functional brief requirements to be developed by using the concepts of the land in its original un-developed state. Lambton Ker-rai Creek running along the sites southern boundary in its original form would have wound its way through the low lying landscape overlooked by higher ground and the escarpments of Warrewelong (Mount Sugarloaf) and Whibayganba (Nobby's Headland) beyond.

In addition Lambton Ker-Rai Creek is a tributary to Styx creek creating the opportunity for development of the conceptual thinking for the built form of the forecourt and lobby areas.



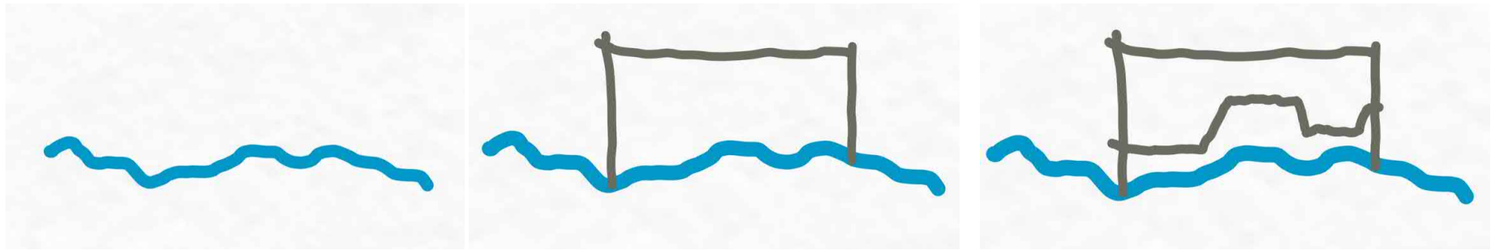
The Water | The Rocks | The Tributary

Conceptual Thinking

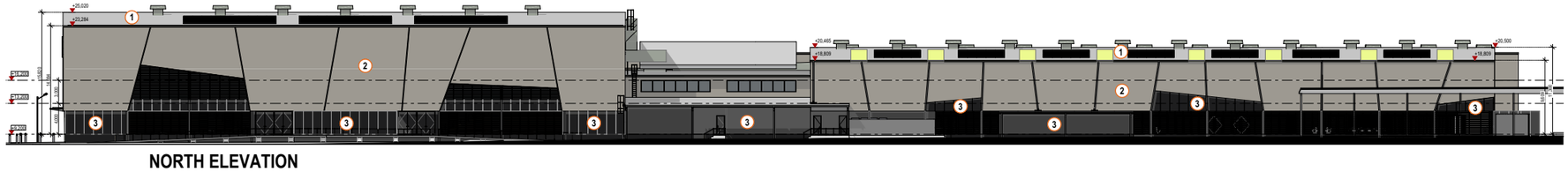
This conceptual thinking was further developed in the elevational built from of the development taking the concept of water and movement and looking at the way water and wind has a dramatic effect on the natural environment and landscape. the concept of the local escarpments eroded and worn, developed the concepts for the elevational built form of the proposal.

Individual modules of the built form mass reflect the different rock escarpments, the movement and shaping of the water courses and tributaries shape the lobbies and the landscape ground plain treatments, and the erosion of wind and water provide movement and articulation within the facades.

Landscape concepts and opportunities to further this connection with country are included on the following pages



The Water | The Rocks | Erosion



NORTH ELEVATION

Materials

The proposed material palette is inspired by the history and heritage of the site such as coal, sandstone and timber.

Potential for sandstone to be used throughout the site with the introduction of corten--a subtle reference to the previous Newcastle Steelworks history.

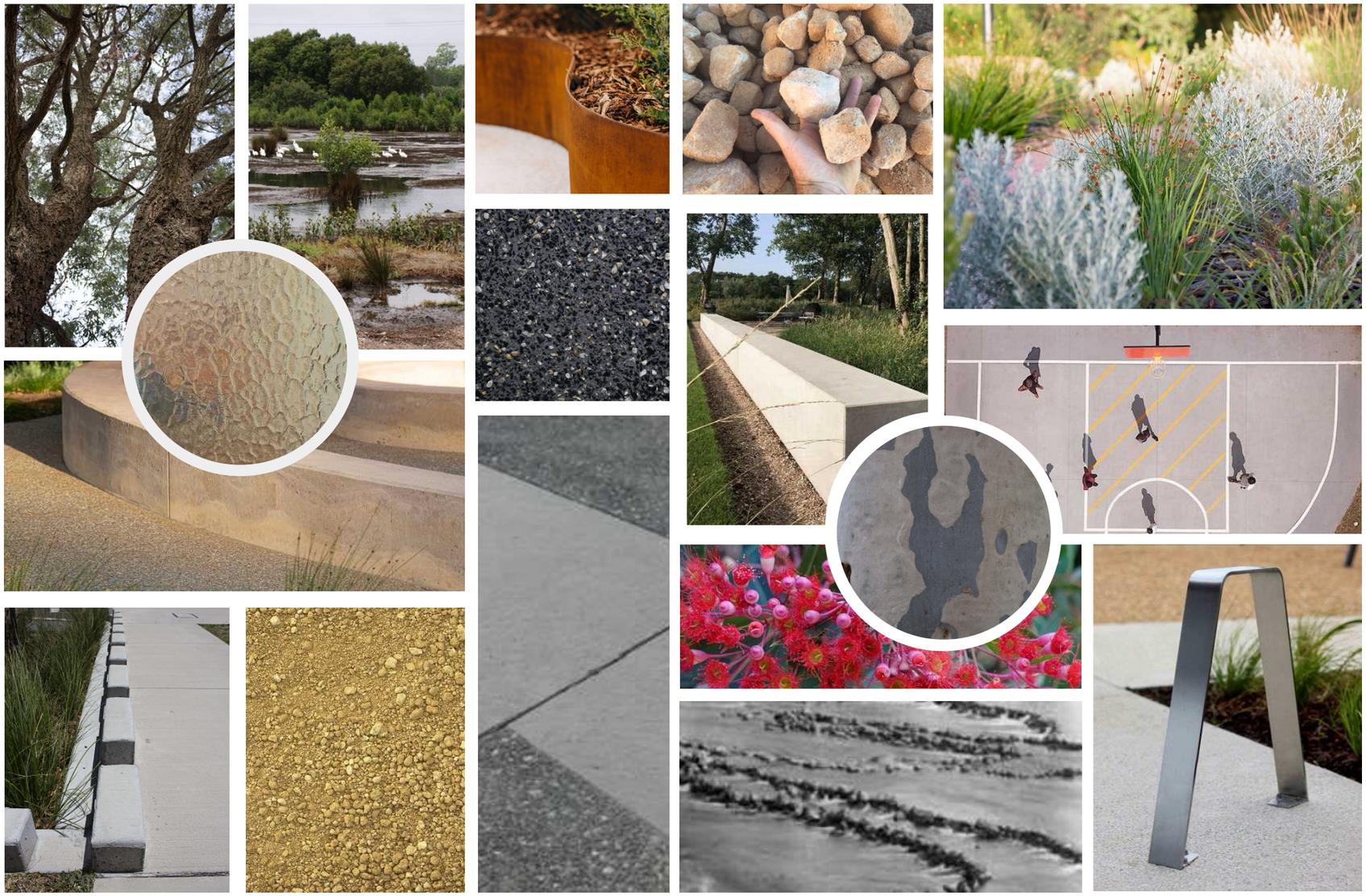
Green concrete bladeseating walls to reduce environmental impact.

Sandblasted and exposed aggregate pedestrian surfaces to create visual interest in hardstand areas to create movement and flow of people through the landscape. Black aggregate to make reference to the coal history of the area.

Use of endemic plant species to create a sense of place unique to the site and daylight the site's previous existence as a swamp ecosystem.

Swathes of native grasses proposed to reinforce movement and the site's relationship to water and movement of people and fauna.

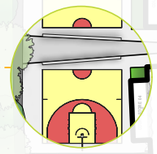
Opportunity to incorporate colour finish to halfcourts at rear as reference to Newcastle as the first City Council to fly the Aboriginal flag in 1977.



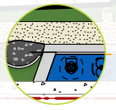
Opportunity for design insertion into patterned treatment to awning and wayfinding signage.

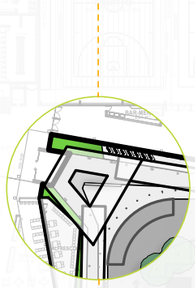
Use of green concrete to blade seating to promote reuse of site material and reduce environmental impact. Opportunity for incorporation of speakers into seating to create audible experiences of site, its history and relationships.

Opportunity for soundscape design insertion.



Opportunity to colour courts in Aboriginal flag colours to represent Newcastle City Council's more recent indigenous history or to commission artwork for the surfacing





Creation of meeting places and communal areas for gathering along share path edge. Inspiration taken from campsites along water corridor (prior to drainage corridor) and strong Awabakal relationship to water.

Welcome to Awabakal Country

Opportunity for Welcome to Awabakal Country sign - identified in Designing with Country workshop

Manipulation of pedestrian movements through the site replicating the manipulation of landforms for fishtraps. Proposed feature pavement patterning at specific locations.

Planting of endemic species to establish a sense of place and connection to Country specific to site.

north

1 CONNECTION TO COUNTRY
Scale: 1:1000

5.5 Urban Design Principles

5.5.1 Sports Precinct

One of the project's key objectives is to bolster the existing Hunter Sports Precinct through the establishment of a Regional Indoor Sports facility. The proposal seeks to successfully meet this through various urban design principles:

- A sense of address and arrival at a key destination
- Highly porous and connected Ground Floor plane via a promenade linking Turton Road through to a building forecourt and landscape
- Generous and diverse landscape design
- Servicing strategy integrated into the site

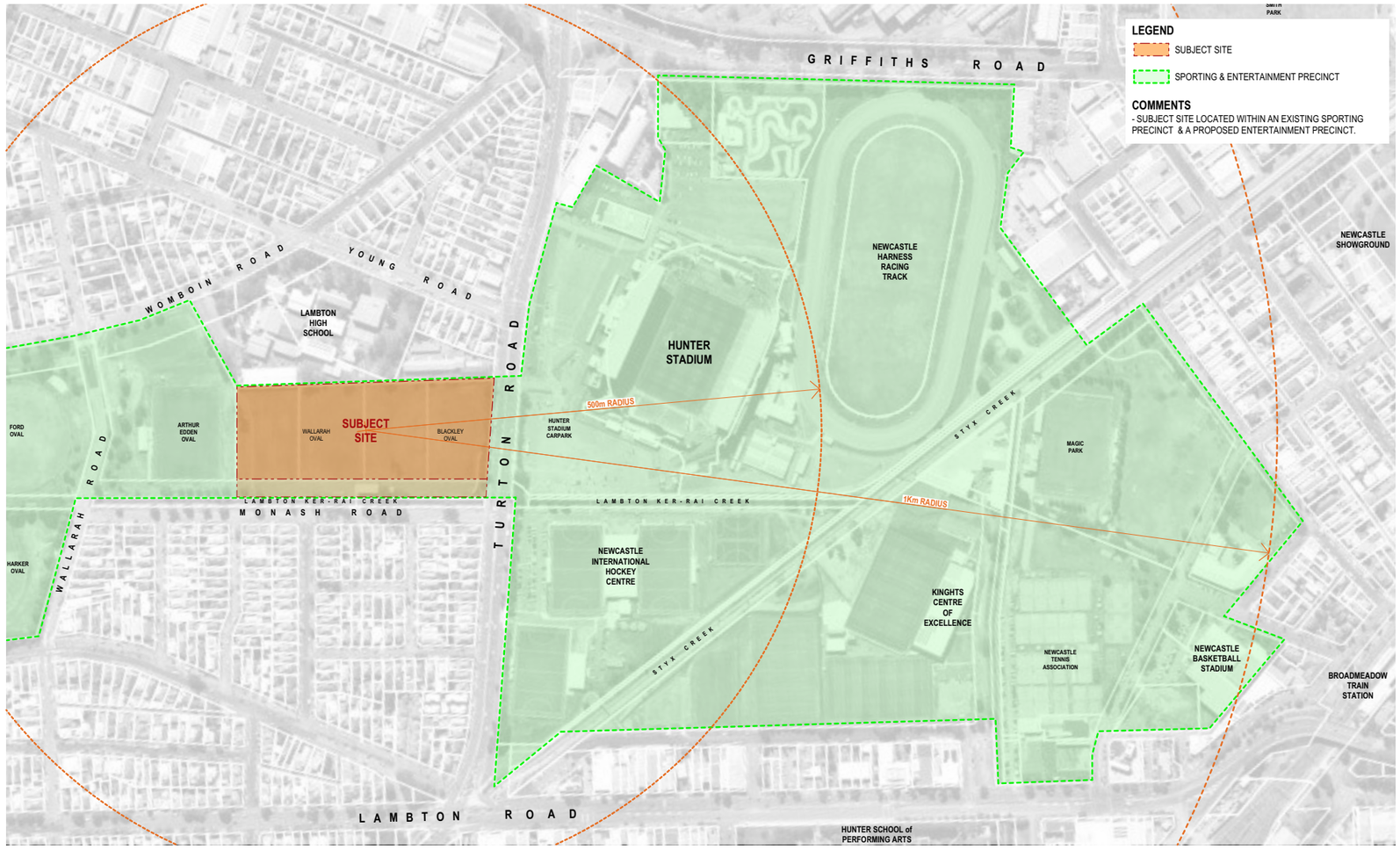
5.5.2 Addressing The Hunter Sports Precinct

Integral to the formal development of the building was recognising key local aspects that can be experienced from the site. The L-shaped building developed through balancing flood management with street address has been further iterated by introducing an extension of the existing southern water course along the buildings frontage, from the Monash Street secondary entrance through to the primary address of Turton Road. The tributary element shapes the façade line and is expressed further through the shaping and design of the hard and soft landscaping that leads people like a flow of water from the access points. These frontages are activated by lobbies, a café and companion tenancy, and include building entries, forecourts and outdoor dining areas, with internal activities visible through transparent front public facing façade.

5.5.3 Engaging the Local Context

To activate the site itself, the key public urban space and building entry has been positioned on the South-East corner. This addresses the approach from the primary access road as well as public transport routes.

The form draws visitors from the two site entry points along the building active frontage to the building's primary forecourt and entry, from Monash and Turton Road, making the building more porous and engaging with both streets. The form is extenuated at the Turton Road address through the Stadium or Show Court pavilion placement, as the tallest element of the facility, designating hierarchy in the site entry points.



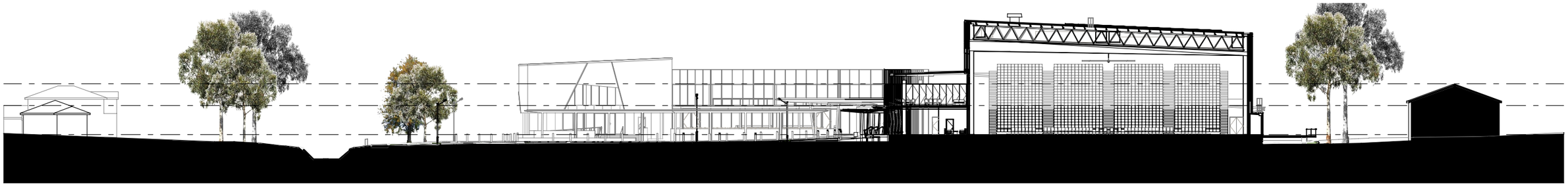
5.5.4 Scale & Setbacks

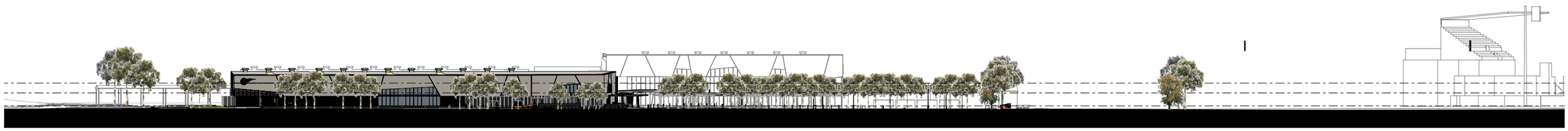
The L Shaped building form prioritises a long and low building form where the activities inside the building can be seen from the street. The building form of approximately three levels is kept to the rear of the site such that the two story street front element is of a scale that is humanised for the precinct and readily accessed from both site entry points where pedestrian traffic will come from. This is key to the facility's objective to be visible and accessible – welcoming visitors and the community into the building.

Through the SDRP workshop process, all facades of the building have been provided equal consideration, as the building is one seen in the round. A consistent fenestration has now been adopted across all facades, which allows for a combination of solid facades with considered placement of apertures, as well as scaling responses to context.

The building form along the southern boundary water course however has been shaped to extend the 'tributary' element from the Turton Street frontage along the Monash Street frontage. The SDRP supported this idea to both strengthen the 'tributary' idea and address Monash Street more effectively.

In response to SDRP matters raised, the northern facade, where building program is less interactive with the external spaces, and the scale of neighbouring buildings less comparable, the building fenestration has been broken down to include both horizontal and vertical elements reflective of the scale of the existing context and to reflect the design concept.





5.5.5 Street Activation

The building form has been generated through extensive flood modelling to balance the new building form's impact on existing flooding and an intent to activate and present to Turton Road and Monash Road. As a result the utilises an L-shaped public boulevard or pedestrian tributary to connect the building's primary entry with the public realm of adjacent streets and cycleways.

Entry Into Public Realm from corner

From the corner of Turton and Monash Roads, the site is bordered by a combination of existing avenue of trees along Turton Road, which has been extended around the corner along Monash Road, to provide a consistent curtilage to the building. The tree lines lead the visitor to the site access points, being the L-shaped pedestrian tributary, which link Turton Road with Monash Road. From the site access points, the visitor is led to the main building entry via , located at the change in direction or interior of the L shape. Along the journey, the visitor will pass the Show Court Lobby, external café seating as well as the companion tenancy, which all serve to active the entry forecourt.

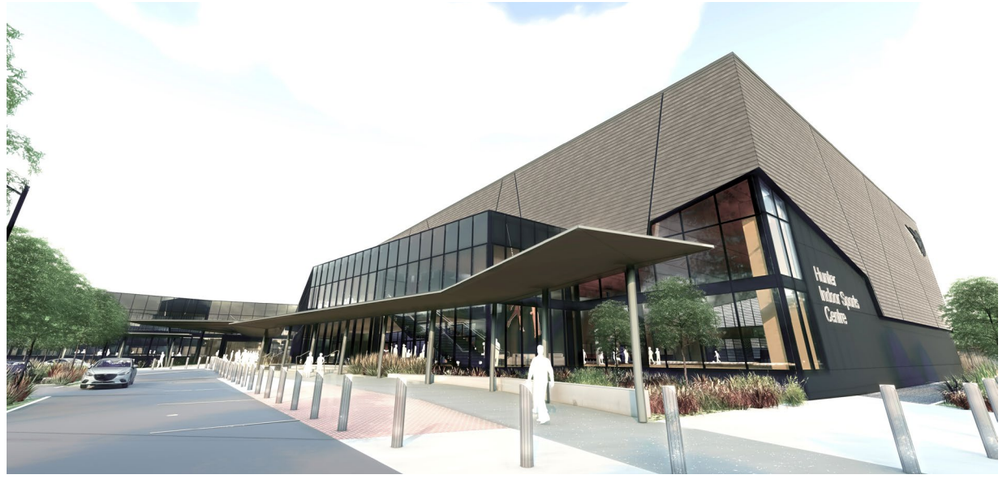
Southern Landscape

As you move off the corner along the Monash Road frontage, the landscape design proposes additional plantings within the site boundaries, that supplement the existing street trees along Monash, providing a visual screening and softening to the proposed carpark. The pedestrian entry from Monash across the existing pedestrian bridge site entry is delineated through clever pavement patterning, a corner building element comprising the companion tenancy, and an overhead walkway roof that leads you around to the main entry to the facility. Heading west along Monash Road the building is fenestrated to reveal the internal workings of the High Performance centre showcasing the regions elite, and then the corner of Court 09 has been opened to address the existing pedestrian footpath and cycleway.

As a result of the SDRP workshop, the building has been setback from the existing open concrete stormwater culvert to allow the potential future rewilding of the watercourse edge, and the opportunity to amplify the projects referencing of the sense of place as fronting an ancient tributary that once sustained the area as a hunting and gathering environment.

Show Court Activation

Similarly to Monash Road, the tree lined avenue that defines the street corner and has defined the Turton Road street interface for many years, leads the visitor to the primary entry to the site. The eastern entry links the site to the adjacent Hunter Sports Precinct, including Hunter Stadium and the International Hockey Centre, including opportunities for transport sharing. The access point is also the continuation of the cycleway into the city. As you access the site from the east, along the entry boulevard, you are picked up by the start of the awning which pulls you to the largest of the pavilions 'the show court' which revealed itself from the street corner above the tree line. The façade opens at the corner to provide a glimpse of the court interior, before leading you along to the glazed show court lobby, via the continuation of the undercover landscaped pathway shaped to reinforce the 'tributary' and flow of players, officials and spectators to the main building entry. The boulevard broadens to create a large forecourt at the main entry allowing for people to congregate before and after entry, whilst overlooking the movement of the lobbies and interactions of the café and external seating.



5.5.6 Site Infrastructure

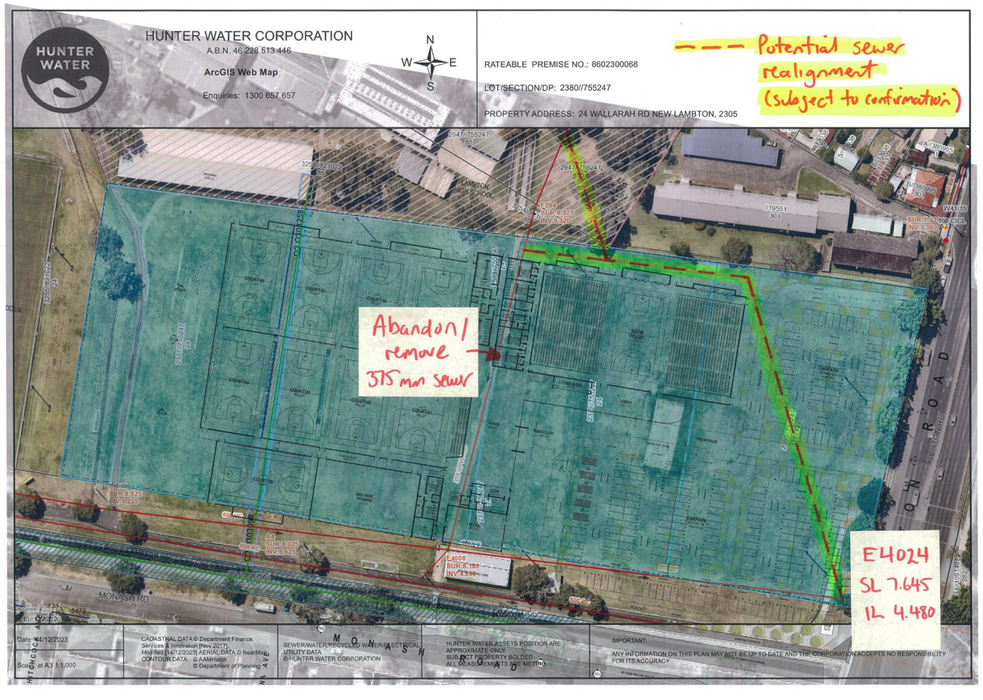
The lowest level of the development contains the bulk of the back-of-house functions of the building, as well as end-of-trip facilities. The southern side of the site provides a designated building servicing point at which vehicular and truck access to the building without impeding pedestrian access to the main street frontage. The main access point for vehicles off Turton Road provides in and out access to on grade car parking spaces (including EV charging spaces). Alongside the building access for loading and waste collections, access is provided for EOT facilities with adjacent showers for building occupant usage.

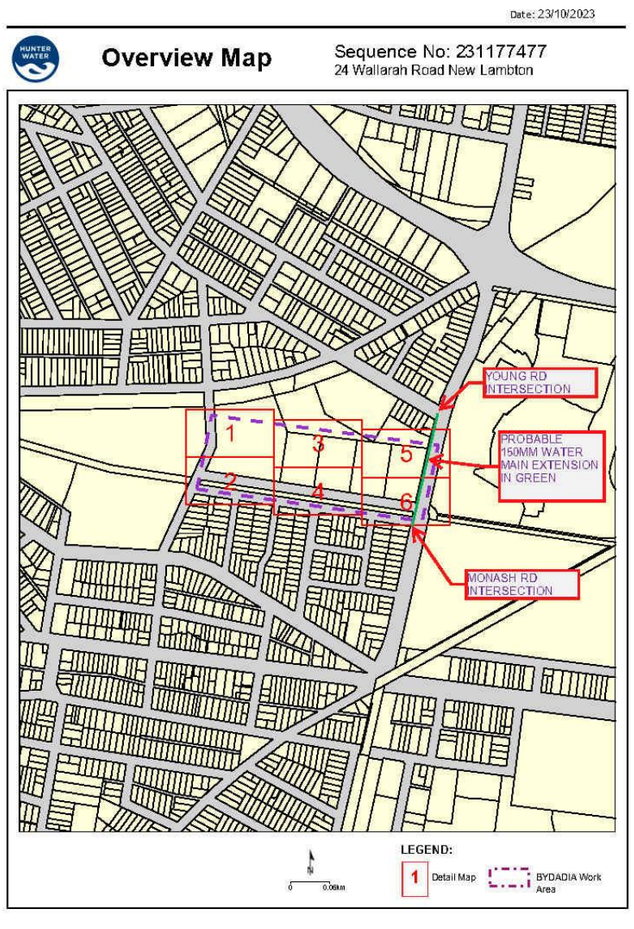
Ground Level Loading Dock and Waste rooms are located adjacent to the café back of house with direct access to the services layoff space.

Existing Site Infrastructure and Services was also reviewed with discussions held with the local authorities and providers.

Hunter Water:

- Sewer relocation and clearance provisions. North South Sewer relocation in order to be not located under building. Final design to be completed during Stage 1a documentation phase.
- North/ South underground Stormwater Culvert Re-Location. Cuts proposed site and cannot be built over. Final design to be completed during Stage 1a documentation phase.
- Main water supply augmentation to Turton Road. Section 50 Certificate has been requested. Provision made to provide link to water supply within Turton Road to increase pressure availability. In addition provision for on-site fire fighting tanks has been made, dependant on final pressure statement.
- Booster Assembly location on entry exit driveway adjacent to Turton Road. Requires clear line of sight from booster assembly to fire water tanks.





Energy Australia:

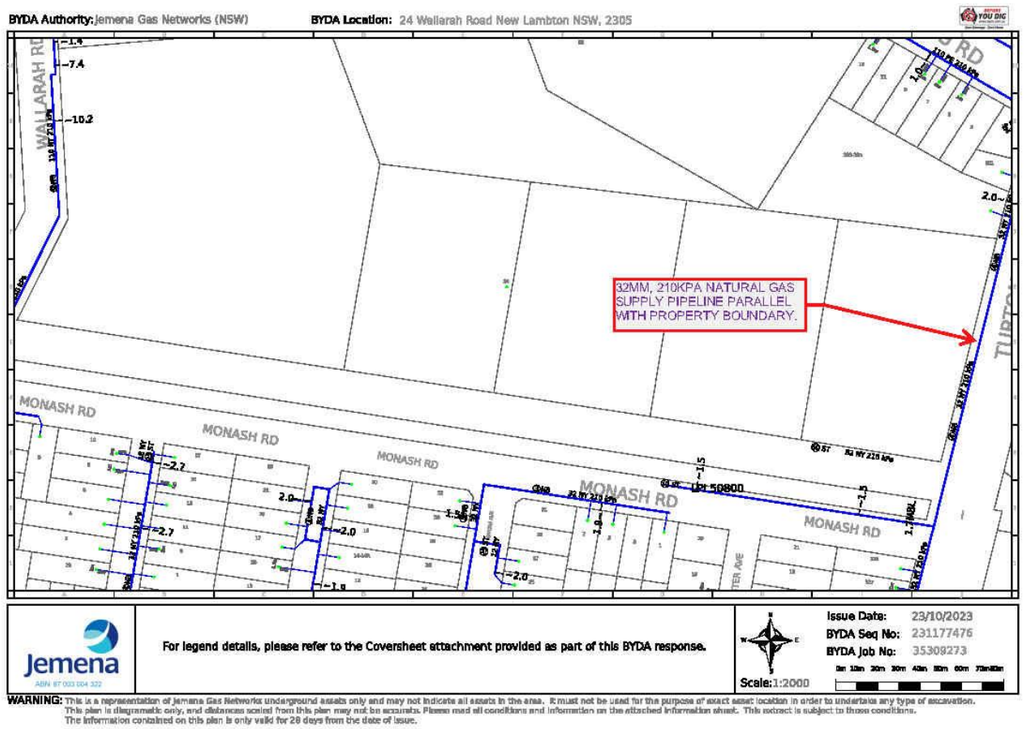
- Provision options for site upgrade
- Location of proposed kiosk. Various options for the location of the proposed electrical kiosk were explored both from an optimal provider point of view but also from a flood mitigation point of view. Optimum location adjacent to entry exit driveway.
- Proposed location of under bore to Turton Road. Need to bring high voltage from the eastern side of Turton Road.

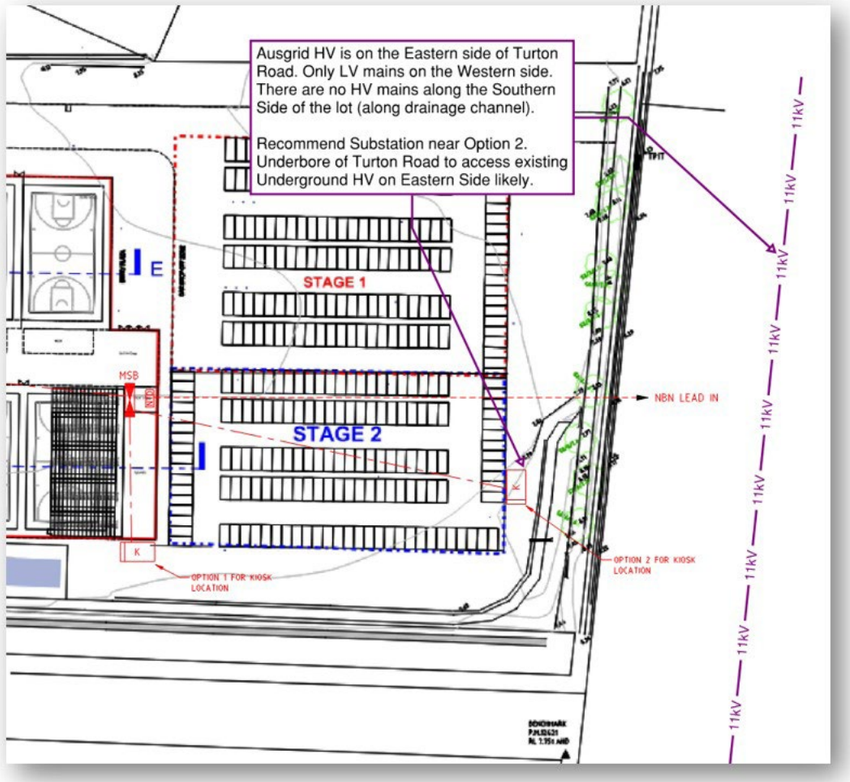
Jemena

- Please note that whilst no gas is being proposed to be used within the facility there is availibility of 210kpa Natural Gas supply along Turton Road Boundary. Gas supply for use within Cafe kitchen.

NATURAL GAS SUPPLY

- Information obtained from Jemena indicates that there is currently a natural gas main outside the property boundary.
- The pipeline is a 32mm Nylon pipeline and is on the western side of Turton Rd. (Site side)
- The pipeline pressure is a medium/high pressure 210kpa. This is suitable for supply to the site in the event that gas fueled appliances and equipment are required.





5.6 State Design Review Panel

As part of the SSDA process, the design team have had a meeting with the State Design Review Panel (SDRP) facilitated by the GANSW to present and workshop the HISC design proposal. The focus of design review is on design quality, amenity and public benefit impacts and outcome.

- State Design Review Panel meeting was held on 21 February 2024

5.6.1 Key Discussions & Outcomes

Key Workshop Discussions:

The location of the project in the heart of the future Hunter Sports and Entertainment Precinct, presents an exceptional opportunity to create a landmark indoor sporting facility. It is recommended that further consideration be given to the landscape strategy, public domain interface and user experience.

The following elements of the proposal are supported:

- Early involvement with Country through cultural values training undertaken by the design team
- The commitment to connect with the local Aboriginal community through the sport of basketball and intent for ongoing engagement and consultation throughout the design process and beyond
- Master planning principles in response to the flood constraints
- Commitment to share the facilities with the adjacent school
- Ambition for an environmentally sustainable design that will deliver sustainable outcomes.

The following table provides a summary of the panel's commentary and the Design Teams Response:

The panel recommended the project proceed to lodgment of the SSDA.

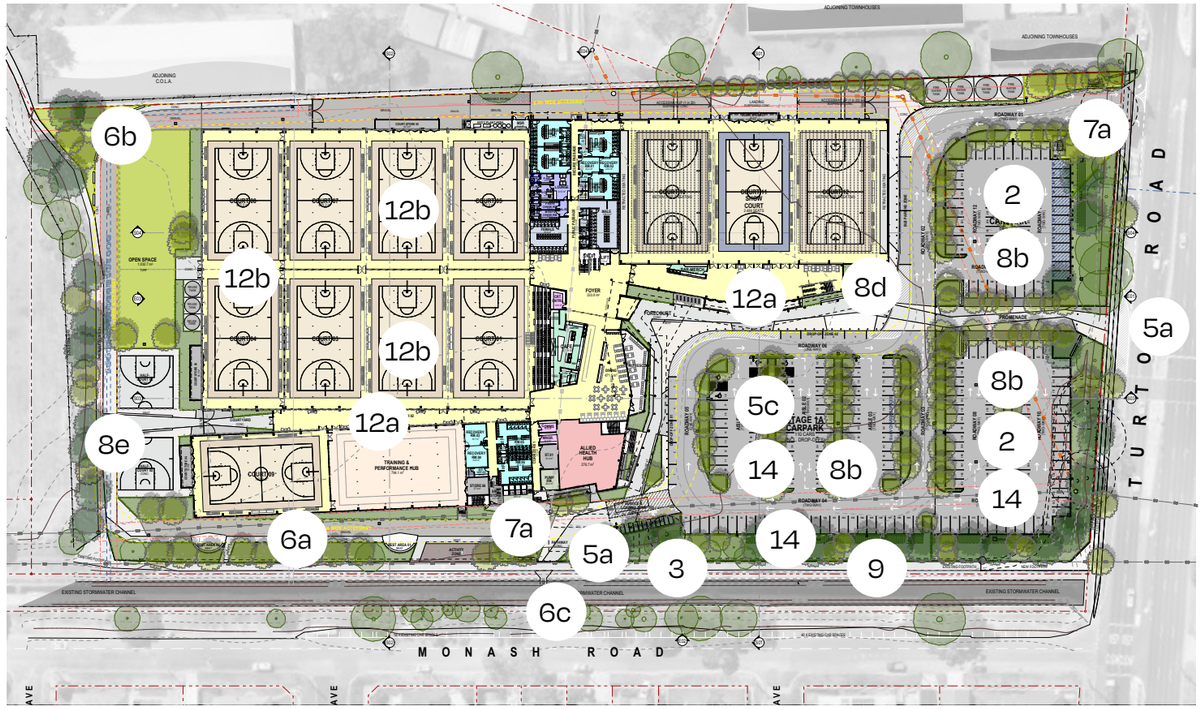


Figure 39: Ground Floor Plan

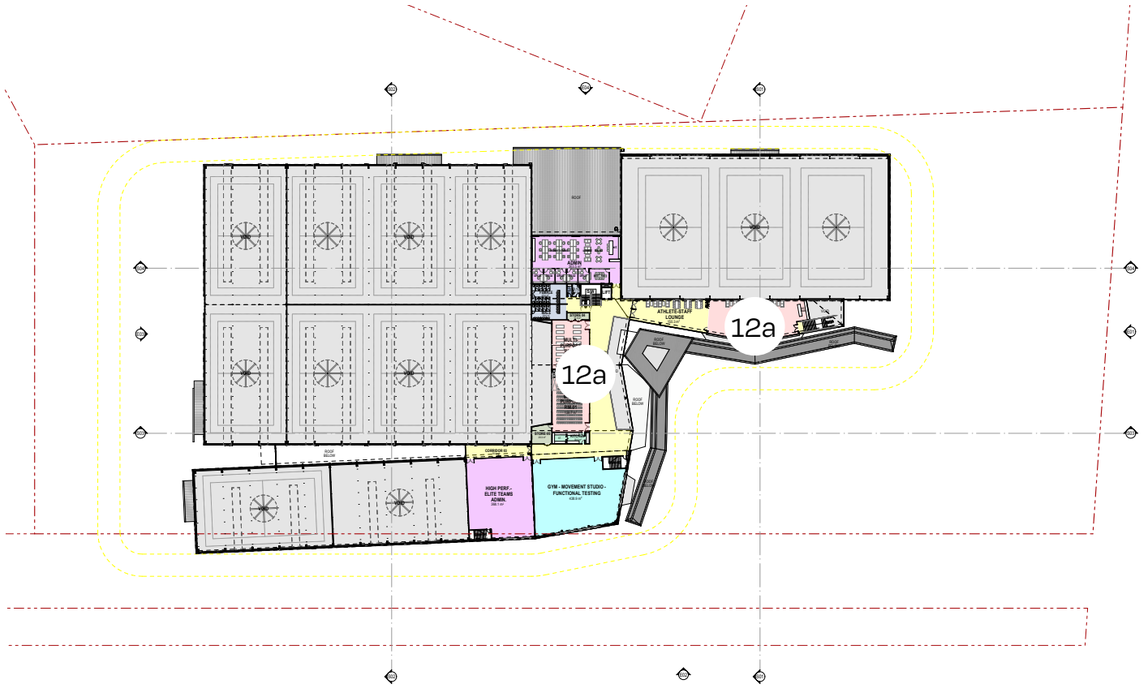


Figure 40: First Floor Plan

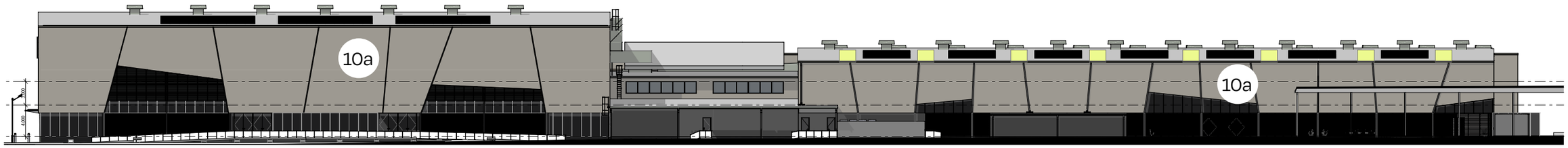
SDRP Comment	Design Response
Connecting With Country	
Acknowledging Basketball New South Wales's commitment to Connecting with Country and the support from their Aboriginal Advisory Group, there is further opportunity for a place-based narrative which can provide a framework to inform the architectural and landscape response to the project.	
1. Demonstrate how Country is implemented and expressed in the master planning, built form and landscape. For example, by integrating the narrative around movement and gathering into the design response.	The overall proposal has been developed to reinforce and integrate the concept of movement within the built form and landscape.
2. Extend Connecting with Country beyond interpretations and into tangible examples of how Country is cared for and protected.	WSUD principles and endemic plant species have been incorporated within the proposal.
3. Investigate opportunities to enable naturalisation of the creek along the southern boundary, aligning with the water story and supporting regeneration, revegetation, and healing Country.	The proposal has been redesigned to accommodate any future re-naturalisation of Ker-rai Creek. A landscape zone along this frontage consisting of mainly soft landscaping will allow for future of the cycleway and softening of the former creek edge.
4. Refer to the Connecting with Country Framework and case studies on the GANSW website for more information and guidance.	Noted. Refer Connecting to Country Response within the Landscape Design Report.
Site Strategy & Landscape	
The site's strategic location within the Hunter Sports and Entertainment Precinct and Broadmeadow, noted as a Regionally Significant Growth area, offers considerable potential to illustrate best practice for a modern sporting facility and responsibility to deliver significant landscape and public domain improvements.	
5. Review the pedestrian and vehicular circulation, access, egress, site permeability and equitable access. Address the following:	
a. Provide efficient and legible circulation focused on how people get to the site from the surrounding streets, the school to the north and the train station to the west	All the pedestrian links within the site have been enhanced and developed to provide a clear link to the existing pedestrian network within the local context.
b. Improve site entry points and circulation	Refer above.
c. Provide heat protection for people moving from the car park into the building	Shade canopy trees and an overhead canopy roof along the forecourt provide shade whilst additional seating and rest areas have been incorporated within the landscape design
d. Reduce hardstand car parking and replace it with permeable surfaces	Carparking hardstand areas have been reduced wherever possible. Additional circulation aisle along the southern frontage has been removed and replaced with additional landscaping.
e. Reduce and rationalise the quantum of vehicle circulation space	Additional circulation aisle along southern boundary has been removed whilst not reducing carpark function or queuing ability.
f. Prioritise pedestrians over vehicles	Wherever possible pedestrian pathways and forecourt have been developed and enhanced to Prioritise pedestrian movement across the site.
g. Develop a clear wayfinding strategy for the project.	Pavement patterns, overhead walkway roofs and hierarchy of forms provide a clear delineation and coupled with signage provide for a clear wayfinding strategy both from a pedestrian and vehicular access point of view.
6. Careful consideration should be given to how the building interfaces with the adjacent sites and broader context. Provide detailed drawings including cross sections, to demonstrate:	
a. An active and high-quality ground plane between the built form, existing footpath, Lambton Ker-rai Creek, and Monash Road to the south	The building and landscape interface along Ker-Rai creek has been developed to provide a high quality interface incorporating gathering spaces, activity zones and high level soft planting. The building façade has been punctuated with windows to provide greater connectivity to the internal workings of the facility.

SDRP Comment	Design Response
b. Improved connections between Lambton High School and the surrounding residential area	The interface between Lambton High and the proposal has also been enhanced to encourage links between the two facilities. The building corner has been articulated and opened to Lambton High and the COLA providing a high level of interaction. Proposed gates to secure the northern setback have been located beyond the existing gate from Lambton High School allowing continued school use of the remnant greenspace along the western frontage of the site.
c. Clear and safe pedestrian entry point/s across from Monash Road	The existing pedestrian link to Monash Road has been enhanced and prioritized through redesign of pavement surfaces and relocation and screening of service zones.
d. Additional crossing point/s from Monash Road to the site.	No additional crossing points are considered at this point due to levels and flooding issues. The current link provides an effective link at approximately the halfway point of this frontage.
7. Site and building entry points should be clearly identifiable and welcoming.	
a. Relocate the waste bins away from the pedestrian entry point across the culvert to enhance CPTED measures.	An internal bin store has been included within the building. Service entry and ramp have been redesigned to be part of the façade and to be separated from the pedestrian entry point from Monash Road.
b. Consider a more sensitive integration and location of the substation near Turton Road.	The substation has been located further into the site and screened by effective soft landscape planting. Refer landscape plan for detail.
8. Develop the proposed landscape principles and demonstrate how they are achieved through a detailed landscape design strategy that:	
a. Targets 40% tree canopy cover across the site	Total site shade area proposed is 16.5% of whole site area including building footprint. Carpark shade area proposed is 66%. Refer landscape drawings.
b. Supports greening and a permeable car park area	Carpark has been redesigned to incorporate landscape zones and WSUD principles facilitating passive drainage of the carpark

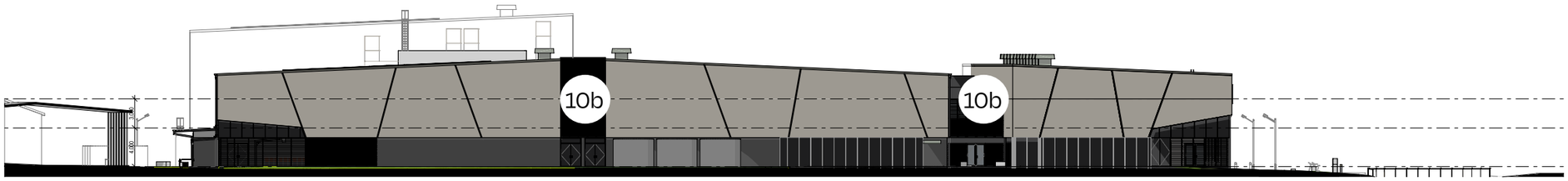
SDRP Comment	Design Response
c. Improves the quality and integration of landscaped spaces throughout the site, rather than limiting them to the curtilage	Landscape zones have been fully developed including integration of landscape with the internal built environment. Refer Landscape drawings for detail.
d. Integrates landscaping within the building	Landscaping within the building was reviewed. Connections to the external landscape have been enhanced through placement of landscape zones and access to them via breakout spaces has increased the connection of the internal built environment and the natural landscape.
e. Makes provision for dedicated pre-games warming-up spaces co-located with green space.	External half court zones are proposed. These are linked to the internal spaces via external pathways or directly via the courtyard off corridor 02. These half courts allow for use by the general public.
9. Consider introducing a generous easement along the footpath and creek on the southern boundary and naturalisation of the creek (as noted in item 3) to increase opportunities for walking, gathering, cycling and street activation and improve amenity along Monash Road.	Refer landscape drawings for details of gathering, rest and activity spaces, and improved amenity along the Monash frontage. The existing cycle/pedestrian way is maintained in it's entirety until Stage 1B where the Eastern connection to Turton Road is amended to facilitate the carpark design.
Built Form	
The building in the round has implications on treatment of building mass, entry points and architectural expression. The disparate language used for the different components of the building should be made more cohesive. In addition, consideration should also be given to internal functionality particularly due to the staging of the different components.	
10. Explore massing options that reduce the footprint, and optimise green space, amenity, and permeability.	The scale is reflective of the function of the building and the number of courts required. Built form has been reduced through the use of retractable seating.
a. Develop the elevational treatment and articulation of the northern and western façades to provide an appropriate interface with the townhouses and school and reduce adverse visual impacts.	A revised overall elevational treatment has been developed which extends the concept of movement into the built façade and providing a cohesive overall architectural treatment for the overall facility. These facades have been developed along the concept of escarpments that have been weathered and articulated with fissures ad eroded clefts allowing for the façade scale to be reduced and modulated.

SDRP Comment	Design Response
b. Modulate the western façade in consideration of its relationship to the green space and connection with the school, including pathways and entrances between the school and the facility. For example, modulation could include shifting some of the internal program to the west.	Western façade has been modulated and broken down to provide a better connection, both physical and visual, with Lambton High school and the proposed landscaped areas and pathways. The southern high-performance module has been twisted allowing the increase of useable internal breakout space and greater connection of corridor 02 to the eternal courtyard, proposed half courts and landscape beyond. A corner window, eroded cleft, has been included within Court 08 to provide a direct visual connection to Lambton High School.
11. Reconsider the internal planning, hierarchy and functional layout and explore an efficient use of space for diverse user groups to better engage with the local school and wider community.	HISC will develop partnerships with Lambton High School and the wider community to facilitate patronage of the facility by school groups.
12. Test the acoustic impact of the arrangement of eight open courts and consider opportunities for the arrangement to be interspersed with amenities which may provide noise mitigation.	The eight internal courts are to be broken into three halls with acoustic glazing providing visual connection between spaces whilst reducing the overall acoustic impact of multiple courts being used at one time.
a. Co-locate meeting and gathering spaces with the playing courts to increase opportunities for interaction and to create views into the playing spaces.	Meeting and gathering spaces have been included within the playing halls over an above the required playing and runoff areas. In addition, additional glazing has been introduced from the foyer and Corridor 02 to increase viewing and connectivity into the playing spaces. First floor multi-purpose rooms have windows overlooking Court 01. These spaces will be used as breakout spaces as well as Culturally safe spaces for LAC's and Indigenous players. Glazing has also been incorporated from the lobby, players lounge and function room into the show court module.
b. Consider breaking down the space allocated to the courts into smaller segments and explore ways to increase visual and physical access.	Refer point 12.
Sustainability & Climate Change	
There is a real opportunity for this to be a demonstration project that is energy neutral. Therefore a more ambitious benchmark for the project's sustainability targets is encouraged.	

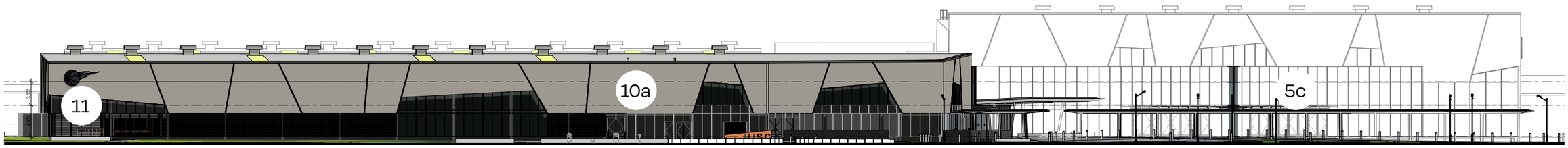
SDRP Comment	Design Response
13. Explore use of landscaping to assist with passive shading and minimise urban heat island effect and draw it into the building to enhance biophilic design principles.	The landscape design has been developed to provide a high level of shading to the building and carpark areas to reduce where possible the heat island effect. Landscape zones have been brought to the façade edge to biophilic design principles and the end user experience.
14. Demonstrate integration of Water Sensitive Urban Design.	The carpark has been redesigned to incorporate landscape zones to reduce and drain the hardstand areas and increase landscape coverage whilst endemic species selection has been undertaken to reduce dependence on watering.
15. Test the ventilation strategy and demonstrate that it's workable in summer and winter.	The ventilation strategy provides a high level of occupant adaptability and control to provide a comfortable internal environment. Passive natural ventilation principles have been employed with mechanical assisted roof ventilators. These systems will be further developed during the design development phase.
16. Include active transport strategies to improve and connect to existing pedestrian and cycle networks and the wider Broadmeadow area.	Proposal links seamlessly to local pedestrian and cycleways with close proximity to public transport along Turton Road and Broadmeadow Station.
17. Maximise use of roof solar for energy requirements given the day and night use of the space.	Roof top PV's have been included, and a full cost benefit analysis will be undertaken during the developed design phase to determine extent, size and possible battery inclusion. Refer Architectural Roof Plan.
18. Provide strategies for how a net-zero building can be achieved. This is highly encouraged to reach NSW's Net Zero emissions goal by 2050. Refer to 'NSW, DPIE, Net Zero Plan, Stage 1: 2020-2030' for further information.	Refer Net Zero statement provided by Northrop Engineers.
19. The project presents a significant opportunity to advance the inclusion of women in sport.	
a. Demonstrate that appropriate amenity will be provided in the new facility to genuinely encourage women to participate in the sport of basketball.	Newcastle Basketball actively encourages the participation of women in sport and a high percentage of its members and players are female. HISC is multi-sport venue that has been designed to include other sports including netball which is predominantly a female sport. Equal numbers of male and female change rooms and amenities have been included within the facility.



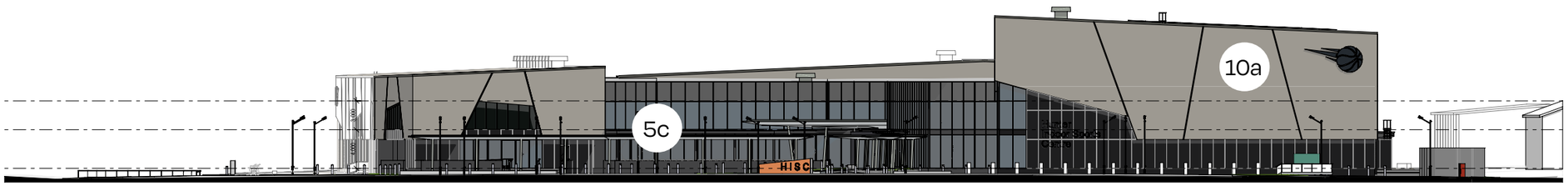
NORTH ELEVATION



WEST ELEVATION



SOUTH / MONASH ROAD ELEVATION



EAST / TURTON ROAD ELEVATION

Figure 41: Elevations

6. High Quality Development - Base Building Design

6.1 Floor to Floor Heights

The floor-to-floor heights for the building have been developed to provide appropriate spatial amenities for the individual sporting functions and coordinating structural depths with building services' spatial requirements. Floor to floor heights allow for a generous ground floor ceiling height of 3.5m allowing the patrons to not feel overwhelmed by scale. First floor areas have a ceiling height of 3.0m.

A minimum playing clearance of 9m has been employed through all the court playing areas to facilitate the range sporting uses. In addition, the showcourt module has an increased height suitable for the retractable seating and upper-level viewing areas as well as broadcast angles and digital displays.

The proposed maximum building height is 15,820 AGFL or RL 25,020 AHD.

6.2 Functional Blocking & Stacking

The functional block and stacking strategy arranges a series of playing court pavilions on the site in order of hierarchy, within an L-shaped superblock. The street edge of the superblock is populated by public facing program including a companion tenancy (health related service for instance), the café, main entrance lobby (at the inside corner of the L-shape), and the stadium or show court Lobby terminating the perimeter of the street-front edge. The stadium or show court is located in the L-shaped peninsular closest to Turton Road, with the high-performance court pavilion located along Monash Road peninsular, with The Back Court Pavilion is located at the rear corner of the site. The court pavilions are separated and defined by a circulation network starting at the inside corner of the L-shaped, drawing the patron along the street-front facades from the key site entry from Turton Road, and the secondary site access from Monash Road.

6.2.1 Ground Floor

The ground floor is largely occupied by all playing courts as well as primary circular, lobbies and café, official and spectator amenities, as well as a companion tenancy. Additional internal program includes building services rooms. An open stair and lift located off the main lobby provides access to the Upper floor.

The ground floor also accommodates a large external forecourt and associated pathway network leading from Turton and Monash Road, as well as on grade car and bicycle parking, with interwoven landscape.

Upper Floor

The Upper Floor is occupied by Staff Administration Workspace between the back court and show court pavilions, multi-functional meeting rooms (for administration and community use) over the café kitchen below, that overlook the back courts, a pre-function space and function room over the show court lobby, that overlook the show court as well as the external forecourt. A second companion tenancy (movement studio) resides over the ground floor tenancy addressing Turton Road, as well as an additional set of amenities servicing the upper level.

6.2.2 Roof

The Roof level provides an opportunity for Solar PV.

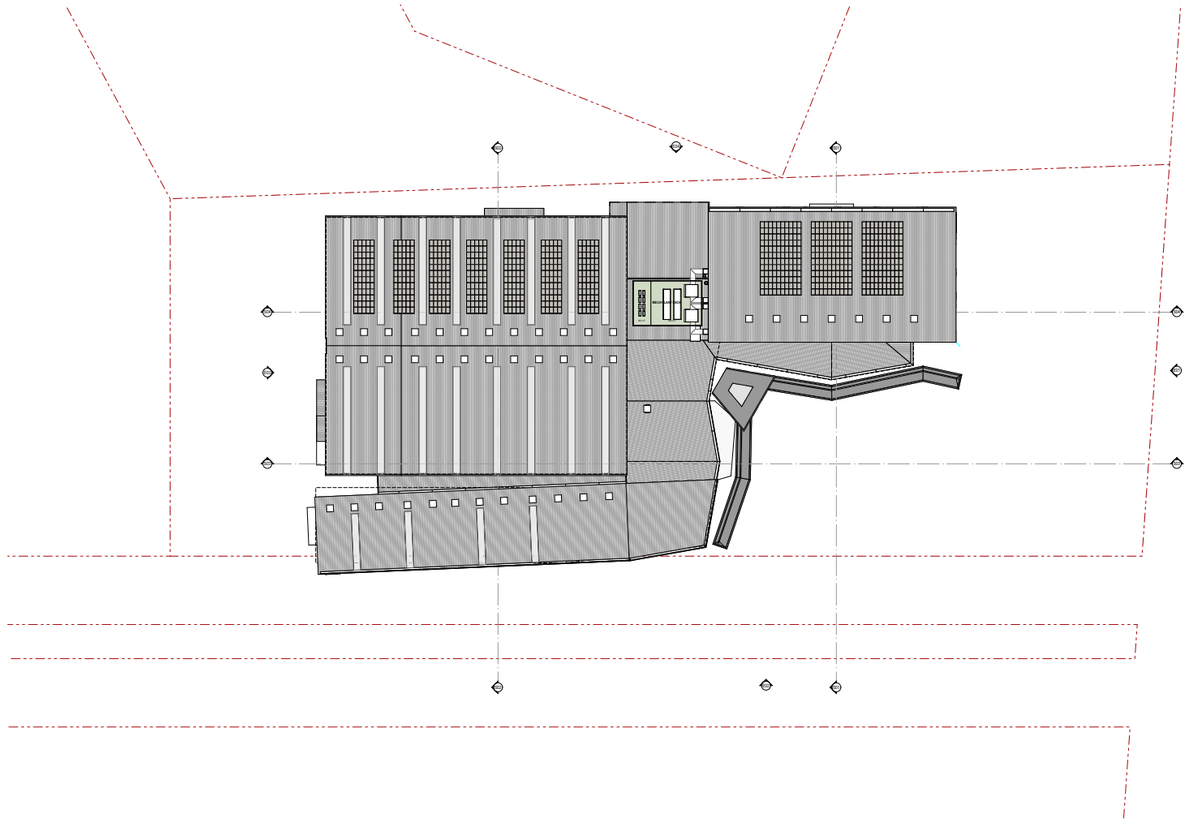


Figure 42: Roof Plan showing indicative location of Solar PV's

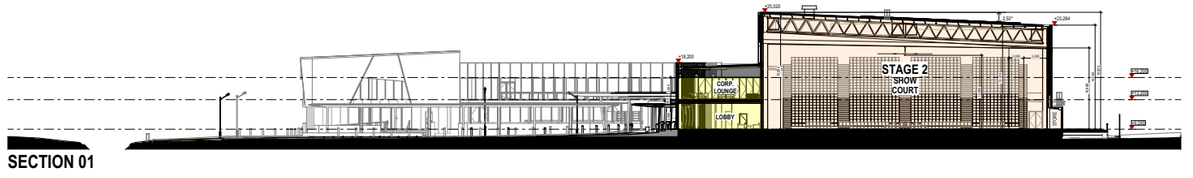


Figure 43: Cross section 01 showing floor to floor and max building heights

6.3 Structural Design

The concept design structural form of the Hunter Indoor Sports Centre comprises a mix of slab on ground, suspended concrete first floor and steel portal frame construction. The ground floor slab will be a slab on ground supported over concrete piles of varying depths based on the bearing requirements. The aim of the design is to allow spoil removed to from the site to be reused as non-engineered fill under the ground floor slabs.

The first floor Lobby, Multi-Purpose Areas and High-Performance training areas are a suspended concrete slab design on concrete columns. Structural support for the roof of these areas will be based on the related fire rating requirements.

A structural steel portal frame system is proposed for all of the playing court areas. This system allows for the staging of the proposal with simple connections for each new stage. Concrete toppings and conventional waterproofing/drainage is proposed for all wet area. Structural Steel elements have been sized to achieve appropriate Fire Resistance Levels (FRL).

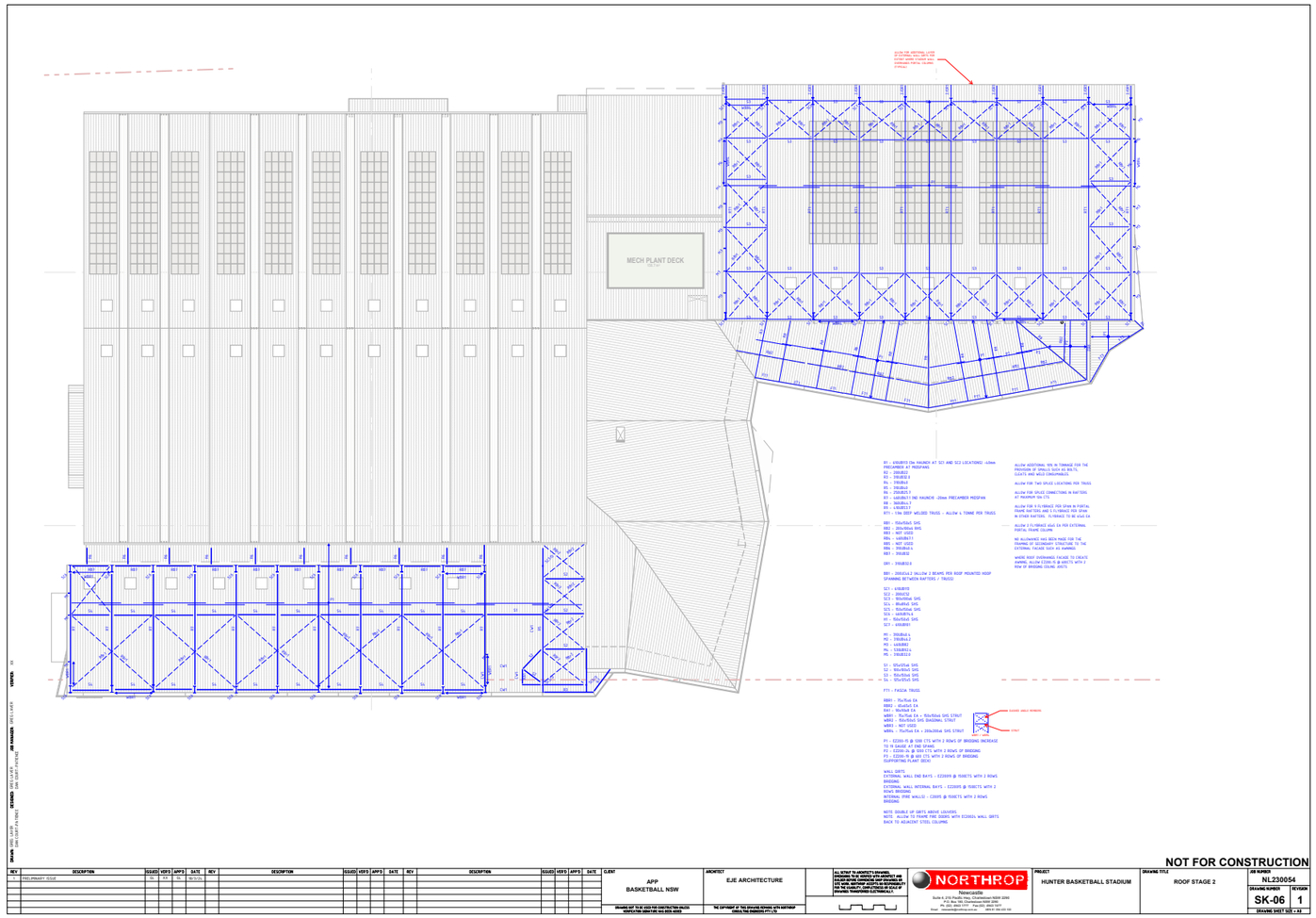


Figure 44: Stage 2 Concept Structural Roof Framing

6.4 Facade Design

The external façade of the project is still undergoing testing and development to ensure the cost and ESD parameters are being met. The double height glass façade along the lobby edges will be a curtain wall type system, with large open expanses of clear glazing with ceramic 'frit' added to alleviate solar gain as required. This will allow for maximum transparency from the main public open space, as well as elevating the views from the interiors to exterior landscape and city beyond.

The overall concept for the facades of the facility is a lightweight insulated portal framed structure. The design of the facades takes its concepts from rocky outcrops and escarpments with the upper level being stone coloured metal cladding that is articulated with random clefts and window placements referencing clefts and erosions caused by rain and window. The lower level is clad in a dark coloured lightweight sheet that is inset slightly from the cladding above to further reinforce the concept of the eroded nature of escarpments and cliffs. Dark coloured glazing framing and louvre inserts further enhance the overall design concepts. This system has the flexibility to adapt in accordance with Section J performance requirements as they become available.

The signage strategy for the project will be further developed in the next phase of design. Two locations are being considered for a Newcastle Basketball logo sign as indicated in the images. Both placement options intend to be prominent from key locations of approach to the facility. In addition, signage walls are proposed to be located at each of the key pedestrian entry points, off Turton Road and where the pedestrian bridge crosses Ker-rai Creek. In addition, a signage wall is proposed at the vehicular entry off Turton Road.

Figure 45: Rock Image Concept

Figure 46: Rock Image Concept

Figure 47: Overall Elevations

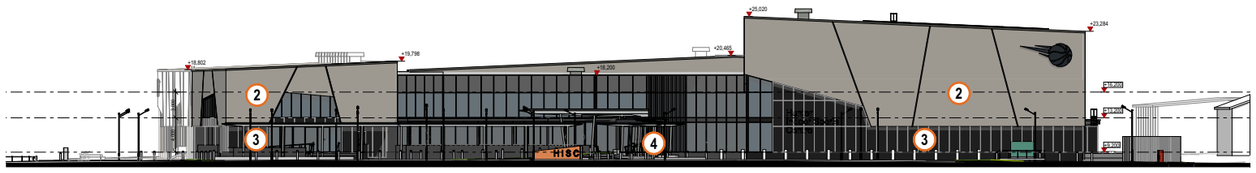
6.5 Materials Palette

The building's external materiality (refer to separate landscape architect report for public realm) will consist of high-quality and durable materials intended for the long-use life of this building for Newcastle Basketball and the other user groups.

Externally the proposal is a mix of lightweight cladding systems reflecting both the internal program and the façade design concept, and high-performance glass curtain walling to the double height foyer and lobby spaces. Additional glazing within the court areas, Allied Health and High-Performance areas appears as punctures to the façade picking up on the concept of fissures and erosion.

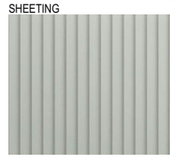
The glazing is predominantly high-performance IGU's with 'clear' tint and low E coatings. The upper lightweight cladding elements will have a matte finish in warm colours which represent the local sandstone and rocky outcrops. The lower basecourse is darker in colour strongly grounding the building and providing a counterpoint to the upper cladding material.

The internal materiality is intended to reflect the design concepts within the external built form and landscape whilst being warm and inviting for people to gather and meet. The general court areas will be utilitarian and reflective of the multi-sport environment.



LEGEND

1. **ROOF CLADDING**
   - 'SHALE GREY' COLORBOND STEEL TRIMDEK OR EQUAL SHEETING



2. **WALL CLADDING**
   - 'WALLABY' COLORBOND STEEL HORIZONTAL STANDING SEAM OR EQUAL SHEETING

3. **WALL CLADDING, GLAZING SUITE FRAMING**
   - 'MONUMENT' PAINTED COMP. FIBRE-CEMENT OR EQUAL SHEETING, & POWDER-COATED ALUMINIUM FRAMES.

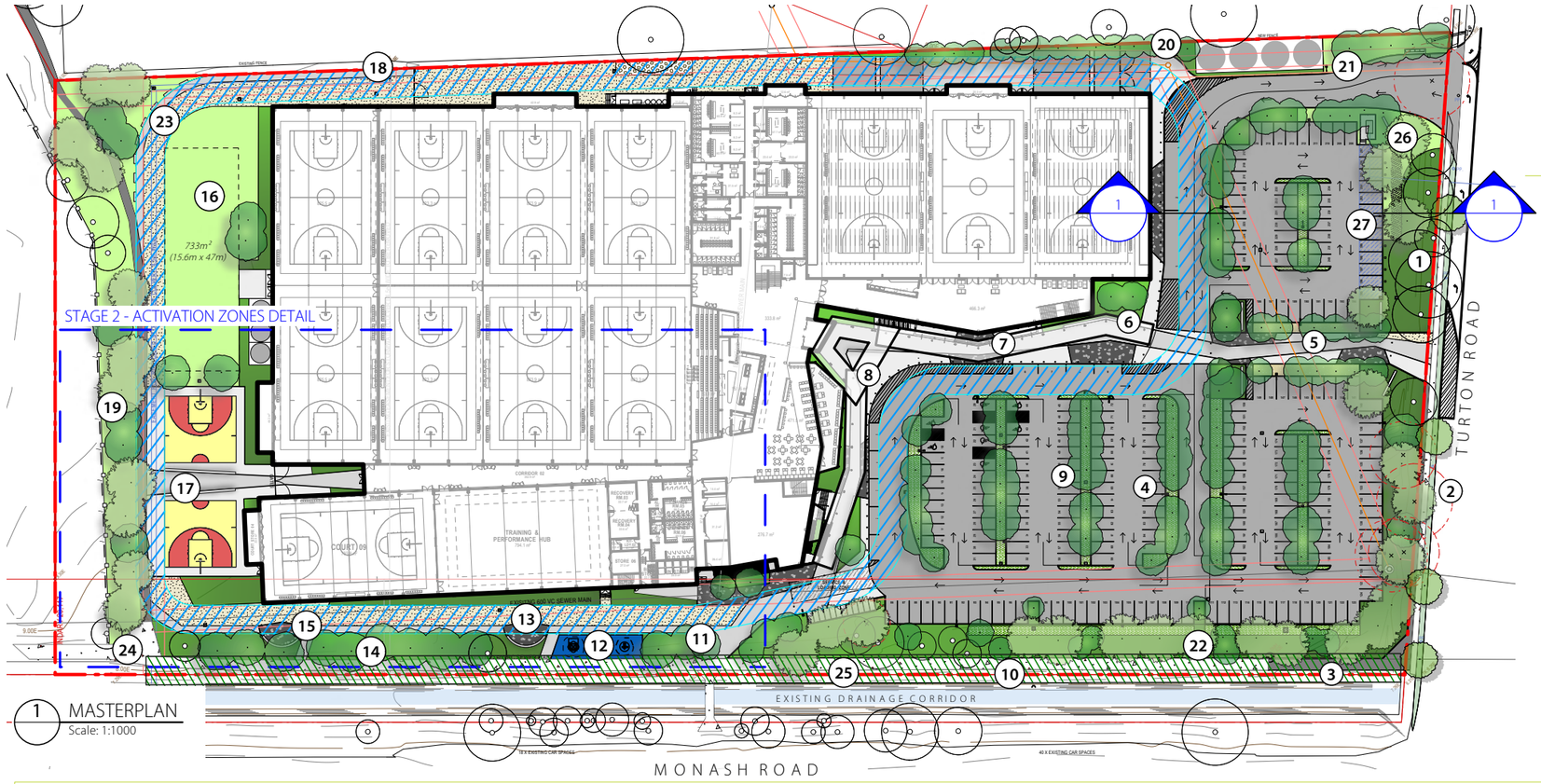
4. **COVERED WALKWAY COLUMNS &TRIMS**
   - 'SHALE GREY' COLBOND STEEL OR EQUAL CAPPINGS, & PAINTED STEEL COLUMNS.

5. **COVERED WALKWAY SOFFITS**
   - 'SNOWY MOUNTAINS HALF' PAINTED FIBRE-CEMENT SHEETING.

Figure 48: Materials & Finishes

03 MASTERPLAN

MASTERPLAN - STAGE 2



1 MASTERPLAN
Scale: 1:1000

NOTES

1. Existing trees to be retained and protected along Turton Road boundary to provide screening and retain canopy coverage
2. Existing trees to be removed where works affect TPZ (as per Arborist Report) and proposed trees as supplementary planting
3. New sharepath connection to easern end to adjoin Turton Road traffic lights
4. Electric vehicle charging and carparks
5. Formal Turton Road pedestrian entry with illuminated bricks in pavement to guide movement. Feature Ivory Curl Trees to frame building entry
6. Seating area to main entry spine
7. Pavement patterning to reinforce movement of people, fauna and water through the landscape. Aggregate detail to symbolise the idea of modification of the landscape to build fish traps
8. Covered awning to entry boulevard to provide covered pedestrian walkway and frame entry building. Opportunity for First Nations design insertion to treatment of fritted or manipulated glass sections.
9. Endemic and native planting of Lophostemon confertus, Tristaniopsis laurina and Brachychiton populeneus to carpark to maximise canopy coverage of hardstand area
10. 6m wide offset of hardscape elements from drainage corridor edge for provision for potential naturalisation of drainage corridor in future, by others.
11. Continuation of formal pedestrian entry from Monash Road pedestrian bridge with illuminated bricks to guide entry
12. Activity zone with gym equipment provided adjacent to sharepath to create activation and opportunity
13. Rest area off sharepath with opportunity for passive viewing of Training and Performance Hub. Forms inspired by First Nations' concept of the modification of the landscape to create a fishtrap
14. Endemic planting amongst seating areas
15. Rest area off sharepath with opportunity for passive viewing of Court 9. With blade seating wall for informal viewing, or opportunity for outdoor breakaway space for users of the indoor sports centre.
16. Open turf area for outdoor open, recreational space for continued school and public use.
17. Informal warm-up/passive halfcourt basketball court. Oxide colours to commemorate the history of Newcastle City Council as first city council to fly Aboriginal Flag in 1977.
18. Existing access from Lambton High School to be maintained as dedicated access to basketball facility.
19. Endemic tree planting to western boundary.
20. Planting to screen northern boundary and mitigate views of development from neighbouring residences
21. Turf to entry for drainage requirements
22. Endemic mass planting of grasses, groundcovers and shrubs to 1m high to reinforce riparian corridor, with trees above to provide screening of development from neighbouring residences to the south. Views beneath trees (1.8m high canopy clearance) to maintain visibility for CPTED.
23. 6m wide all-weather access vehicular track for fire engine provisions. 1.5m wide concrete path to portion of access way to provide desire line paving to school connection and informal seating to open space.
24. Existing sharepath to be resealed.
25. Portion of existing sharepath to be retained
26. No mass planting to entry point. Turf provided to ensure flood waters are not restricted.
27. Electric vehicle charging carparks.

north

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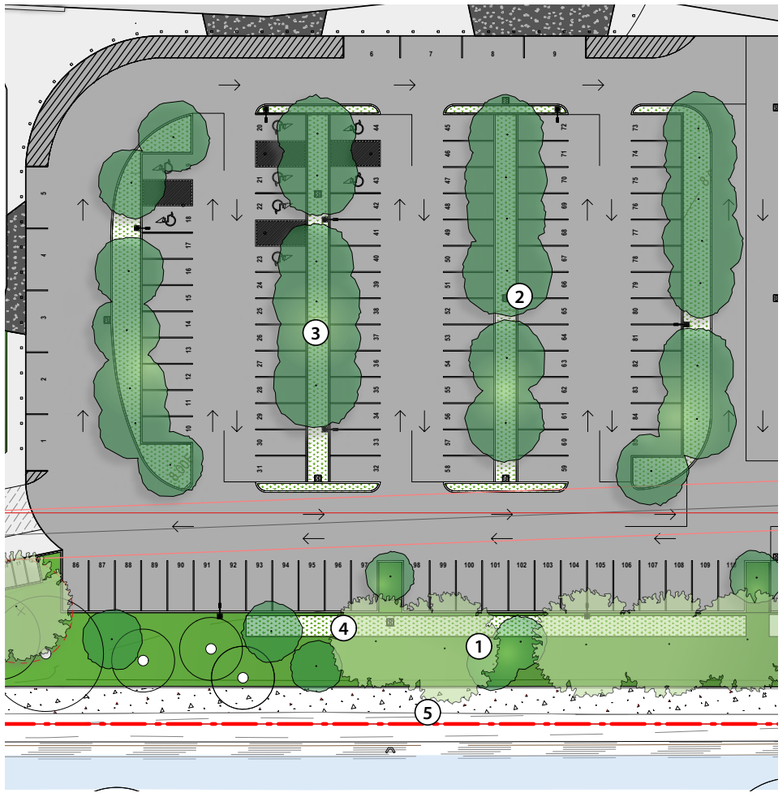
03 MASTERPLAN

STAGE 1A - CARPARK



1 DETAIL - CARPARK DESIGN
Scale: 1:500

LEGEND

- BOUNDARY LINE
- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO BE RETAINED
- PROPOSED TREE PLANTINGS
- MASS PLANTING
- RAIN GARDEN WITH NATIVE GRASS PLANTING
- TURF
- DECOGRANITE
- EXISTING CONCRETE PATH TO BE RETAINED
- CONCRETE SURFACE
- EXPOSED AGGREGATE
- PROPOSED ROAD

NOTES

1. Endemic vegetation to reinforce the drainage channel and create a vegetated edge while providing screening to residences to the south. Sightlines retained beneath canopy planting with low grasses and shrubs 10 1m high planted beneath
2. Canopy planting in carpark to reduce heat island effect
3. 2.3m wide detention swale provides passive irrigation with planting of endemic grassses and canopy trees above
4. Detention swale to southern carpark interface for excess water capture on site. To be planted with endemic and native detention species.
5. Existing share path to the south to be retained

north

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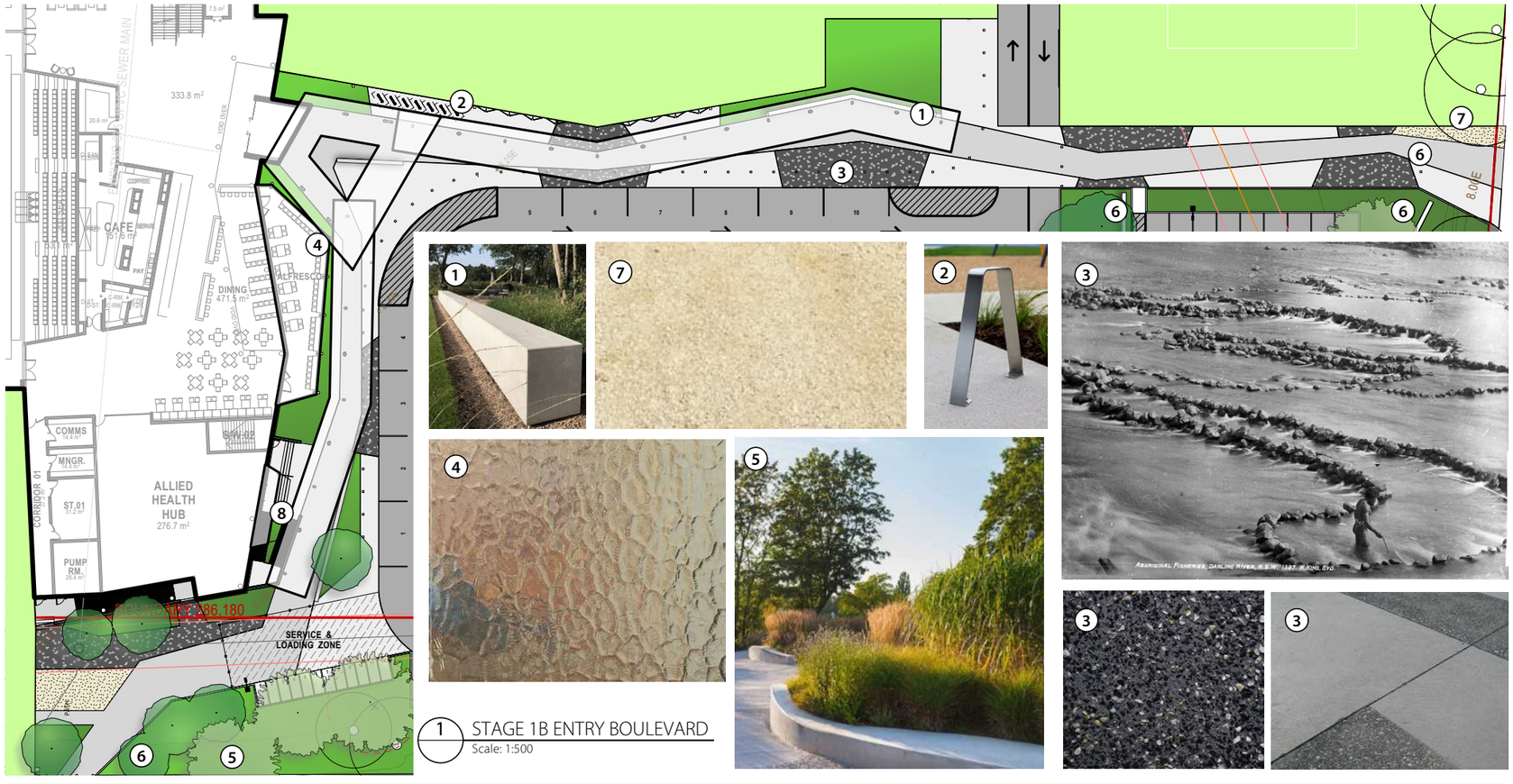
03 MASTERPLAN

STAGE 1B - ENTRY BOULEVARDE



1 STAGE 1B ENTRY BOULEVARD
Scale: 1:500

LEGEND

- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO BE RETAINED
- PROPOSED TREE PLANTINGS
- MASS PLANTING
- RAIN GARDEN WITH NATIVE GRASS PLANTING
- TURF
- DECOGRANITE
- EXISTING CONCRETE PATH TO BE RETAINED
- CONCRETE SURFACE
- EXPOSED AGGREGATE
- PROPOSED ROAD
- SOFTFALL

NOTES

1. Paved brick feature section as opportunity for donation brick to First Nations development. Blade in-situ concrete walls as informal seating with skateboard deterrents.
2. Angular bicycle racks to match form of building
3. Manipulation of footpaths through matieral differentiation, inspired by manipulation of landscape for indigenous fishtraps
4. Covered awning to entry boulevard to provide covered pedestrian walkway and frame entry building. Opportunity for First Nations design insertion to treatment of fritted or manipulated glass sections.
5. Endemic and native vegetated mass planting beds
6. Wayfinding signage to guide users through journey of site. Opportunity for First Nations design insertion.
7. Decogranite portion to path to enable retention of existing tree
8. Entry to Allied Health Hub. DDA complaint.

north

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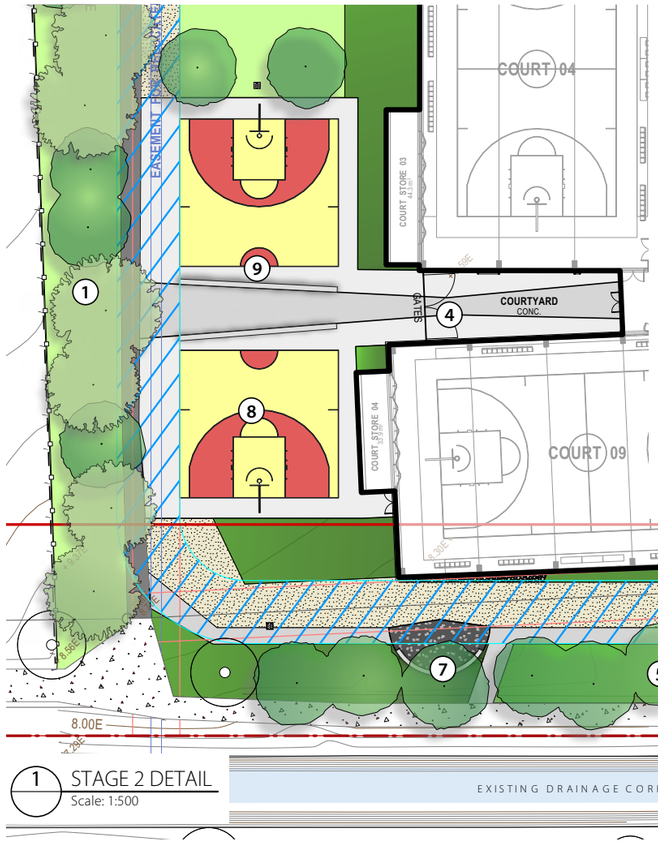
03 MASTERPLAN

STAGE 2 - ACTIVATION ZONES



1 STAGE 2 DETAIL
Scale: 1:500

LEGEND

- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO BE RETAINED
- PROPOSED TREE PLANTINGS
- MASS PLANTING
- RAIN GARDEN WITH NATIVE GRASS PLANTING
- TURF
- DECOGRANITE
- EXISTING CONCRETE PATH TO BE RETAINED
- CONCRETE SURFACE
- EXPOSED AGGREGATE
- PROPOSED ROAD
- SOFTFALL

NOTES

1. Western boundary screening trees in turf provides extra shade to upgraded pedestrian pathway while providing habitat
2. 6m easment for fire truck access around site
3. Public exercise equipment off share path to promote active lifestyle and opportunity for activation zone.
4. Pedestrian link into site
5. Endemic mass planting beds with native and endemic trees
6. Wayfinding signage through site to encourage and direct journey through space
7. Off form green concrete seating wall provides opportunity for teams to gather external to the competition environment with passive viewing to the High Performance Training court.
8. Basketball half courts accessible off share path to promote public, outdoor, recreational activity. Potential colours to be representative of Aboriginal Flag in celebration of Newcastle City Council history
9. Concrete blade walls as divider of spaces and informal seating
10. Blade in-situ concrete walls as informal seating with skateboard deterrents in circular form for teams to gather outside of competition environment

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6.6 Building Services Strategy

As part of the conceptual stage, the Design Team has undertaken a review of authority requirements, considered and applied relevant standards to develop conceptual building services strategies for the building. Collaboration with the services consultants has allowed EJE architects to develop initial spatials, with various iterations presented as the architectural design formed. These spatials represent where the building services plant and equipment are to be located. From these spaces, elements such as ductwork, pipework, cables and the like would make their way via risers for distribution onto each floor to connect relevant building services components.

Electrical systems considered include general lighting, power and distribution, emergency lighting and exit signage, fire alarms, security, communication, access control, DAS and risers to accommodate these services. Coordination has also been undertaken with our ASP-Level 3 engineer for the kiosk substation location and transformer capacity and design.

Fire Protection systems nominated are fire sprinklers, fire hydrants and hose reels. Initial hydraulic computation has indicated that the town main system may need to be amplified to satisfy the pressure and flow requirement for a DtS approach. Discussion with the fire engineer will progress to close out any alternative solution requirements beyond DtS.

Hydraulic services will facilitate domestic cold water supply throughout the building, stormwater, sewer drainage and trade waste pipework would connect these services to the authority network outside the property boundary. Rainwater reuse systems including above ground tanks, pumps, filtration & disinfection equipment will be further developed.

Mechanically to assist with spatial planning and guided by various stakeholder feedback the mechanical consultant explored 3 mechanical system options, (i) Large externally mounted rooftop AHU plant, (ii) VRF system with multiple indoor units, and (iii) External packaged units mounted externally.

Engagement with the ESD consultant to provide an understanding of efficiencies and stageability associated with each mechanical HVAC option determined the AHU system to provide the best whole of life solution for the show courts. The mechanical system will be further developed during the detailed design phase.

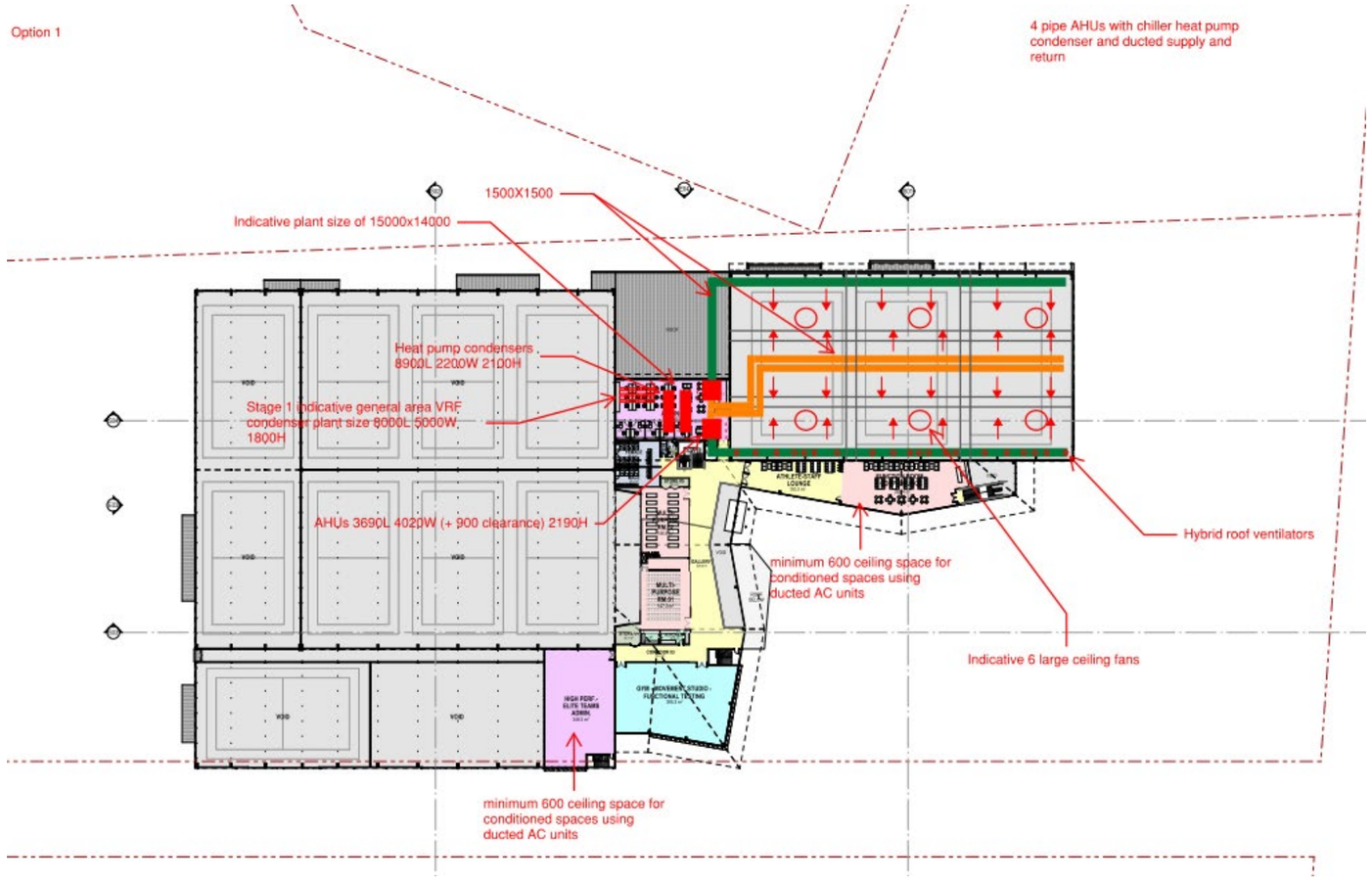


Figure 49: Show Court Mechanical Concept

6.7 ESD Summary

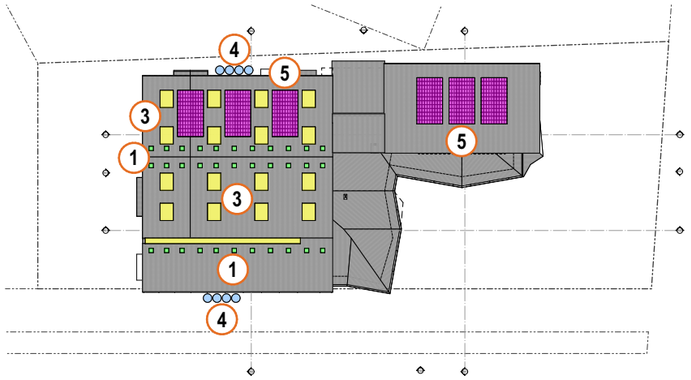
The project sustainability strategy incorporates mandatory and voluntary sustainability targets including:

- Compliance with National Construction Code 2022.

Project initiatives cover the following sustainability areas:

- Responsible construction and management
- Healthy and comfortable buildings
- Resilience
- Low upfront carbon emissions
- Energy efficiency
- Powered by renewable energy
- Low potable water consumption
- Placemaking and contribution to the livability of the surrounding urban context
- Inclusive building design and construction practices
- Biodiversity enhancement and protection
- Waterway protection
- Leadership

Discipline workshops have been held with the key consultant team disciplines to provide clarity regarding the overall ESD initiatives and to mitigate potential risks in achieving the rating requirements and suitability to the project as the design develops.



LEGEND

- CROSS-VENTILATION PATHS
- AIR EXTRACTION FANS
- NATURAL DAY-LIGHTING
- TRANSLUCENT ROOFING
- RAINWATER HARVESTING TANKS
- SOLAR PV PANELS

COMMENTS

1. - INCORPORATION OF CROSS-VENTILATION PRINCIPLES INTO THE PLAYING COURTS, VIA LOW-LEVEL EXTERNAL FACADE LOUVRES & HI-LEVEL EXTRACTION FANS.
2. - INCORPORATION OF NATURAL SOUTHERN DAY-LIGHTING PRINCIPLES INTO THE PLAYING COURTS.
3. - INCORPORATION OF TRANSLUSCENT ROOFING FOR NATURAL DAY-LIGHTING INTO THE BACK-COURTS & CIRCULATION SPINE.
4. - RAINWATER HARVESTING TANKS FOR ON-SITE RE-USE IN TOILETS & EXTERNAL LANDSCAPING IRRIGATION.
5. - INCORPORATION OF SOLAR PV PANELS & EV CHARGING CAPABILITIES.
6. - HIGH EFFICIENCY / WELL INSULATED BUILING ENVELOPE, INCLUDING GLAZING
7. - ENERGY EFFICEINT HOT-WATER SYSTEMS
8. - MULTI-PURPOSE PLAYING COURTS (e.g. BASKETBALL, NETBALL, INDOOR SOCCER/FOOTBALL, VOLLEYBALL, PICKLE-BALL, & WHEELCHAIR TEAM SPORTS), ASSIST IN REDUCING ENVIRONMENTAL IMPACTS THROUGH BUILDING-USAGE EFFICIENCIES.
9. - RETRACTABLE SHOW-COURT SEATING CAPABILITIES, AGAIN ASSISTS IN REDUCING ENVIRONMENTAL IMPACTS, THROUGH BUILDING-FOOTPRINT EFFICIENCIES.
10. - EFFICIENT DESIGN APPROACH REGARDING CONSTRUCTION METHODOLOGIES & STAGING, & MATERIAL SELECTIONS, AGAIN ASSIST IN REDUCING ENVIRONMENTAL IMPACTS, THROUGH BUILDING-DESIGN EFFICIENCIES.

NET ZERO TARGET APPROACH

A - **LOW CARBON MATERIALS** (REDUCE EMBODIED CARBON) -
- EVALUATING MATERIALS THROUGHOUT THE PROJECT TO MINIMISE CARBON CONTENT WHERE POSSIBLE.

B - **OPERATIONAL CARBON** (REDUCE ONGOING/-VE LOAD) -
- USE PASSIVE/NATURAL VENTILATION OPTIONS TO MINIMISE AIR CONDITIONING ENERGY.
- EFFICIENT BUILDING ENVELOPE (i.e. INSULATION; SEALING; REFLECTIVE COLOURS/SURFACES; & GLAZING ORIENTATION/PROTECTION).
- CONSIDERATION FOR LIFE-SPAN OF SERVICES & MATERIALS.
- CONTROLS TO HELP MAXIMISE THE EFFICIENCY OF THE BUILDING & IT'S SERVICES.
- ON-SITE GENERATION THROUGH SOLAR PANELS.

C - **OFFSET** (MAKE-UP RESIDUAL LIFE-CYCLE CARBON EXTERNALLY)
- AS A LAST RESORT, AFTER CONSIDERING THE WHOLE-OF-LIFE CARBON FOOTPRINT OF THE BUILDING, IT IS POSSIBLE TO OFFSET THE RESIDUAL CARBON THROUGH OTHER INITIATIVES ON-SITE (e.g. TREE PLANTING) OR WHERE NECESSARY THROUGH OFF-SITE VERIFIED SCHEMES.

Figure 50: Sustainable Design Strategies

7. Environmental Amenity

7.1 Solar Access Analysis

The proposal has been particularly designed to minimise any overshadowing of external public amenities or adjoining residential areas. Shadow diagrams provided indicate no impact on any adjoining amenity.

In addition Solar access within the building has been carefully reviewed to ensure suitability for the playing spaces with regards to glare and hot spots. Shading devices have been employed to ensure direct sunlight accessing the playing court surface is controlled whilst still maintaining the transparency of the proposal from the external public realm.

Refer to solar access analysis diagrams in 'Appendix A' for full details of the impact of the proposed development on surrounding properties. The proposed building massing has minimal impacts on the surrounding context, given it is surrounded by roads to the west, south and north. The overshadowing of surrounding property boundaries created by the proposed development occurs between 9am and 12pm on the Winter Solstice.

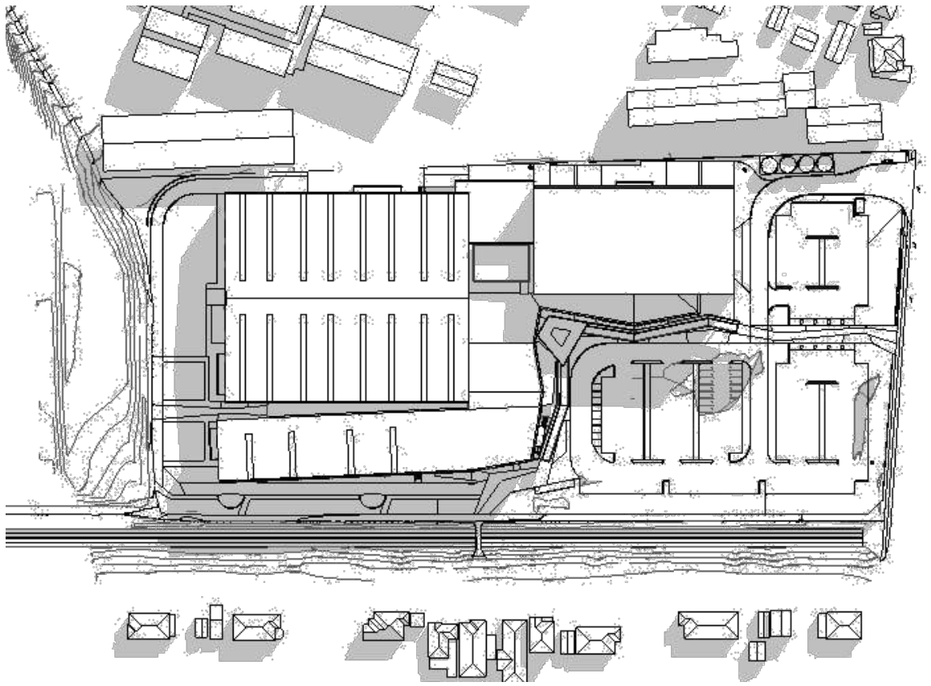


Figure 51: Overall Shadow Diagram - 9am June 21st

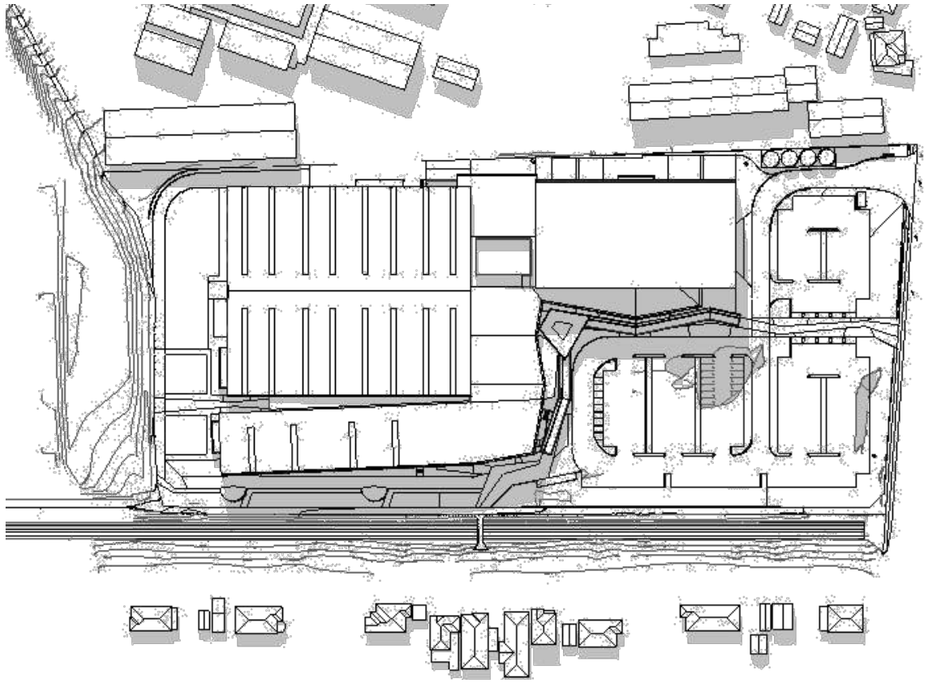


Figure 52: Overall Shadow Diagram - 12noon June 21st

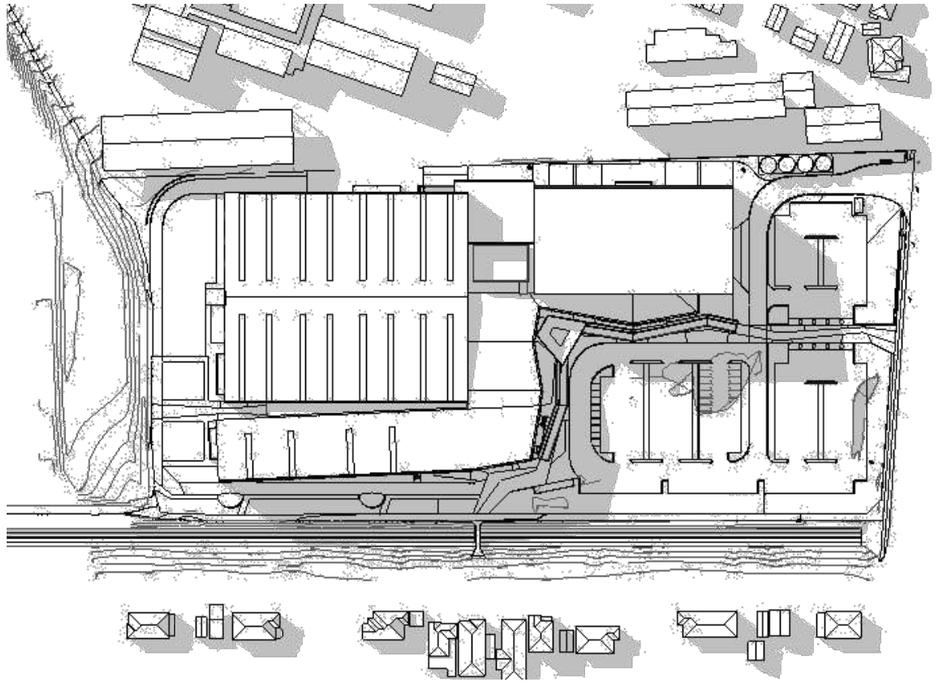


Figure 53: Overall Shadow Diagram - 3pm June 21st

7.2 External Environmental Amenity

7.2.1 Visual Amenity & Privacy

Refer to the Visual Impact Assessment prepared by Terras Landscape Architects for this submission.

7.2.2 Access To Landscape & Outdoor Spaces

The building has been designed to take into consideration the sites constraints especially with respect to flooding and flood storage and staging. This has allowed for an "L" shaped form to be developed where common circulation spaces and function/ multi-purpose spaces have been located to take advantage of the connection to the external environment. A breakout alfresco dining area has been located off the café area providing a strong connection and level of interaction to the public forecourt.

Landscape zones have been brought to the façade edge in places to improve that sense of connectivity, whilst windows which form erosions within the façade provide connection to the external built environment from the internal playing spaces and high-performance wing.

Within the landscape design a series of meeting and gathering spaces have been included, developing on from discussions with the LAC and NBFNWG. The building façade takes its cues from the sites original uses and the surrounding topography in particular Mt Sugarloaf (Keepa Keepa) and Nobbys (Whibayganba) with the façade form been interpreted as escarpments that have been eroded and changed through exposure to wind and rain. Windows have been included within these erosions to capture views to the external environment.

The buildings external form, in particular the common foyer space, has been faceted to incorporate movement and articulation that has been developed in conjunction with the landscape design to provide a harmonious and connect built form and landscape environment. This concept was developed from the earliest discussions and cultural training day undertaken by the design team.

For further detail refer to the Landscape Design Report prepared by Terras Landscape Architects as part of this EIS submission.

Figure 54: 3D Render - Approach View

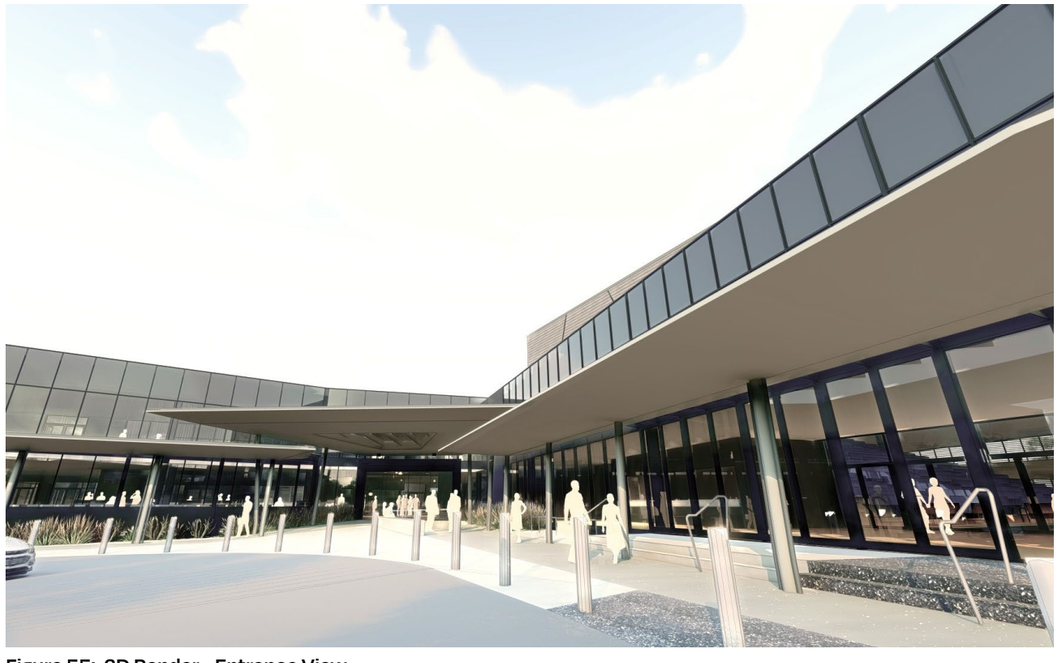


Figure 55: 3D Render - Entrance View

7.2.3 Pedestrian Movement Across the Site

The proposed development features a number of pedestrian entry points into the site. The primary entry point to the site is located along the forecourt promenade and links the facility directly to Turton Road, and the other sporting facilities within this precinct beyond.

A secondary pedestrian access from Monash Road on the southern boundary across the existing pedestrian bridge, linking the existing cycle/ pedestrian way links to the forecourt and the main entry. These access points have been delineated with an overhead canopy roofs, that is articulated to reflect the movement within the landscape and built form, that provide clear directional access to the main entry. The pedestrian access from Monash was further refined post SDRP meeting to reduce the conflict between the service areas of the facility and this pedestrian access point. All service areas and bin enclosures have now been contained within the built form.

The main entry has been further emphasised through a raised roof section, punctured with fritted and patterned glass providing a light and bright main entry statement. All frontages of the proposal are linked to the main entry, and Allied Health entry, via access compliant ramps or walkways.

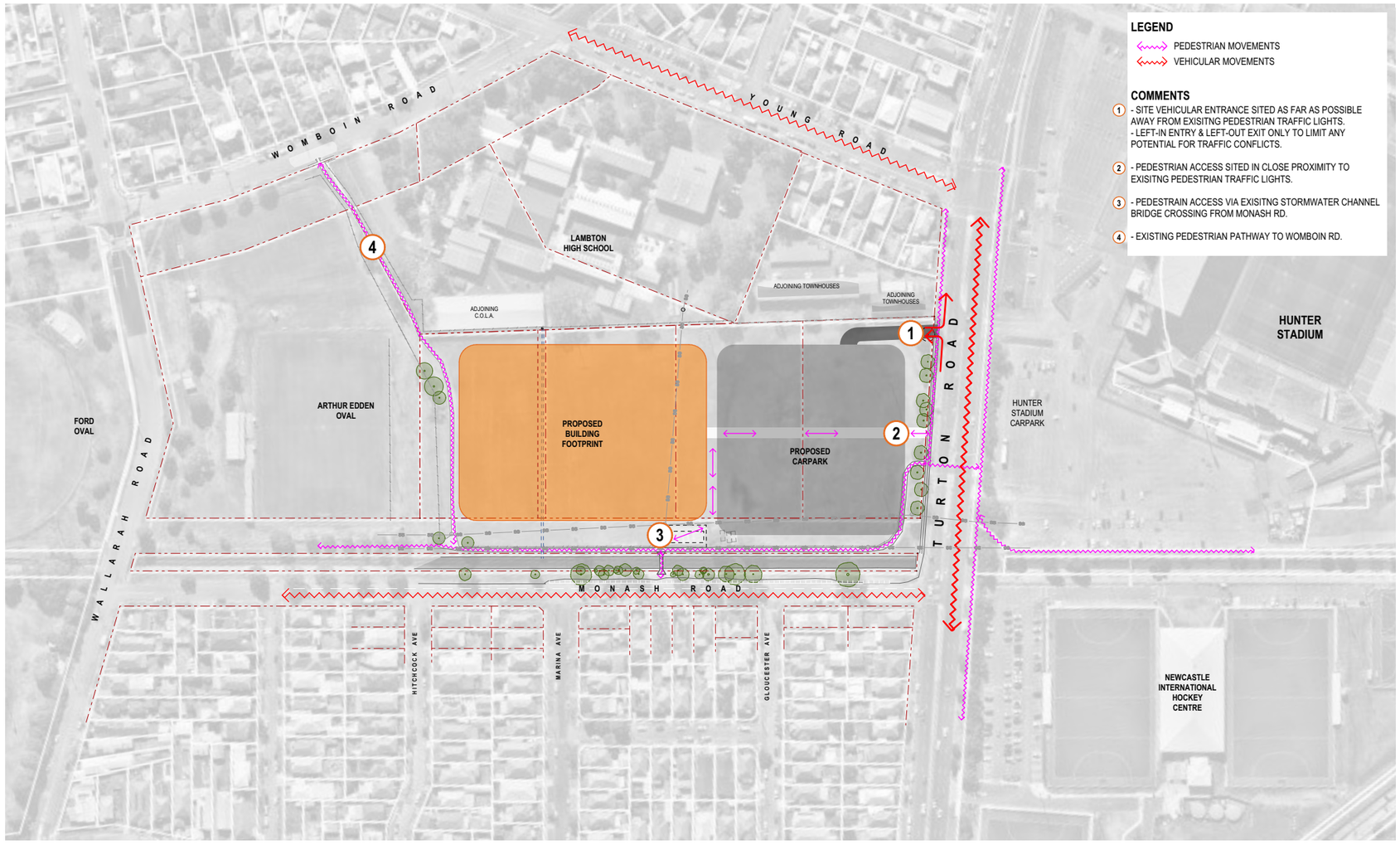


Figure 56: Site Analysis Response Plan - Traffic

Figure 57: 3D Render - Pedestrian Entry Promenade .1

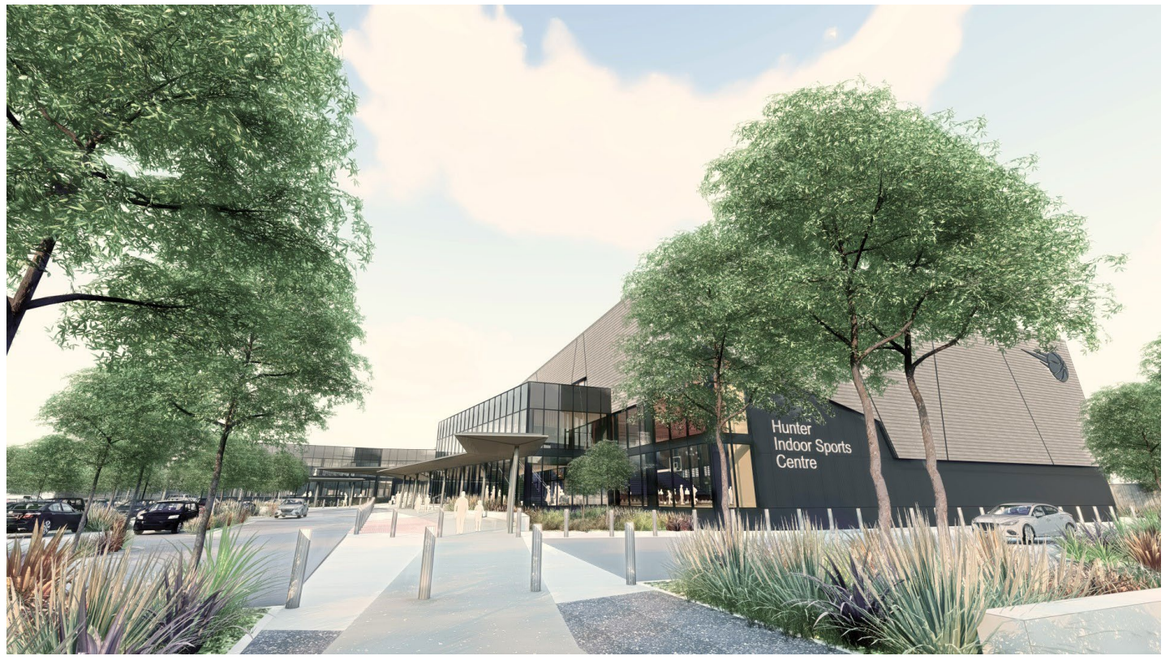


Figure 58: 3D Render - Pedestrian Entry Promenade .2

Figure 59: 3D Render - Pedestrian Entry Promenade .3

Figure 60: 3D Render - Pedestrian Entry Promenade .4

7.3 Internal Environmental Amenity

7.3.1 Visual Amenity & Views

The L-shaped floor plate of the proposed building maximises the opportunity for internal spaces to have views of the surrounding Newcastle context. Internal circulation spaces have all been designed to have a strong visual connection to the outside environment. Internal playing areas are also linked either via overhead skylights or windows directly providing connection to the external landscape and natural environment.

Internally, connections between playing spaces and breakout areas have been increased to allow for visual connection and interaction whilst also allowing the breakout spaces and multi-purpose areas to have connection to the playing environment. This was further developed after the SDRP meeting.

At Ground Level, the public foyer, café and showcourt lobby wrap around the forecourt allowing a close connection between the internal and external environments with additional view through to the playing areas heightening that sense of inclusiveness to the general public. The southern and western facades have also been opened up to the public realm whilst the north western corner of the facility has been punctured to provide a strong visual connection to Lambton High School.

7.3.2 Interior Concepts

The new HISC facility will deliver a world class indoor sporting facility. Interior concepts will be reflective of the building typology providing a light, bright, inviting interior that still provides a level of personal warmth and comfort.

The building fit-out and interior design will be undertaken in close consultation with the Newcastle Basketball to service the various functional requirements of the building occupancy. Key principles of flexible floor plates, durable finishes, intuitive wayfinding, and a vibrant and welcoming environment will underpin the development of the interior concepts.

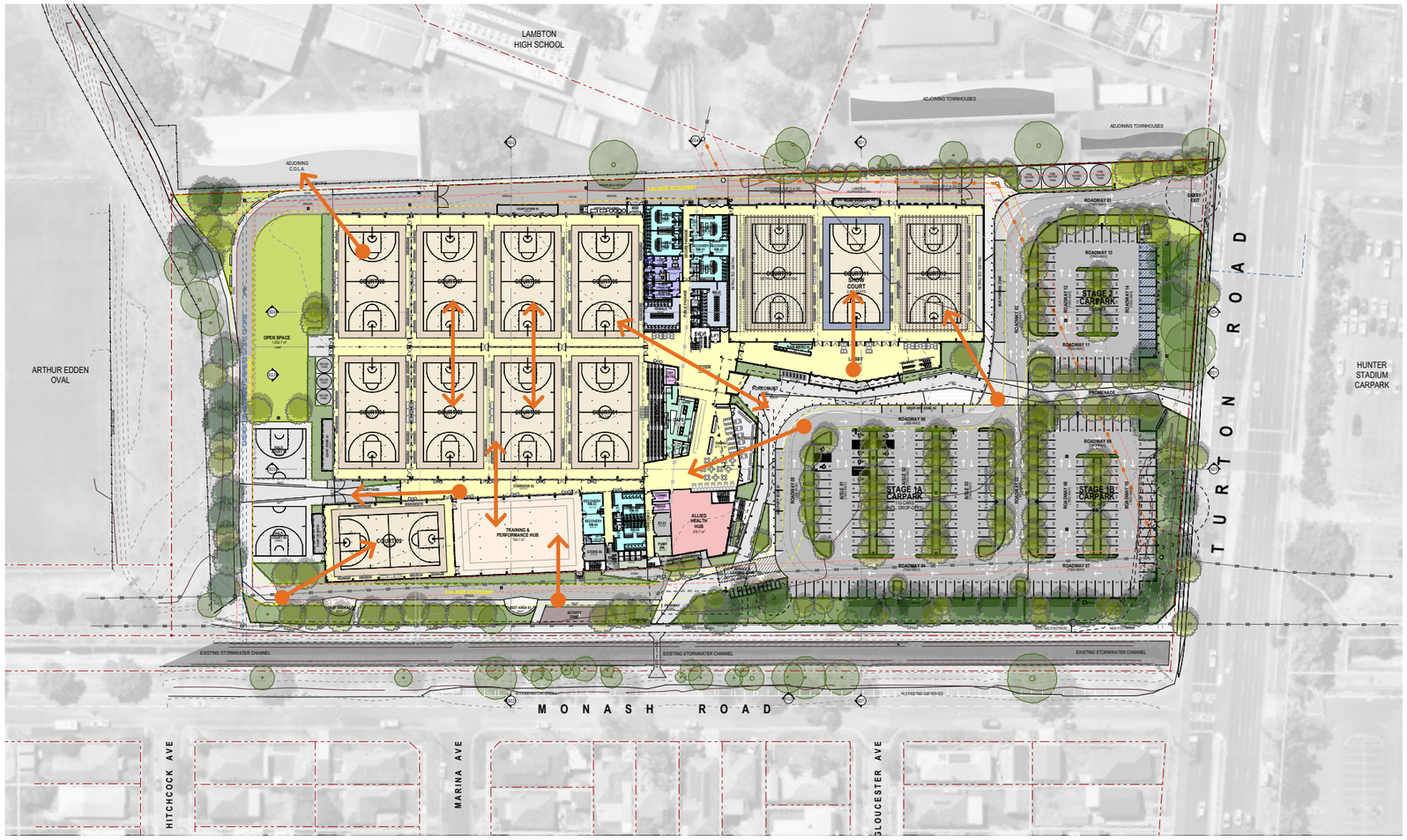


Figure 63: Overall Ground Floor Plan

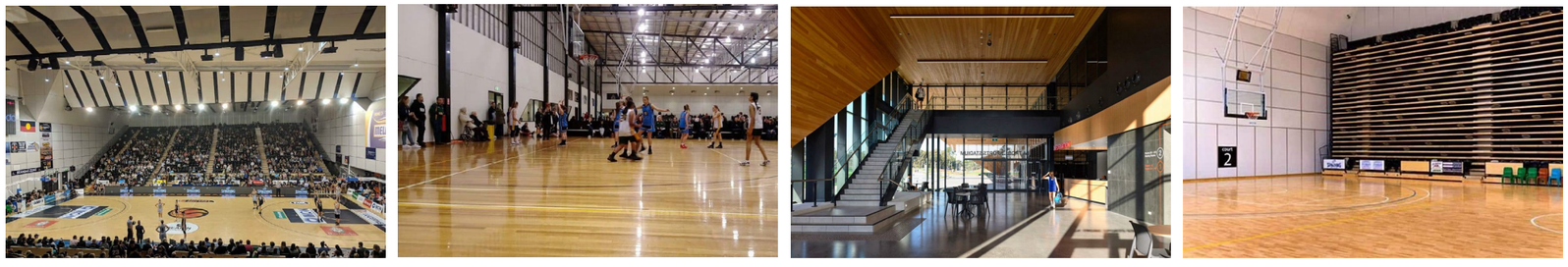


Figure 64: Building Typology - Internal

7.3.3 Access to Natural Daylight & Ventilation

To capitalise on internal access to natural daylight, the design team undertook testing of various planning arrangements of the building footprint and in particular the common public circulation and breakout zones. The main common circulation spaces wrap themselves around the forecourt of the building allowing for a high level of interaction and connectivity between the internal and external areas of the site and providing for a high-level amenity whilst also allowing the user to always orient themselves and connect to the external environment.

Further development of the spatial planning post feedback from the SDRP have also increased the level of accessibility to natural daylight and the external landscape environment. The built form has been split and the high-performance wing angled to allow the internal corridor to be more welcoming with access to natural light at each end with the opportunity for overhead skylights further enhancing the amenity of this area.

In addition, transparency between zones within the facility has also been increased allowing for greater amenity and connectivity for the user. This has been achieved through changes to the proposed building classification with the facility being designed as a large isolated building removing the requirement for internal fire compartments, allowing for additional glazed elements to be implemented increasing connectivity from the breakout and circulation zones as well as from within the rear community court hall.

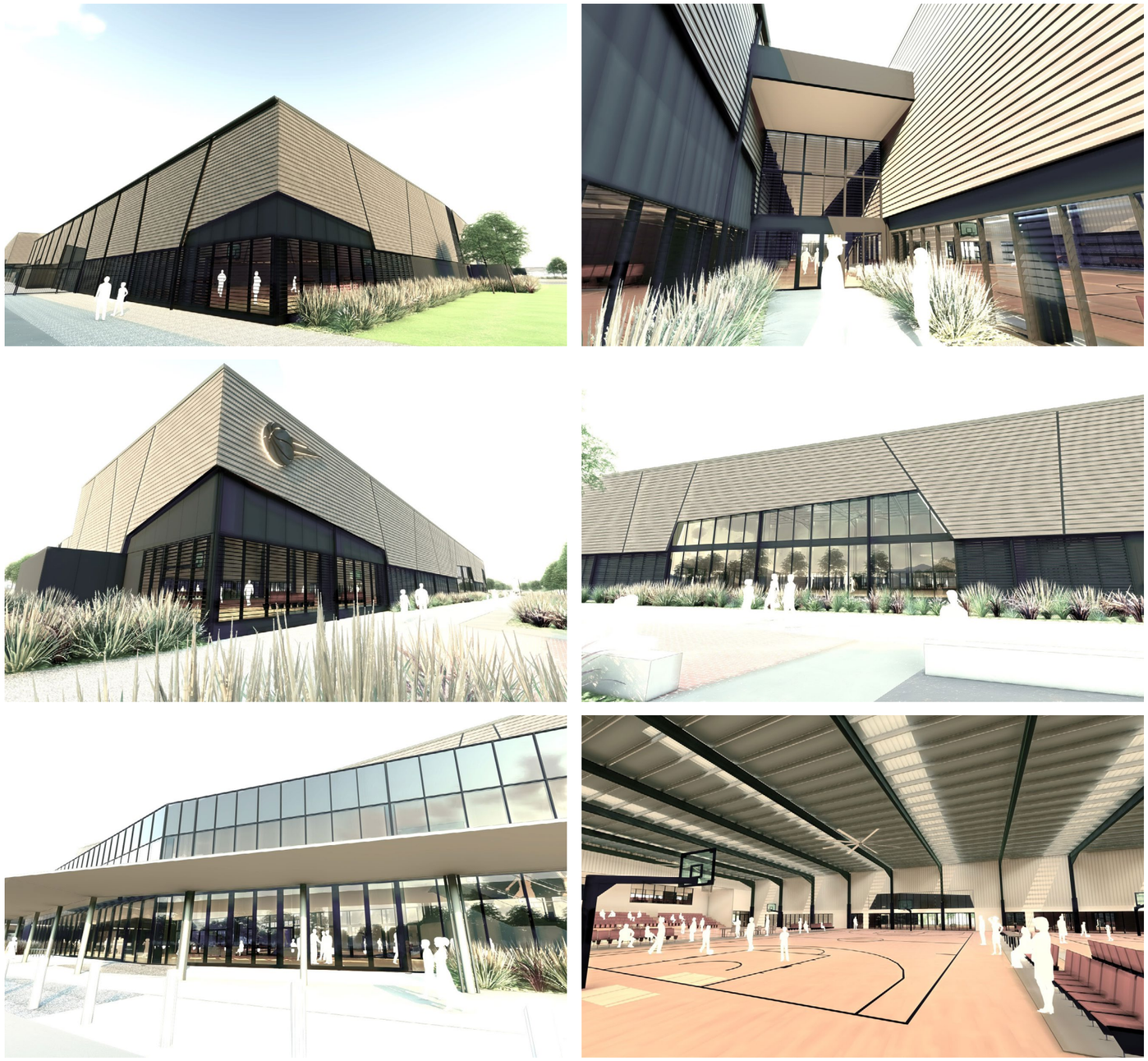


Figure 65: Building Transparency Connection between Internal and exterior spaces

8. Public Space

8.1 Public Space Principles

The project approach to Urban Design and Landscape Architecture creates Public Open Space that:

- Provides a range of welcoming outdoor spaces that draw the community in offering amenities, comfort as well as connection to nature, shade and sunlight, prospect and sanctuary, learning and engagement.
- Is flexible and adaptable for users, facilitating multiple activation 'modes', both passive and active and offers exceptional public and user experience opportunities.
- Provides a Streetscape interface proposing high-quality paving, street tree canopy cover, pedestrian safety, ESD and WSUD initiatives and seating amenity. It is a Streetscape that is a place of both activation and comfort where users can dwell, connect and engage.
- Embraces, embeds and facilitates biodiversity, connection to nature and clear ESD and WSUD innovation and initiatives.

For further detail refer to the Landscape Design Report prepared by Terras Landscape Architects as part of this EIS submission and Landscape Materials contained within Section 5.4.

Figure 66: Public Space Concepts

Appendix A - Architectural SSDA Submission

Nominated Architect: Bernard Collins 4438 (NSWARB)

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