



SUSTAINABILITY

# Hunter Indoor Sports Centre

New Lambton, Newcastle 2305

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**PREPARED FOR**  
EJE Architecture  
412 King Street  
Newcastle NSW 2300

# Sustainability – ESD Report

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# 1. Introduction

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Northrop Consulting Engineers has been commissioned by Basketball Association of Newcastle Ltd (BANL, the Proponent), to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support the Response to Submissions (RTS) and Amendment Report for State Significant Development Application (SSD-65595459) for the proposed Hunter Indoor Sport Centre (HISC) at 2 Monash Road and 24 Wallarah Road, New Lambton. SSD-65595459 sought development consent for an indoor stadium, amenities and associated civil and landscaping work

*The Amendment Report seeks changes to the original development proposal SSD-65595459.*

*The key project amendments include moving the building footprint and carpark west, adding turfed open space near Turton Road, and shifting the access driveway south. The realigned pedestrian promenade within the carpark includes a bridge over the open space.*

*The height at the south-eastern corner of the building will be increased to provide flexibility to use the upper level of the building for gymnastics and other activities, there are also minor internal reconfigurations to fit the revised footprint.*

*Within the public domain works include widening the Turton Road footpath, adding pedestrian safety fencing, and retaining the existing cycle/pathway on the south eastern corner of the site. The landscaping and public domain changes mean that four trees on the Turton Road frontage (previously proposed to be removed) can now be retained.*

*On the southern edge of the site, landscaping elements have been removed. Space is provided for the future expansion of pedestrian / cycleway route along this corridor (works to be delivered by others).*

*The active recreation area, including a half basketball court, has been deleted from the proposal.*

*Development consent is sought for the entire proposal, with the flexibility to deliver the project in two construction and operational stages.*

These changes do not materially alter the sustainability approach addressed within this report, which outlines how this development addresses the requirements outlined in the Sustainable Buildings State Environmental Planning Policies (SEPP) 2022 and the Newcastle Development Control Plan 2023 (DCP). In demonstrating these outcomes, the project proposes, but is not limited to, the following key Ecologically Sustainable Development (ESD) measures to support the overall achievement of the desired sustainability outcomes:

- Water Sensitive Urban Design principles
- Considerate site layout and design to enable building user comfort
- Low embodied emission materials
- High efficiency electrical systems
- High performance fabric and glazing
- Water efficient fixtures and fittings
- Rainwater capture and reuse
- Site specific stormwater strategy
- Waste management and minimisation strategies
- Considered vegetation and plant selection and design to encourage biodiversity and land resilience

Through the implementation of the initiatives noted in this report, the proposed development addresses, and endeavors to mitigate against negative environmental, social, and economic impacts associated with the site, demonstrating alignment with the DCP and Sustainable Buildings SEPP 2022.

### **1.1 Limitations**

Due care and skill have been exercised in the preparation of this report.

No responsibility or liability to any third party is accepted for any loss or damage arising out of the use of this report by any third party. Any third party wishing to act upon any material contained in this report should first contact Northrop for detailed advice, which will consider that party's requirements.

## 2. The Proposal

This ESD report supports the Environmental Impact Statement (EIS) and State Significant Development Application (SSDA) that seeks consent for the proposed Hunter Indoor Sports Centre. The proposed development will consist of a new basketball complex to facilitate twelve new basketball courts for the Basketball Association of Newcastle. The complex will contain the standard amenities required to support the functions and activities including:

- Bathrooms
- Change rooms
- A kiosk
- Front office and back of house office areas
- Storage areas

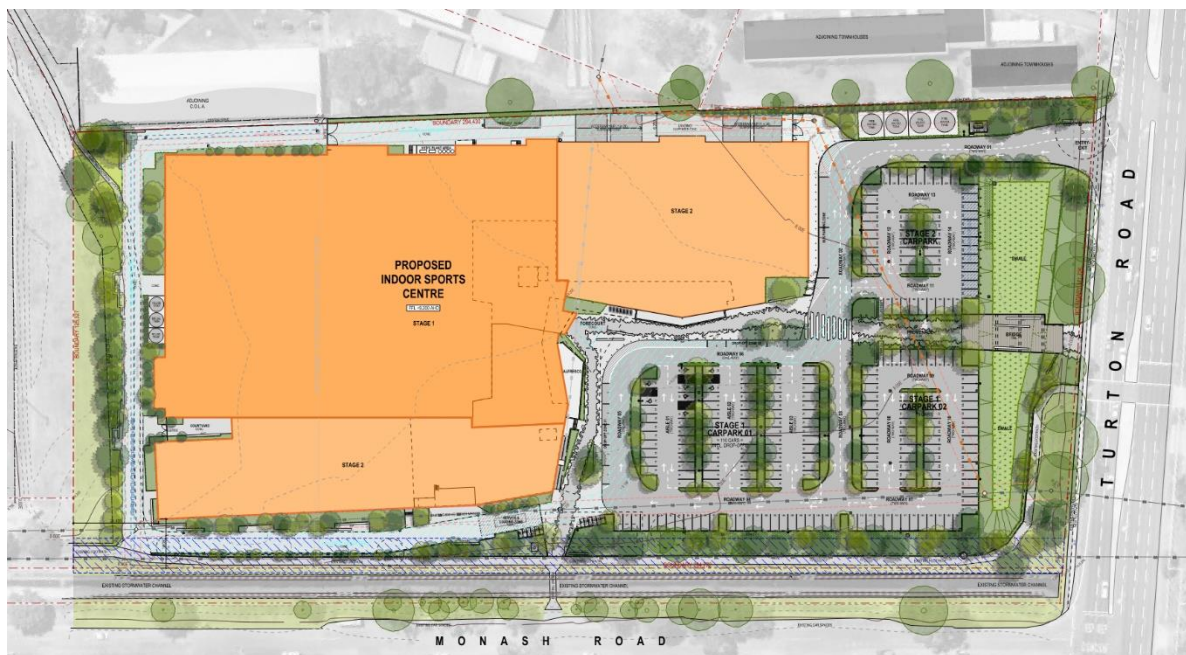


Figure 1 Site plan

Source: EJE Architecture

## 2.1 The Site

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
- Lot 1 DP1304081

The site is identified in the figure below.



*Figure 2 Site aerial. Source: Google Maps*

## 2.2 SEARS Response

Item	Report Location
Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are to be incorporated in the design and ongoing operation of the development.	Section 3.1.1, Section 3.2
Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards and integrate environmental performance standards.	Section 3.1.1
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	Section 3.1.2, 3.1.4, Section 3.3, Appendix A Net Zero Statement

## 2.3 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, Lot 2377 DP755247, and Lot 1 DP1304081 Amenities block land.
Site Area	The site has an area of 37,724.1m <sup>2</sup> .
GFA	Indicative GFA of up to 17,700m <sup>2</sup> , comprising ground floor of approximately 15,300m <sup>2</sup> and first floor mezzanine of 2,400m <sup>2</sup> .
Proposed Car Parking Spaces	240 car parking spaces.
Hours of Operation	The complex will operate 7 days a week from 6am -11pm.
Staging	<p>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:</p> <p><b>Stage 1</b></p> <ul style="list-style-type: none"> <li>• 8 x sports courts, amenities to support the functioning of the complex including bathrooms, changing rooms, lobby and foyer, retail tenancy and café.</li> <li>• Mezzanine level: multipurpose rooms and administrative space.</li> <li>• Car park with 185 spaces, drop-off spaces and bus parking.</li> </ul> <p><b>Stage 2</b></p> <ul style="list-style-type: none"> <li>• Extension to the northern and southern sides of the existing building with total additional GFA of approximately 7,180m<sup>2</sup> comprising:</li> <li>• Extension to the eastern side of the building to add 3 x courts including show court with retractable grandstand seating for 2,500 people over the 2 adjacent courts.</li> <li>• Extension to the southern side of the building to provide 1 x court plus high-performance training area.</li> <li>• Extension to the mezzanine to provide function rooms, administration space and training space/ gymnasium.</li> <li>• Expansion of existing car park to provide 240 spaces</li> </ul>

Element	Proposal
	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.
Employment Numbers	Construction - 267 Operational - 150.
Expected CIV	Over \$30 million.

### 3. Ecologically Sustainable Development

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The following section describes how ESD principles (as defined within clause 193 of the Environmental Planning and Assessment Regulation 2021) are being incorporated in the design, construction, and operation phases of the project. These initiatives illustrate how the project addresses the following;

- The precautionary principle – through the implementation of environmental management and an assessment of the development’s operational growth and adaptability, the proposed development management attempts to incorporate resilience, and future-focus into the site’s design. The concept behind the precautionary principle is to create features that can both; adapt to changes, which may eventuate in the future, and avoid the risk of serious or irreversible damage to the environment. The inclusion of drought tolerant landscaping and Water Sensitive Urban Design demonstrate a commitment to building a resilient environmental site.
- Inter-generational equity to ensure that the health, diversity, and productivity of the environment are maintained or enhanced for the benefit of future generations – through the intended inclusion of zero ozone-depleting refrigerants during the design of services, best practice PVC for pipes and low-impact housing materials within the project design requirements, alongside a focus on providing greater endemic native vegetation to support the development’s connection with nature. Furthermore, accessibility is accounted for through the commitment to a developed Green Travel Plan.
- Conservation of biological diversity and ecological integrity – through the aimed planting of endemic natives throughout open space and road reserve areas, vegetation, design of water cycle pathways which include filtration and Water Sensitive Urban Design principles, the development will act to improve, conserve, and support the local biological diversity and integrity.
- Improved valuation, pricing, and incentive mechanisms - the design process should incorporate these to ensure that the development stays within budget and thoughtfully considers environmental factors across the design options.

Through the inclusion of the above and the sustainability initiatives outlined within this report EJE Architecture addresses the ESD Principles into the design, construction and operation of the development as defined within clause 193 of the Environmental Planning and Assessment Regulation 2021. Further details of the general sustainability initiatives are outlined below.

### **3.1 Energy Efficiency**

Energy efficiency is considered throughout the development with the following improvements. The development exemplifies energy efficiency efforts by possessing a great capacity for solar PV installation on its roof areas. Further provisions for energy efficiency include energy-efficient lighting, fixtures and electric vehicle and bicycle charging stations. The measures outlined in the following section demonstrate how the nominated design elements will reduce the development's grid electricity demands.

#### **3.1.1 Improved Building Fabric and Glazing Performance**

Hunter Indoor Sports Centre aims to use high performance insulation, fabric, and glazing, prioritizing the comfort of occupants in the building. The design will incorporate provisions for natural and mechanical ventilation, ensuring compliance with NCC 2022 requirements. The glazing will be installed with an aim to allow for natural light whilst mitigating intense glare during daylight hours, but also aiding in controlling heat transfer to maintain optimal indoor temperatures for heating and cooling purposes.

#### **3.1.2 Energy Efficient Equipment**

The project will place a preference on energy and water-efficient equipment and services. The use of higher star-rated refrigerators, dishwashers, and other major equipment will directly reduce the site's energy demand. The use of higher WELS-rated fixtures and fittings will indirectly reduce energy demand by reducing hot water demand and use throughout the site. Lighting systems are required to use LED lights, with motion sensors and timers for the where applicable. Furthermore, solar panels will be installed, contributing to the electrical system and powering equipment such as the lighting in external and internal areas.

This initiative is cost-effective and concurrently aligns with the development's objectives for energy efficiency.

#### **3.1.3 Environmentally Friendly Refrigerants**

All mechanical systems across the development will use Environmentally friendly refrigerants to minimise global warming potential and ozone depletion potential. The use of refrigerants, such as hydrocarbons (HCs), are used in refrigeration and air conditioning systems, absorbing, and releasing heat to allow for spaces or substances to cool.

#### **3.1.4 Low Impact**

The project aims to minimise embodied energy by avoiding unnecessary use of materials and procuring materials with a low carbon footprint where appropriate. During construction works, there will also be a focus on optimizing the use of available materials on-site to reduce transportation needs. In cases where the necessity arises for off-site materials, preference will be given to locally sourced options where feasible.

## **3.2 Indoor Environment Quality**

Indoor environment quality is an important consideration for the building occupants, therefore priority has been placed on providing occupant comfort through considering the various scenarios of where solar access, prevailing wind directions and precooling of air can help to foster the creation of comfortable spaces. The following considerations have been included as part of the design:

### **3.2.1 Daylight Access**

Daylighting systems are to be integrated throughout the internal and external areas, to support the admission of natural light and direct sunlight throughout especially during Winter and particularly in areas that are regularly occupied. An integrated daylight approach improves the well-being of occupants and workers by creating a visually stimulating and productive environment.

### **3.2.2 Indoor Air Quality**

Ensuring sufficient indoor air quality in office spaces is crucial for the health and well-being of occupants. This design aims to optimize energy efficiency, enhance natural lighting, and minimize heat gain to ensure occupant comfort. Furthermore, measures were taken to facilitate cross ventilation, including careful placement, sizing, and location of openings to promote the natural flow of air throughout the building.

### **3.2.3 Material selection**

The selection of materials is focused on enhancing the indoor environment of development buildings. Preference is given to materials with low levels of volatile organic compounds and formaldehyde content to reduce respiratory issues for workers.

## **3.3 Water Efficiency**

Efforts to improve water efficiency have been considered through a comprehensive management plan within the development. This includes initiatives aimed at lowering potable water demand and associated energy consumption. On-site rainwater re-use systems will ease the burden on traditional water sources and avert harm from wastewater discharge. These efforts are guided by a dedication to safeguard water quality, protect the native flora and fauna, build climate resilience, and mitigate the risk of flooding in the area.

Furthermore, a closed loop fire water testing system will be implemented to further reduce strain on potable water sources.

### **3.3.1 Water Sensitive Urban Design**

The proposed development has incorporated Water Sensitive Urban Design to reduce the demand for potable water, and redirect stormwater into the urban landscape as appropriate to the site and DCP requirements. The development will provide systems for stormwater treatment on the broader development such as raingardens, and reductions systems on-site designed as a protective measure for the environment. This system is advantageous by encouraging local ecosystems and biodiversity, offering protection from the adverse effects of peak flow incidents, along with the potential to enhance water quality by filtering pollutants. Additionally, Water Sensitive Urban Design can help maintain a sustainable groundwater supply for the community and its needs.

### **3.3.2 Rainwater and stormwater capture and reuse**

The development uses a system to recycle rainwater by collecting, storing, filtering, and distributing rainwater to offset most of the sites potable water usage throughout the site. This rainwater will then be repurposed for irrigation systems and use in toilets consequently reducing the demand on water-supply systems. These initiatives are designed to align with the overarching goal to protect, maintain and restore the local ecology of the development and offering enhancements to the quality of life.

### **3.3.3 Improved Ecology**

A well- designed landscape featuring a selection of native grasses, shrubs and trees will promote the biodiversity of insects and native birds. A vegetation plan incorporates drought tolerant plants and design, beneficial in minimizing water usage. Consequently, the design will actively contribute to conservational efforts within the urban environment, minimizing the ongoing environmental impact of the development.

## **3.4 Waste Management Strategies**

### **3.4.1 Waste Management**

Effective waste management throughout the construction and operation of the site will help to promote resource efficiency and minimise the adverse environmental impacts of the site development. The development during construction works will target an 80% rate for recycling and reuse of waste, with monitoring in place to ensure adherence. The following are being considered as part of the design process.

### **3.4.2 Waste Management Plan**

A Waste Management Plan will be prepared with the following key objectives:

1. To minimise the environmental impacts of the operations in the development
2. To minimise the impact of the management of waste within the development
3. To ensure waste is managed to reduce the amount landfilled and to minimise the overall quantity generated.
4. Liquids and hazardous wastes identified as 'special wastes' shall not be disposed of in the same manner as general. Instead, they will be managed separately in adherence to legislative requirements and waste type.

The development will also look at ways in which to encourage local recycling and reuse initiatives for the employees on site.

### **3.4.3 Separated Waste and Recycling Streams**

The provision of separated waste and recycling streams in all areas will allow for more effective recycling of the operational waste, particularly given the higher culpability of areas such as the ancillary offices. Providing separate bins for cardboard/paper waste, glass, food waste, comingled recycling, and general waste improves the operational efficiency and results in significant environmental benefits.

## **3.5 Urban Heat Island Effect Mitigation**

The proposed development is to integrate design and materiality which reduces reflected solar heat radiation. This will involve passive design strategies, material selection and maximization of shading and effective landscaping.

## 4. Conclusion

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This report has addressed the ESD to support the SEE and DA for the proposed Hunter Indoor Sports Centre located in New Lambton, New South Wales.

Specific sustainability initiatives proposed for the development include, but are not limited to:

- Water Sensitive Urban Design principles
- Considerate site layout and design to enable building user comfort
- Low embodied emission materials
- High efficiency electrical systems
- High performance fabric and glazing
- Water efficient fixtures and fittings
- Rainwater capture and reuse
- Site specific stormwater strategy
- Waste management and minimisation strategies
- Considered vegetation and plant selection and design to encourage biodiversity and land resilience

Overall, the implementation of the initiatives noted within this report clearly demonstrates commitment to ESD principles throughout its design, construction, and operation. Additionally, the development has worked to address key climate related risks posed to the site.

## Appendix A Net Zero Statement

Ref: NL230054-00-MD-LE01-2  
27 May 2025

EJE Architecture  
412 King Street  
NEWCASTLE NSW 2300

Dear Whom it May Concern,

**Re: Hunter Indoor Sports Centre - SSD65595459**

Northrop as the mechanical and sustainability consultant on the project provide the following information regarding the project emissions, transition plans, and sustainable infrastructure initiatives:

**Estimated Scope 1 and 2 Emissions up to 2050:**

Estimated energy consumption and GHG emissions data is not yet available for the project.

In the next stage of design, detailed predictive energy modelling will be undertaken to inform the design and estimate the quantity of emissions (both direct and indirect) to be offset using solar photovoltaic systems.

Following this assessment, clear targets and strategies will be established to reduce these emissions in alignment with our commitment to achieving net-zero greenhouse gas emissions.

**Confirmation of Adequate Infrastructure for Fossil-Fuel Independence by 2035:**

The project is designed to operate without fossil fuels from the moment it's occupied, demonstrating our commitment to sustainability and minimising environmental impact. It is anticipated that any fossil fuels used for emergency power, if needed, or minor specialist uses will account for less than 1% of the total buildings energy consumption and be offset for the first ten years of operation or until a net zero fuel option is readily available.

**Onsite Renewables and Sustainable Infrastructure:**

The project has also considered opportunities for onsite renewables, passive design, and other sustainable infrastructure to improve energy performance and reducing emissions. As part of our sustainability efforts, the project will implement the following initiatives:

- **Onsite Renewable Energy:** solar panels to generate clean, renewable electricity will be allowed for on the roof of the project. This will contribute to reducing utility grid supplied electricity consumption and decreasing the projects operational carbon footprint.
- **Passive Design:** the building is designed with passive design principles and material selection in mind to ensure thermal comfort is achieved without relying solely on mechanical means.

Passive design strategies such as performance glazing, shading and use of insulation will reduce demand on the mechanical air conditioning systems leading to lower energy consumption and greenhouse gas emissions. The selection of a pale roof will also help to reduce the impact of the urban heat island effect.

- **Infrastructure Improvements:** the project aims to implement infrastructure improvements, such as energy-efficient equipment and lighting systems, to enhance energy performance and reduce overall energy consumption.

These improvements contribute to the projects efforts to achieve net zero emissions and create a more sustainable built environment.

**Conclusion:**

The project design does not include the use of fossil fuels within the proposed building systems as such it is aligned with the Sustainable Buildings SEPP goal of ensuring developments are aligned to the NSW Government Policy for Net Zero Emissions.

Kind Regards,

A handwritten signature in black ink, appearing to read "Ian Van Eerden". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

**Ian Van Eerden**

Principal | Senior Sustainability Consultant  
GSAP | NABERS AP | BEng (Renewable Energy)

On behalf of Northrop Consulting Engineers Pty Ltd

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