Lot 303 Croatia Avenue, Edmondson Park

ESD REPORT

27 March 2025

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Climate Active Carbon Neutral ORGANISATION

LANDCOM

Contents

1 Introduction

This Ecologically Sustainable Development (ESD) report has been prepared by HIP V. HYPE to accompany an application for a State Significant Development (SSD-77211717) for infill Affordable Housing at Lot 303 Croatia Avenue, Edmondson Park.

1.1 Project Overview

As the NSW Government's land and property development organisation, Landcom has a mandate to take a lead role in improving the supply, diversity, and affordability of new housing in NSW.

Landcom aims to create innovative and productive places that demonstrate global standards of liveability, resilience, inclusion, affordability, and environmental quality, and uses its sites and close working relationships with the private sector to deliver quality, socially inclusive community places, where people can grow and thrive regardless of income levels and stages of life.

In response to the NSW Government's commitment to increasing the supply of Affordable Housing under the National Housing Accord, Landcom has committed to delivering 1,800 affordable rental housing dwellings by 2029. As part of this commitment, Lot 303 Croatia Avenue has been earmarked as a suitable site for infill affordable housing.

1.2 Project Objectives

Landcom's objectives for the project are:

- Delivery of sustainable high quality affordable accommodation.
- Provide a sense of place within the development to ensure good high-quality accommodation.
- The use of robust materials that allow for long service life of the building.
- A building that meets the need of the community and serves the requirements of the area.
- Seamless integration of cultural and sustainable objectives that align to Landcom's key principles.

1.3 Proposed Development

Landcom is seeking development consent to construct an infill affordable housing development. Development consent is sought for:

- Site preparation works
- Civil bulk earthworks
- Removal of trees and vegetation
- Construction of:
    - A nine (9) storey residential flat building, comprising 58 infill affordable dwellings, of which 100% will be designated affordable rental housing for key workers.

- Single level basement to accommodate 17 car parking spaces, 58 bicycle parking spaces and two (2) car share parking spaces.
- Landscaping; and
- Utilities and infrastructure services.

The proposed development has an estimated development cost that exceeds $30million and 100% of the gross floor area of the development will be used for the purposes of affordable housing. Accordingly, the proposal is SSD for the purposes of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP).

1.4 Report Purpose

This ESD Report has been prepared to address the following 'Secretary's Environmental Assessment Requirements (SEARs), in particular, Requirement 9, issued by the Department of Planning, Housing and Industry on 24 October 2024.

Table 1: Secretary's Environmental Assessment Requirements

SEARs Requirements	Report Section
1. Statutory Context	
• Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies, guidelines and planning circulars.	Section 1.2
• Identify compliance with applicable development standards and provide a detailed justification for any non-compliances.	Section 1.3
• Provide an explanation of how the development as described in the EIS is consistent with the development as was described in the request for SEARs (including any components that were not SSD) and provide a justification for any differences.	
• Address the requirements of any approvals applying to the site, including any concept approval or recommendation from any Gateway determination.	
• Provide documentation demonstrating that a registered community housing provider will manage the affordable housing component of the development for 15 years (after issue of Occupation Certificate).	
2. Estimated Development Cost and Employment	
• Provide the estimated development cost (EDC) of the development prepared in accordance with the relevant planning circular using the Standard Form of EDC Report.	
• The EDC Report must specify the EDC of the residential component of the development.	
• Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided.	
3. Design Quality	
• Demonstrate how the development will achieve:	
○ design excellence in accordance with any applicable EPI provisions.	
○ good design in accordance with the seven objectives for good design in *Better Placed*.	
• Demonstrate that the development:	

- where required by an EPI or concept approval, or where proposed, has been subject to a competitive design process, carried out in accordance with an endorsed brief and Design Excellence Strategy; or
- in all other instances, has been reviewed by the State Design Review Panel (SDRP) where required under 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 lodgement.

4. Built Form and Urban Design

- Explain and illustrate the proposed built form, including a detailed site and context analysis to justify the proposed site planning, design approach and application of the height and floor space bonuses under the Housing SEPP.
- 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.
- Provide a floorplan outlining the gross floor area and units that are dedicated as affordable housing.

5. Environmental Amenity

- Address how good internal and external environmental amenity is achieved, including access to natural daylight and ventilation, pedestrian movement throughout the site, access to landscape and outdoor spaces.
- Assess amenity impacts on the surrounding locality, including lighting impacts, reflectivity, solar access, visual privacy, visual amenity, view loss and view sharing, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential or other sensitive 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, comparing the proposed development, existing situation and a development with no bonuses applied.

6. Visual Impact

- Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development.
- Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that

7. Public Space

- Demonstrate how the development maximises the amount, access to and quality of public spaces (including open space, public facilities and streets/plazas within and surrounding the site), reflecting relevant design guidelines and advice from the local council 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 development, in accordance with *Crime Prevention and the Assessment of Development Applications Guidelines*.

8. Trees and Landscaping

- 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.

9. Ecologically Sustainable Development (ESD)

- 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. Section 5
- Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards. Section 5
- 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 5

10. Traffic, Transport and Accessibility

- Provide a transport and accessibility impact assessment, which includes:
  - 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.
  - 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.
  - analysis of the impacts of the proposed development during construction and operation (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), 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.

- proposals to promote sustainable travel choices for employees, residents, guests and visitors, 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.

- Provide a Construction Traffic Management Plan detailing predicted construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.

11. Biodiversity

- 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.
- If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.

12. Noise and Vibration

- Provide a noise and vibration assessment prepared in accordance with the relevant NSW Environment Protection Authority (EPA) guidelines. The assessment must detail construction and operational noise, and vibration impacts on nearby sensitive receivers and structures and outline the proposed management and mitigation measures that would be implemented.

13. Ground and Water Conditions

- 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 relevant *Groundwater Guidelines*.

14. Water Management

- Provide an Integrated Water Management Plan for the development that:
  - is prepared in consultation with the local council 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, 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.

15. Flood Risk

- Identify any flood risk on-site having regard to adopted flood studies, the potential effects of climate change, and any relevant provisions of the *NSW Flood Risk Management Manual.*
- Where the development could alter flood behaviour, affect flood risk to the existing community or expose its users to flood risk, provide a flood impact and risk assessment (FIRA) prepared in accordance with the Flood Impact and Risk Assessment – Flood Risk Management Guide LU01.
- Detail design solutions and operational procedures to mitigate flood risk where required.

16. Contamination and Remediation

- In accordance with Chapter 4 of SEPP (Resilience and Hazards) 2021, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.

17. Waste Management

- Identify, quantify and classify the likely waste streams to be generated during construction and operation.
- Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.
- Identify appropriate servicing arrangements for the site.
- If buildings are proposed to be demolished or altered, provide a hazardous materials survey.

18. Aboriginal Cultural Heritage

- Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site.

19. Environmental Heritage

- 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.

20. Social Impact

- Provide a Social Impact Assessment prepared in accordance with the *Social Impact Assessment Guidelines for State Significant Projects*.

21. Infrastructure Requirements and Utilities

- In consultation with relevant service providers:
    - assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.
    - identify any infrastructure 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.

22. Bush Fire Risk

- If the development is on mapped bush fire prone land, or a bush fire threat is identified on or adjoining the site, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection*.

23. Aviation

- If the development proposes a helicopter landing site (HLS), assess its potential impacts on the flight paths of any nearby airport, airfield or HLS.
- If the site contains or is adjacent to an HLS, assess the impacts of the development on that HLS.

24. Construction, Operation and Staging

- If staging is proposed, provide details of how construction and operation would be managed and any impacts mitigated.

25. Contributions and Public Benefit

- Address the requirements of any relevant contribution plan(s), planning agreement or EPI requiring a monetary contribution, dedication of land and/or works-in-kind and include details of any proposal for further material public benefit.
- Where the development proposes alternative public benefits or a departure from an existing contributions framework, the local council, the Department and relevant State agencies are to be consulted prior to lodgement and details, including how comments have been addressed, are to be provided.

26. Engagement

- Detail engagement undertaken and demonstrate how it was consistent with the *Undertaking Engagement Guidelines for State Significant Projects*. Detail how issues raised, and feedback provided have been considered and responded to in the project. In particular, applicants must consult with:
    - the relevant Department assessment team.
    - any relevant local councils.
    - any relevant agencies (including the Western Parkland City Authority for development within the Western Parkland City).
    - the community.
    - if the development would have required an approval or authorisation under another Act but for the application of s 4.41 of the EP&A Act or requires an approval or authorisation under another Act to be applied consistently by s 4.42 of the EP&A Act, the agency relevant to that approval or authorisation.

2 Site Information

The proposed development site is in the Liverpool Local Government Area within the Town Centre North precinct of Edmondson Park South. Edmondson Park South is identified in the Western City District Plan as a Local Centre in recognition of its proximity to the Southwest Rail Line and the Edmondson Park Railway Station. It borders the motorway intersection of the M31, M5 and M7 with Camden Valley Way, providing excellent road access to a large extent of the Greater Sydney Metropolitan Area.

The proposed development site is a 2,043m2 parcel of land currently known as Block 24 and part of Lot 303 in DP 1259974, Croatia Avenue, Edmondson Park (Figure 1). A Site Plan is provided at Figure 2.

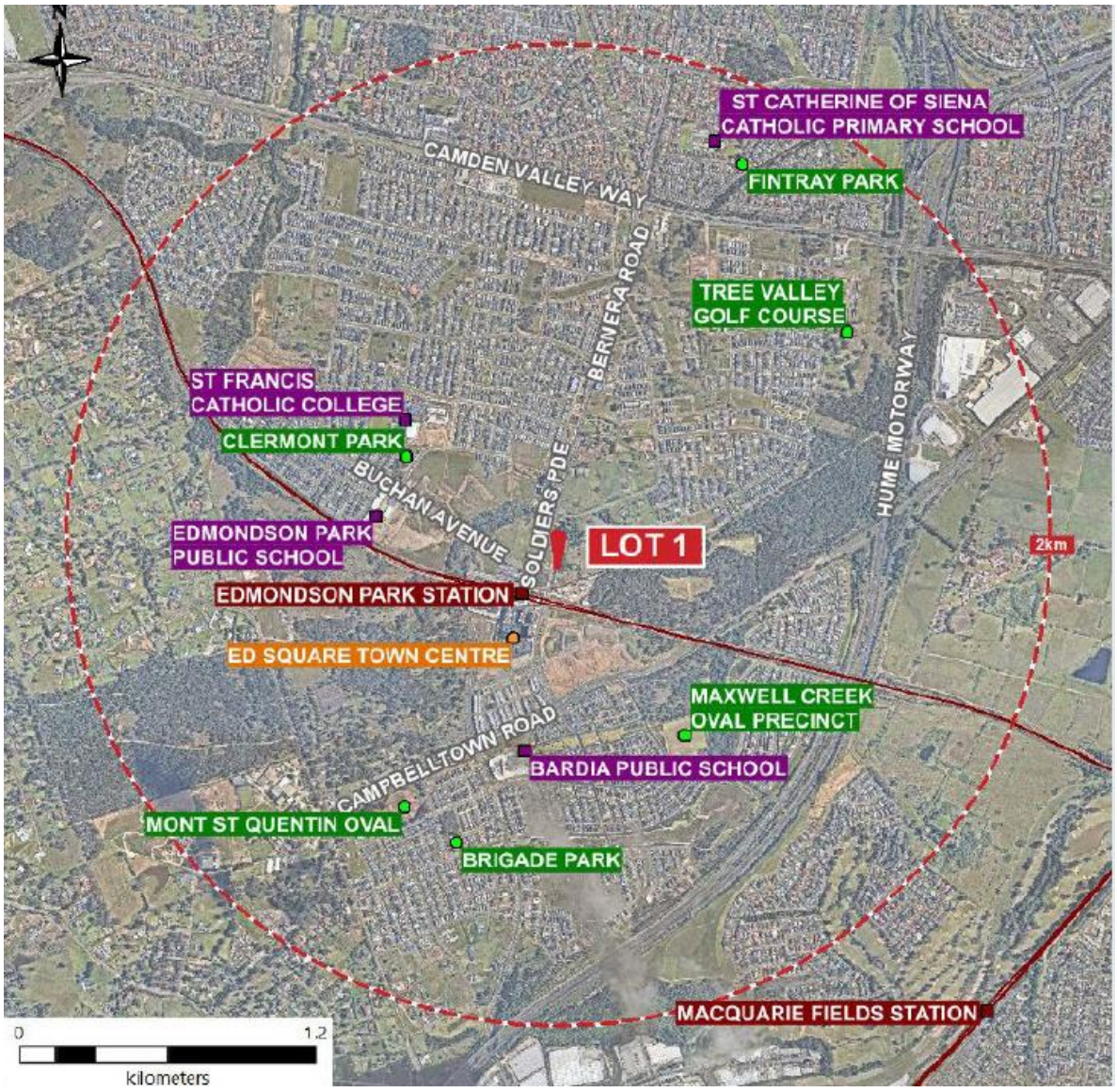

Figure 1: Site Location

Figure 2: Site Plan

1.5 Site Analysis

Photographs of the current site conditions are provided in **Figure 3**.

Figure 3: Site Image

Table 2 summarises the key features of the site which have the potential to impact or be impacted by the proposed development.

Table 2 – Key Features of the Site and Surrounds

Attribute	Site details
Land ownership	• The site is owned by Landcom.
Land configuration	• The site has an approximate area of 2,043m2 in a single lot (Lot 303 DP 1259974). • The site is triangular in shape and has frontages of: • 41 metres to Croatia Avenue • 215 metres to Soldiers Parade
Topography and geology	• The topography and slope of the site is generally low to moderate. While the site itself is fairly flat, the interface to Soldiers Parade has a level difference of about 2m. • The site is characterised by Wianamatta Shale, claystone, laminates and fine to medium grained sandstone.
Existing features	• The site is currently vacant with the exception of a stand of trees on the eastern boundary.
Easements and covenants	• The site is unencumbered of easements and covenants.
Local context	• The site and its surrounds are generally made up of large super lots comprising remnant vegetation, cleared areas, grassed paddocks and scattered, which are undergoing progressive development.
Regional context	• The site is strategically positioned between the Western Sydney Aerotropolis and the regional centres of Liverpool and Campbelltown/Macarthur. • The site is approximately 10km from Liverpool CBD, 14km from Campbelltown CBD and 25km the future Western Sydney International Airport (WSI) and Aerotropolis, which is earmarked to become Sydney's third CBD (Figure 6). • The site is accordingly well placed to leverage off the growth and job opportunities from these strategic centres and the WSI and Aerotropolis. The Region Plan and District Plan show that these strategic centres will play a critical role in attracting investment, business activity and jobs across Greater Sydney. • The site and broader Edmondson Park Town Centre are anchored by the Edmondson Park Train Station and Southwest Railway Line. These public transport corridors will act as a gateway which will integrate the site with the broader Western Parkland City, the WSI and Aerotropolis.
Infrastructure	• Civil works for future Macdonald Road is underway and will be complete early 2025.
Site access	• Vehicular access to the site is proposed from future Macdonald Road.
Services	• Services will be provided through DA1098/2021 including sewer, potable water, recycles water, electrical and communications. The site will be independently serviced with appropriate metering to the apartments. • Service will enter the site from the North East.
Contamination	• A Site Audit Statement issued for the site confirms it is suitable for the purposes of 'residential with gardens and accessible soil'.

Attribute	Site details
	• No further potential sources of contamination have been identified to date.
Stormwater and flooding	• The Edmondson Park South site is located at the top of three catchments, and is traversed by Maxwells Creek, Bunbury Curran Creek and Cabramatta Creek. The upper catchment of the Maxwells Creek flows through the Town Centre North, with water flowing to the north-east. • The site is situated on the banks of Maxwell Creek - a tributary of Cabramatta Creek and Georges River. • Liverpool City Council's online flood mapping tool indicates the site is not flood prone. • A Climate Resilience Report has been prepared for the project, stating a medium priority for the risk of flooding or extreme rainfall as a climate risk. The design of the project has included consideration of flood protection measures, such as wet/dry detention basins and drainage corridors. Adaptation and resilience actions for increased rainfall and flooding have been described in the report.
Bushfire risk	• The site is mapped as Category 3 - Medium Risk bushfire prone land. • The adjoining land has been identified as a future Asset Protection Zone from nearby riparian land. Bushfire impact assessments prepared to support previous DAs have concluded that the site is considered a reduced bushfire threat due to the surrounding and future residential development. • A Climate Resilience Report has been prepared for the project, stating a medium priority for the risk of bushfire. The area includes a number of vegetation corridors which are susceptible to bushfires. Adaptation and resilience actions for increased bushfires have been described in the report, including ensuring landscaping includes appropriate vegetation clearance zones around buildings and the site boundary.
Biodiversity	• Edmondson Park South has been Biodiversity Certified under the now repealed Threatened Species Conservation Act 1995. It is also covered by a Conservation Agreement under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). • Edmondson Park South site also includes a Regional Park to be managed for biodiversity conservation objectives.
Aboriginal heritage	• No Aboriginal heritage items, Aboriginal objects, or areas of archaeological potential are considered likely to be present within the site. • Previously identified sites within Edmondson Park South have already been removed as part of previous consents. This has been confirmed during subsequent site visits.
European heritage	• The site does not contain any mapped items of non-Aboriginal heritage (Figure 7). The nearest mapped non-Aboriginal heritage items to the site are: • Ingleburn Military Heritage Precinct, including the Bardia Barracks which contains three Riley-Newman prefabricated cottages (moveable items) around 750m south of the site and Mont St Quentin Oval including entry gates and former hospital gates around 910m south of the site • Hurlstone Agricultural High School around 2.5km east of the site • Macquarie Field House, homestead group ruins and rural landscape setting around 1.4km south-east of the site • Leppington House Park around 3km south-west of the site • Sydney Water Supply Upper Canal around 2.6km west of the site • Dwelling and Rural Lot around 1.9km north-west of the site • Horningsea Park Group, including site, main house and archaeological features around 2.2km north-west of the site

Attribute	Site details
	• Remnants of former sandstone cottage "Bernera" around 3.3km north of the site • The above listed items are locally listed under the Liverpool Local Environmental Plan 2008 (LLEP 2008) and the Campbelltown Local Environmental Plan 2015 (CLEP 2015). The Ingleburn Military Heritage Precinct which includes the Bardia Barracks and Mont St Quentin Oval, including entry gates, are also listed on the NSW State Heritage Register.

3 Project Background

The Edmondson Park Concept Plan (MP 10_0118), initially approved in August 2011 under the former Part 3A of the EP&A Act, provides for a new diverse and sustainable urban community covering an area of 605.4 hectares. Once complete, Edmondson Park South is expected to accommodate a mix of land uses, a diversity of housing, a new town centre incorporating retail, business and commercial floor space with employment opportunities, multi-purpose community and education facilities, a new 150-hectare regional park, several other local parks, and environmental conservation areas.

The Concept Plan has been modified several times to date. Since the Concept Plan's approval, staged development applications have also been determined and constructed, with Edmondson Park now comprising a growing local centre with shops and supporting community services, residential dwellings and open space and public domain.

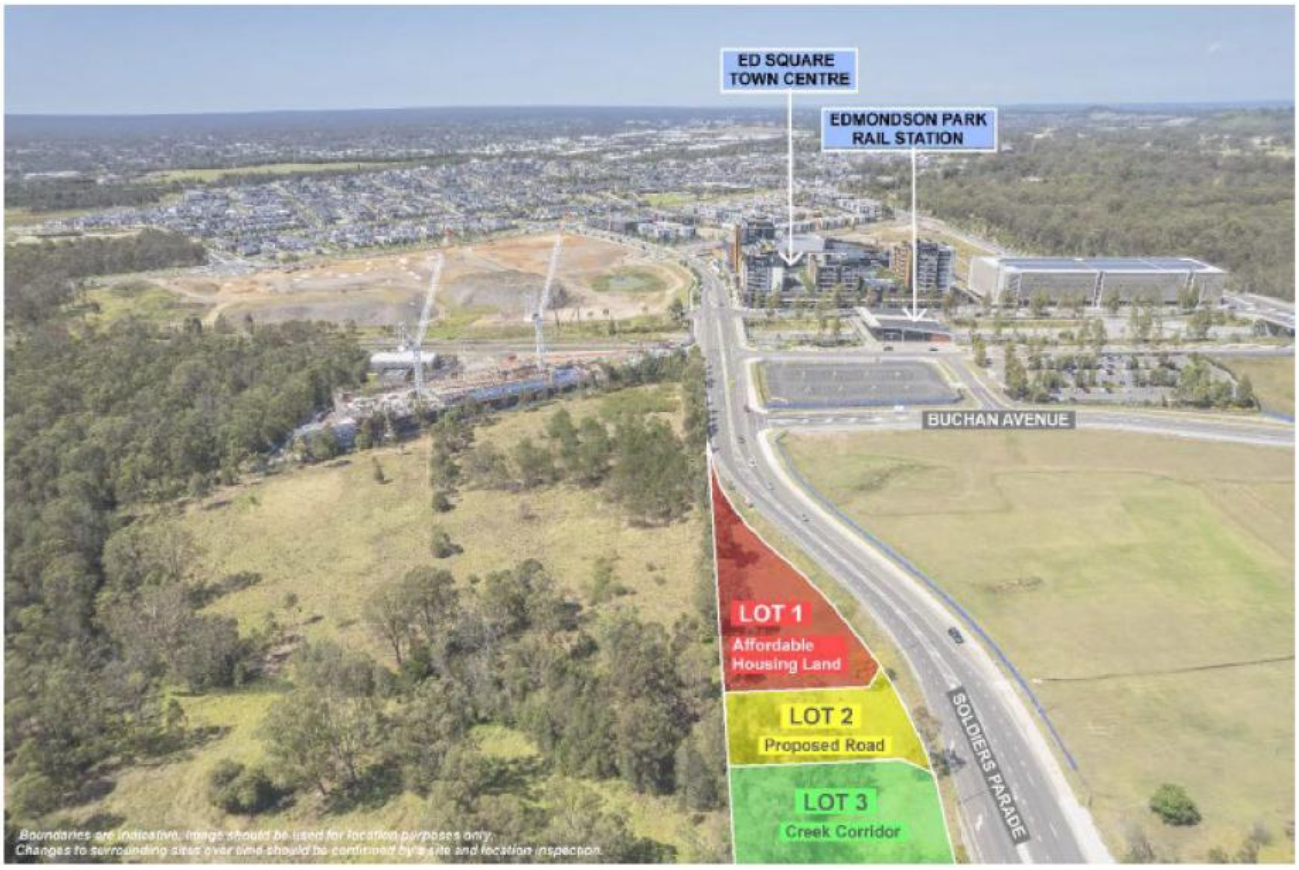

Figure 2: Layout plan showing Affordable Housing Land in context of the Landcom wider precinct

Within the Edmondson Park Concept Plan, the town centre comprises two precincts - Town Centre North and Town Centre South. Landcom owns the Town Centre North site situated within the northern portion of Edmondson Park South to the north of the Southwest Railway Line, which is being developed for local centre and residential purposes.

The Edmondson Park Concept Plan was most recently modified on 14 February 2025 by MP 10_0118 MOD 5. MOD 5 modified the Edmondson Park Concept Plan as it applies to Town Centre North including:

- Reducing the size of land allocated to a school site from 8ha to 6ha
- Allowing residential use on the 2ha of land formerly identified as school land
- Introducing a maximum gross floor area limit of 140,389m2 for the Station Precinct
- Increasing the anticipated number of dwellings from 440 to 3,030
- Increasing maximum building heights to between 12m and 50m in nominated locations and up to 67m for one landmark building
- Amending the Town Centre North road layouts, bushfire asset protection zones and dwelling typology;
- Introducing car, motorcycle and bicycle parking rates
- Introducing a Design Excellence Strategy, Design Guidelines and a Public Domain and Landscaping Plan
- Adjusting and increasing the Concept Plan site boundary; and
- Amending conditions and Statement of Commitments.

As Block 24 is located within Town Centre North, the Edmondson Park Concept Plan as approved under MOD 5 applies to the proposed development.

4 Methodology

This ESD report includes an analysis of:

- Section 5: Statutory requirements (NCC 2022, Liverpool Development Control Plan (DCP) 2008, Edmondson Park South Development Control Plan (DCP) 2012, State Environmental Planning Policies (SEPP), and Liverpool Local Housing Strategy 2020)
- Section 6: Sustainability targets and objectives (BASIX, SEARs Requirements, Sustainable Buildings SEPP)
- Section 7: Landcom sustainability targets
- Section 8: ESD principles (as defined in section 193 of the EP&A Regulation)
- Section 9: Climate Change resilience
- Section 10: A summary of ESD opportunities for the design, construction, and operation of the site
- Section 11: Additional ESD strategies recommended for inclusion or further consideration in next stages
- Section 12: Net Zero Plan for the development

4.1 Project Background

The objectives of this report are to:

- 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

The project prioritises sustainable outcomes, with many features embedded into the design and construction to realise a high-performing project that benefits people, place and planet.

To develop the ESD report, a review of the site and architectural documentation (Design Report prepared by DKO Architects on 27 March 2025) was completed. Further, all relevant statutory requirements for the site were reviewed and documented. Research was conducted to review possible ESD pathways for the project, and to analyse the best way to document sustainable outcomes while ensuring all statutory requirements are being captured. It was determined that the most appropriate pathway for the design was a Green Star Buildings v1 certification.

Green Star Buildings aims to meet current and future demands on the built environment with aspirational benchmarks for design, construction, and operational performance. It also provides a pathway for building owners to address carbon emissions over time. It is a robust pathway that features eight categories representing the issues that will define the

next decade of the built environment. As per Landcom's Sustainable Places Strategy, the project will seek a 4-Star Green Star Buildings rating. Sustainability targets from the Strategy will be embedded throughout the project where relevant.

5 Relevant Policies and Guidelines

5.1 National Construction Code

The proposed development shall be designed to exceed the requirements of Section J Energy Efficiency of the National Construction Code (NCC) 2022 Volume 1.

The energy efficiency requirements apply to the conditioned areas of a building to ensure adequate thermal comfort conditions can be maintained within the space. Under Section J the project will be classified as:

- Class 2: Domestic apartment buildings

5.2 Liverpool Development Control Plan (DCP) 2008

The proposed development has considered the Liverpool DCP in its design; however, DCPs do not apply to SSD DAs and the project will not be assessed against it.

The Liverpool Development Control Plan (DCP) 2008 sets out a number of policy objectives under key sustainability categories, in particular around Energy and Water Conservation:

"New dwellings are to demonstrate compliance with the State Environmental Planning Policy (Building Sustainability Index (BASIX). A Compliant BASIX Certificate and report will be submitted with all development applications containing residential activities."

Note the BASIX SEPP 2004 has since been replaced by the Sustainable Buildings SEPP 2022. The proposed development is exceeding both Energy and Water minimum targets under the new SEPP (additional detail provided in Section 6.1).

5.3 Edmondson Park South Development Control Plan (DCP) 2012

The Edmondson Park South DCP supports the objectives of Schedule 3 of the State Environmental Planning Policy (Precincts – Western Parkland City) 2021 relating to Edmondson Park South (Part 31) and will be used to facilitate the development of residential, open space, recreation, retail, and commercial uses within the site.

The proposed development satisfies the DCP aspirational targets below.

DCP Targets	Development Results
Core biodiversity areas are retained and observed	• The tree corridor along Maxwell creek has been retained

	• The Edmondson Park South site includes a Regional Park to be managed for biodiversity conservation objectives • Green space is incorporated into the design with 15% canopy cover to the site, to minimise the impacts of flooding, reduce urban heat island effect, and promote biodiversity • A robust planting schedule has been provided in the Landscape drawings including a variety of trees, grasses, wildflowers, groundcovers, and ferns
Open spaces are well connected	• A generous communal gathering space has been provided adjacent to the relocated main entry off Macdonald Road. A secondary entry is provided off Soldiers Parade which assists in activating the communal open space
Water sensitive urban design measures, including the use of recycled water and integrated options for water supply, wastewater, and stormwater servicing	• The proposed development achieves a 47% potable water score in BASIX • Installation of plumbing to make provision for connection to Hoxton Park (proposed) reticulated alternative water supply • Central on-site recycled water supply to supply at least 15,000L of recycled water per day • 10kL rainwater tank collecting water from 440m^2 of clean roof areas, to be used for the irrigation of 298.3m^2 of common landscaped areas
Lots are oriented to optimise solar access	• Solar access analysis has been completed for the proposed development, with 85% of apartments receiving 2 hours of more of solar access
Public transport use, walking and cycling is encouraged	• The proposed development is walking distance to Edmondson Park Train Station • There are also buses servicing the area along Soldiers Parade

5.4 State Environmental Planning Policies (SEPP)

State Environmental Planning Policies apply across the state. The following SEPPs apply to the proposed development.

State Environmental Planning Policy (SEPP), Sustainable Buildings, 2022

Sustainable Buildings SEPP	Development Results
Residential developments must adhere to Schedule 1 and 2 of the SEPP through demonstrating compliance to BASIX targets covering energy, water, thermal performance, and materials	• This is captured in more detail in Section 6.1 of this report. Refer to the completed BASIX report for further detail.

State Environmental Planning Policy (SEPP), Housing, 2021

Sustainability Target	Development Results
Natural cross ventilation and sunlight for the amenity and liveability of residents	• The proposed development achieves natural ventilation and solar access to 84% of apartments, surpassing the 60% and 70% minimums, respectively. 0% of apartments receive no solar access. The apartments are designed to maximise daylight to habitable spaces and minimise glare and thermal discomfort with a generous solar heat gain coefficient (SHGC) to glazing systems
Passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs	• Passive design has been incorporated into the building envelope, including high performance thermal insulation and glazing to the façade. Natural ventilation to 84% of the apartments minimises the need for active heating and cooling
Recycling and reuse of materials and waste. Use of sustainable materials and deep soil zones for groundwater recharge and vegetation	• A Waste Management Plan has been developed for the proposed development. The project will divert 98% of construction and demolition waste from landfill to meet Landcom's Sustainability target and achieve the Green Star target of 80%. The proposed development will use robust materials that allow for long service life of the building, per Landcom sustainability targets • The site has a 15% canopy cover and additional planter boxes throughout

5.5 Liverpool Local Housing Strategy 2020

The Liverpool Local Housing Strategy 2020 was created by the Liverpool City Council to direct housing for the community over the next 20 years. Targets for the development are detailed below.

Target	Development Results
New housing will have a focus on sustainability, climate resilience and accessibility to high-quality open space, frequent public transport connections and community facilities	• The proposed development prioritises sustainable, durable, low carbon design and takes into consideration climate resilience in its design • High-quality open space is prioritised, with a generous communal gathering space on the ground level adjacent to the relocated main entry off Macdonald Road. Edmondson Regional Park is also at close proximity to the development

	• The proposed development is conveniently placed at walking distance to Edmondson Park train station and bus routes, as well as Ed Square Shopping Centre
Housing is sustainable and high quality, demonstrating climate resilience	• A Climate Resilience Report has been prepared for the project, considering climate risks such as extreme rainfall, flooding, bushfire, and extreme heat in the design. This is further detailed in Section 9 of this report
Areas of high ecological significance are protected	• The proposed development's impacts on biological diversity and ecological integrity are limited, with the project aiming to create biodiversity. The site has a 15% canopy cover and additional planter boxes throughout
New housing is supported by plentiful open space, high quality community facilities and water sensitive urban design	• High-quality open space is prioritised, with a generous communal gathering space on the ground level adjacent to the relocated main entry off Macdonald Road. Edmondson Regional Park is also at close proximity to the development • WSUD is considered through the development, including through the collection of rainwater to be reused for landscape irrigation
New housing and housing densities will be concentrated in centre locations to protect and enhance areas of high ecological significance and rural land	• The proposed development is a nine (9) storey residential flat building, comprising 58 infill affordable dwellings • The site is accordingly well placed to leverage off the growth and job opportunities from these strategic centres and the WSI and Aerotropolis. The Region Plan and District Plan show that these strategic centres will play a critical role in attracting investment, business activity and jobs across Greater Sydney
The LEP and DCP will be reviewed to address the Urban Heat Island effect, encourage green open space in high rise development, implement water sensitive design and sustainable waste principles and prioritise low carbon initiatives in new development	• Green space is incorporated into the design with 15% canopy cover to the site, to minimise the impacts of flooding, reduce urban heat island effect, and promote biodiversity • A robust planting schedule has been provided in the Landscape drawings including a variety of trees, grasses, wildflowers, groundcovers, and ferns • WSUD is implemented throughout the design, including high WELS-rated fixtures, installation of plumbing to make provision for connection to Hoxton Park (proposed) reticulated alternative water supply, and a 10kL rainwater tank connected to landscape irrigation • The proposed development will incorporate lower carbon materials, focussing on durable and low maintenance materials reducing recurring carbon and costs

6 Sustainability Targets & Objectives

6.1 BASIX – Residential Component (Class 2)

Sustainability Target	Description	Development Results
BASIX (Sustainability standards for residential development)	The Building Sustainability Index (BASIX) requirements apply to all residential dwelling types and are part of the development application process in NSW. Targets were increased as of October 1, 2023 in line with the Sustainable Buildings SEPP. Targets for the development include:	The proposed development has completed a BASIX assessment with the following commitments:
	40% potable water savings target	47% potable water score
	58% energy improvement target (for 6-20 storey units)	79% energy score
	7-Star NatHERS average for the development	The proposed development receives a minimum 7-Star NatHERS average, with all units above 6-Stars
	Maximum loads for single dwellings and average all dwellings in multi dwelling developments: Heating: • Slab on ground: 55.7 MJ/m^2.annum • Suspended floor (enclosed or open subfloor) / mudbrick walls: 61.8 MJ/m^2.annum • Unit: 55.7 MJ/m^2.annum Cooling: • Slab on ground: 56.2 MJ/m^2.annum • Suspended floor (enclosed or open subfloor) / mudbrick walls: 61.8 MJ/m^2.annum • Unit: 56.2 MJ/m^2.annum	The proposed development receives a passing thermal performance score in BASIX, confirming all the thermal loads for each dwelling have been met

6.2 SEARs Requirements

This section of the report is intended to provide an assessment against the SEARs requirements for Ecologically Sustainable Development (ESD).

Sustainability Target	Description	Development Results
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. Per Section 193 of the EP&A Regulation, the principles of ecologically sustainable development are the following:	The precautionary principle	The proposed development proactively seeks to prevent environmental degradation by being fossil fuel free, powered by renewables, have a highly efficient façade to lower energy requirements for heating and cooling, built with lower carbon materials to achieve a 10% upfront carbon reduction, and offset remaining refrigerants with nature.
	Inter-generational equity	The proposed development seeks to preserve and enhance the health, diversity, and productivity of the environment for future generations. This includes through encouraging a positive contribution to key environmental issues such as water, carbon, and energy. The project will have reduced potable water consumption, upfront carbon reduction, and utilise energy-efficient services throughout. The project also encourages connections between humans and nature by prioritising green spaces and minimising the urban heat island effect.
	Conservation of biological diversity and ecological integrity	Green Star Buildings conserves biological diversity and ecological integrity through limiting the development's impacts on the natural world and specifically focusing on creating biodiversity in Australian cities and regions. The site has a 15% canopy cover and additional planter boxes throughout.
	Improved valuation, pricing and incentive mechanisms	The proposed development prioritises environmental factors being included in the valuation of assets and services. The polluter, in this case, the developer, pays for pollution and waste. Established environmental goals should be pursued in the most cost-effective way by establishing lower carbon materials, net-zero design, offsetting of refrigerants, and

	minimisation of waste in the valuation of their assets. A Waste Management Plan has been prepared for the project which estimates weekly waste generation values and calculates the waste storage and required collection rates.
Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards	4-Star Green Star Buildings signifies Best Practice in Australia, with the tool's eight categories meeting or exceeding all relevant industry recognised performance standards. The tool includes a range of credits which cover energy, water, greenhouse gas reduction, reaching net-zero emissions, upfront carbon reduction, waste management, climate change resilience, indoor environmental quality, biodiversity, and social cohesion, and more. The proposed development will implement the prescribed Green Star 4-Star pathway throughout Design Development. 4-Star Green Star meets, at a minimum, NCC 2022 NatHERS and Section J requirements.
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	The proposed development minimises greenhouse gas emissions through many of its robust credits, with certified Green Star buildings producing approximately 33% less greenhouse gas emissions than typical buildings. This includes: • Building commissioning and tuning ensures systems are running per their design, and not consuming any additional energy. Airtightness testing ensures no leaking of energy (heating and cooling) through the building envelope. • The building's carbon emissions are at least 10% less than those of a reference building, with the emissions reductions occurring as a result of good design and material selection. • The building must achieve an average NatHERS rating of 7.0-Stars, with no unit under 6.0-Stars. Domestic hot water energy use is reduced through high-WELS rated appliances. • A Zero Carbon Action Plan will be developed for the building, covering all energy consumption, procurement, and generation for the building to operate as fossil fuel free. • The building will use 40% less potable water compared to a reference building.

7 Landcom sustainability targets

Sustainability Target	Description	Development Results
Energy and Greenhouse Gas Emissions	• All new projects modelled to reduce greenhouse gas (GHG) emissions at a precinct scale. Transport emissions are excluded due to low influence from Landcom, but communities should be designed to support active transport and the update of electric vehicles • 20% forecast precinct energy demand is supplied by renewable energy, or a smart energy solution. • 70% GHG emissions weighted portfolio reduction • 10% upfront and embodied carbon weighted portfolio reduction • 100% of new dwellings are EV ready	• The proposed development is compliant with BASIX, exceeding the target 58 Energy score with a score of 79 • Preference is given to onsite production of renewable energy, and a 75kWh rooftop solar photovoltaic system will be installed • The proposed development will be 100% all-electric, minimising GHG emissions • The proposed development will achieve a 10% upfront carbon reduction against a benchmark building, as required by Green Star Buildings. • The proposed development will have EV-enabled infrastructure to 100% of car park spaces. • Landcom stipulates that all new built forms shall adopt industry best practice solar reflectance index (SRI) minimums (in line with Green Star requirements) and achieve a net urban heat reduction. Thus, 100% of the site area (roof and hardscape) shall comply with the requirement. The proposed development is achieving this criteria through a combination of retained and newly planted vegetation coupled with light-coloured façade, paving and roofing options.
Water	• All new projects to demonstrate water positive outcomes through an Integrated Water Management Strategy (IWM) or a Water Balance study.	• The proposed development is compliant with BASIX, exceeding the target 40 Water score with a score of 47. • Potable water use is reduced, including a 40% less potable water target compared to a benchmark building, as required by Green Star Buildings • Rainwater will be captured in a 10kL rainwater tank connected to landscape irrigation, toilets, and laundries.

Transport	• Prioritise design for active transport and encourage the uptake of electric vehicles	• The proposed development will have EV-enabled infrastructure to 100% of car park spaces • The project is walking distance to Edmondson Park Train Station
Biodiversity	• Design to enable net positive ecological outcomes – regenerate or restore local biodiversity and watersheds	• Core biodiversity areas are retained and observed, and canopy areas created for shade (within limit of bushfire restrictions) • Edmondson Park South site also includes a Regional Park to be managed for biodiversity conservation objectives
Waste	• 98% portfolio construction waste is diverted from landfill • 80% portfolio demolition waste is diverted from landfill • 100% of construction timber is industry certified	• The proposed development shall provide labelled, accessible and evenly distributed bins or storage containers to building occupants for at least general waste, recycling, and one additional stream such as organics, e-waste, batteries • Dedicated areas for the storage and collection of the above waste streams will be provided. The storage area is sized to accommodate all bins or containers • The proposed development will divert 98% of construction and demolition waste from landfill to meet Landcom's Sustainability target and achieve the Green Star target of 80%
Social	• Healthy and inclusive spaces for the community; affordable housing	• The proposed development aims to provide healthy, safe, and affordable Build-to-Rent housing to local residents • The Landcom Climate Risk and Community Resilience Plan for Edmondson Park has been developed to comply with Landcom requirements and Green Star Communities v1.1

8 ESD Principles

ESD is defined under section 193 of Environmental Planning and Assessment Regulation 2021 (EPAR, 2021), as having the following principles:

- The precautionary principle;
- Inter-generational equity;
- Conservation of biological diversity and ecological integrity;
- Improved valuation, pricing, and incentive mechanisms.

An analysis of how the proposed development achieves the above principles is provided in Section 6.2 above.

9 Climate Change Resilience

The Landcom Climate Risk and Community Resilience Plan for Edmondson Park has been developed to comply with Landcom requirements and Green Star Communities v1.1. A gap assessment is to be developed by Landcom and the ESD Consultant during Design Development to meet Green Star Buildings V1 requirements, building on the existing Climate Risk and Community Resilience Plan. 100% of extreme and high risks identified in the Climate Change Adaptation Plan will be integrated into Design Development.

An initial climate risk screening showed the following priority ratings for the area:

- Overall Priority: Medium
- Bushfire: Medium
    - Areas within and adjacent to the community are designated as bushfire prone land. The community includes a number of vegetation corridors which are susceptible to bushfire, including conservation management areas which comprise areas of remnant Cumberland Plain Woodland.
    - A Bushfire Protection Assessment was prepared for the proposed site by Travers Ecology dated 20 March 2025. Based on the effective slope of the future forested wetland vegetation, and the proximity of the building to the surrounding grassland vegetation, the bushfire risk assessment has determined that the proposed development can provide minimum setbacks to ensure it is not exposed to exceeding heat-flux. The grassy vegetation to the east will be cleared as part of the approved DA conditions. The current design provides a reduced amount of tree canopy cover (15%) to comply with the bushfire requirements in Edmondson Park.
- Extreme Heat: Extreme
    - The region currently experiences an average of 9.6 days above 35°C per year. Extreme heat days and heatwaves are expected to increase under climate change, disproportionately in Western Sydney where exposure to urban heat impacts is associated with the density and heat retention of urban

development. Near future (2030) is expected to have an additional 5-10 days per year over 35°C, and the far future (2070) is expected to have an additional 10-20 days per year over 35°C.

- Flooding: Medium
    - Edmondson Park is located within the Cabramatta Creek and Maxwells Creek floodplain. Design of the community has included consideration of flood protection measures, such as wet/dry detention basins and drainage corridors to manage potential flood risk. This is expected to increase in intensity due to climate change.
- Extreme Rainfall: Medium
    - The Edmondson Park region is susceptible to storm events, predominantly in the form of east coast lows that develop as a result of ex-tropical cyclones that decay as they move south or interactions between troughs of low pressure/ cold fronts with warmer sea surface temperatures. This is expected to increase in intensity due to climate change.

Adaptation and resilience actions for the proposed development are presented in the table below.

Variable	Description
Extreme Heat	• Passive natural ventilation, light coloured roofs, light coloured pavements, reflective materials, awnings or louvres for shading, and energy and water saving initiatives are included in the design
	Improved resilience to extreme heat through: • Solar panels to generate electricity on site in times of power outage due to high temperatures • Louvres for shading • Lowered energy demands through a highly efficient building envelope • Rainwater tank for backup water supply • Drought tolerant vegetation
	• Explore options for renewable energy and battery storage uptake within community facilities to support decentralised energy solutions. This allows for energy independence and less reliance on centralised power grids in time of power outages
	• Increased shade coverage exists on site through abundant trees and landscaping, to allow for passive cooling and connectivity between the precinct
	• Selection of equipment and design of HVAC systems will cater to higher operating temperatures and extreme heat events (e.g. design to 2030 temperatures)
Extreme rainfall	• Flood studies undertaken for the site are incorporated into the design flood levels, and drainage is designed to account for increases in the intensity of rainfall using appropriate guidelines (e.g. Practical Responses to Climate Change/ or ARR2016 approach)
	• A 10kL rainwater tanks is included in the design for capture and reuse

	• A mix of plant species is used in landscaping, with landscaped areas reducing flash flooding and runoff in times of extreme rainfall. Rainwater collected on site will be reused for irrigation
	• Green space is incorporated into the design with 15% canopy cover to the site, to minimise the impacts of flooding and create less runoff than hard surfaces
Bushfire	• Landscaping plans to include appropriate vegetation clearance zones around buildings and the site boundary
Storm Events	• Building materials (façade, roofing) to be resistant to hail and can withstand strong winds

10 Environmentally Sustainable Design (ESD) Opportunities

ESD Opportunity	Design Implementation
Energy Efficiency and Compliance	• The proposed development is compliant with BASIX, exceeding the target 58 Energy score with a score of 79 • The proposed development receives a passing thermal performance score in BASIX, confirming all the thermal loads for each dwelling have been met • The proposed development is targeting a minimum 7-Star NatHERS average
Energy & Greenhouse Gas Emissions Reduction	• The proposed development exceeds the BASIX target Energy score of 58 with a score of 79 • Preference is given to onsite production of renewable energy, and a 75kWp rooftop solar photovoltaic system will be installed • The proposed development will be 100% all-electric, minimising GHG emissions • The proposed development will receive a 10% upfront carbon reduction against a benchmark building, as required by Green Star Buildings • The proposed development will have EV-enabled infrastructure to 100% of car parks
Building Fabric Design	• Passive design has been incorporated into the building envelope, including high performance thermal insulation and glazing to the façade • The proposed development is targeting a minimum 7-Star NatHERS average • Airtightness testing ensures no leaking of energy (heating and cooling) through the building envelope
Heating, Ventilation, & Air Conditioning (HVAC) Design	• Natural ventilation to 84% of the apartments minimises the need for active heating and cooling • Bathroom, kitchen, and laundry ventilation systems will be through individual fans, ducted to façade
Lighting Design	• The proposed development achieves solar access to 84% of apartments, surpassing the 70% minimum compliance target. 0% of apartments receive no solar access. The

	apartments are designed to maximise daylight to habitable spaces, and minimise glare and thermal discomfort with a generous SHGC to glazing systems • All indoor lighting shall be LED and: – Have a minimum Colour Rendering Index (CRI) of 85 or higher – Meet best practice illuminance levels as per AS/NZS 1680.1:2006 – Maintain a uniformity of no less than that specified in AS/NZS 1680.1:2006 with a maintenance factor method as defined in AS/NZS 1680.4 – Have a MacAdam Ellipse or Standard Deviation Colour Matching of 3 or lower • Glare from light sources shall be limited within regularly occupied areas
Domestic Hot Water	• Domestic hot water will be provided through a centralised electric heat pump
Facilities	• No common facilities are included in the proposed development
Onsite and Off-site Renewables	• Preference is given to onsite production of renewable energy, and an 75kWp rooftop solar photovoltaic system will be installed
Metering & Monitoring	• The proposed development will have accessible energy and water metering for all common uses, major uses, and major sources (separate metering to be provided for common uses and individual residential apartments) • The monitoring system must accurately and clearly present the metered data and include reports on consumption trends for the automatic monitoring system. The monitoring strategy must be developed in accordance with a recognised Standard, such as CIBSE TM39 Building Energy Metering
Water Efficiency & Conservation	• The proposed development uses 40% less potable water compared to a reference building. • Landcom requires that all new projects demonstrate water positive outcomes through an Integrated Water Management Strategy (IWM) or water balance study. • The proposed development utilises a 10kL rainwater tank connected to landscape irrigation, toilets, and laundries • High efficiency WELS fixtures are used throughout the project • The proposed development has provision for recycled water supply
Healthy Indoor Environmental Quality	• Internally applied paints, adhesives, sealants (by volume) and carpets to be low or no VOC • The proposed development achieves natural ventilation to 84% of apartments, surpassing the 60% minimum requirement • The proposed development achieves solar access to 84% of apartments, surpassing the 70% minimum requirement. 0% of apartments receive no solar access • The apartments are designed to maximise daylight to habitable spaces, and minimize glare and thermal discomfort with a generous SHGC to glazing systems
Waste Management Practice	• A Waste Management Plan has been developed for the proposed development • The proposed development shall provide labelled, accessible and evenly distributed bins or storage containers to building occupants for at least general waste, recycling, and one additional stream such as organics, e-waste, batteries • Dedicated areas for the storage and collection of the above waste streams will be provided. The storage area is sized to accommodate all bins or containers

	• The proposed development will divert 98% of construction and demolition waste from landfill to meet Landcom's Sustainability target and achieve the Green Star target of 80%
Sustainable Transport	• The proposed development will have EV-enabled infrastructure to 100% of car parks • The proposed development is walking distance to Edmondson Park Train Station
Biodiversity	• Core biodiversity areas are retained and observed • Green space is incorporated into the design with 15% canopy cover to the site, to minimise the impacts of flooding, reduce urban heat island effect, and promote biodiversity • A robust planting schedule has been provided in the Landscape drawings including a variety of trees, grasses, wildflowers, groundcovers, and ferns
Materials	• The proposed development will use robust materials that allow for long service life of the building, per Landcom sustainability targets • The proposed development's upfront carbon emissions shall be at least 10% less than those of a reference building, with the emissions reductions occurring as a result of good design and material selection • Internally applied paints, adhesives, sealants (by volume) and carpets to be low or no VOC • No new engineered wood products or low formaldehyde only • 100% of construction timber is industry certified
Sustainable Management Practices	• Prior to practical completion the head contractor shall provide operations and maintenance information for all building systems to the building owner / representative • A building logbook as per CIBSE TM31: Building Logbook Toolkit shall be provided to the building owner / representative • A 12-months tuning process that includes quarterly adjustments and measurements shall be carried out post practical completion • A building users guide will be provided to all tenants on how to best utilize the building features
Recommended Social Initiatives	• The building meets the needs of the community by delivering local, sustainable, high quality and affordable accommodation. • A Community Resilience Plan will continue to be developed by Landcom and the ESD Consultant throughout Design Development, with a community capacity building event being conducted prior to handover • It is encouraged that the building tenants interact and foster connection in order to build community and resilience in times of hardship

11 Additional ESD strategies recommended for inclusion or further consideration in next stages (4-Star Green Star)

The proposed development is seeking a Green Star certification as per the Landcom Sustainable Places Strategy targets, with an anticipated target of a Best Practice 4-star rating under Green Star Buildings v1.

The Green Star pathway will be continuously referred to during the next project stages, and includes a Design Review and an As-Built Review to ensure that all of the requirements have been implemented in the building design and construction. As a baseline, the proposed development will align with the following Minimum Expectations:

- Credit 2 Responsible Construction: The builder's construction practices will reduce impacts and promote opportunities for improved environmental and social outcomes
- Credit 3 Verification and Handover: The building will be optimised and handed over to deliver a high level of performance in operation
- Credit 4 Responsible Resource Management: Operational waste and resources will be separated and recovered in a safe and efficient manner
- Credit 10 Clean Air: Pollutants entering the building are minimised, and a high level of outdoor air is provided to ensure levels of indoor pollutants are maintained at acceptable levels
- Credit 11 Light Quality: The building provides good daylight and its lighting is of high quality
- Credit 12 Acoustic Comfort: The building provides acoustic comfort for building occupants
- Credit 13 Exposure to Toxins: The building's occupants are not directly exposed to toxins in the spaces they spend time in
- Credit 16 Climate Change Resilience: The building will be built to respond to the direct and indirect impacts of climate change
- Credit 21 Upfront Carbon Emissions: The building's upfront carbon emissions from materials and products will be reduced and offset
- Credit 22 Energy Use: The building has low energy consumption
- Credit 23 Energy Source: The building's energy comes from renewables
- Credit 25 Water Use: The building has low water use
- Credit 27 Movement and Place: The building's design and location encourages occupants and visitors to use active, low carbon, and public transport options instead of private vehicles
- Credit 31 Inclusive Construction Practices: The builder's construction practices will promote diversity and reduces physical and mental health impacts
- Credit 35 Impacts to Nature: Ecological value is conserved and protected.

12 Net Zero Plan

The proposed 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.

- The proposed development minimises greenhouse gas emissions through certification with the voluntary rating tool Green Star, with certified Green Star buildings producing approximately 33% less greenhouse gas emissions than typical buildings
- The building is 100% electric, with no gas on site
- Preference is given to onsite production of renewable energy, and an 75kWp rooftop solar photovoltaic system will be installed
- Building commissioning and tuning ensures systems are running per their design, and not consuming any additional energy. Airtightness testing ensures no leaking of energy (heating and cooling) through the building envelope
- The building's upfront carbon emissions are at least 10% less than those of a reference building, with the emissions reductions occurring as a result of good design and material selection

- The building achieves a minimum average NatHERS rating of 7.9-Stars, with no unit under 6.0-Stars. Domestic hot water energy use is reduced through high-WELS rated appliances
- A Zero Carbon Action Plan will be developed for the building
- 100% of carbon emissions from essential refrigerants will be offset
- The building will use 40% less potable water compared to a reference building, with high WELS fixtures installed throughout

13 Recommendations

It is recommended that the proposed development target a 4-Star Green Star Buildings certification. In addition to Green Star targets, the proposed development will adhere to all Landcom sustainability targets, and the Climate Change Resilience and Community Resilience plans shall be implemented into the design.

14 Conclusion

This Environmentally Sustainable Development (ESD) Report has been prepared to communicate the approach taken to embed sustainability into the design, construction and operation of the proposed multi-unit residential development in Edmondson Park.

The report included an analysis of:

- Section 5: Statutory requirements
- Section 6: Sustainability targets and objectives
- Section 7: Landcom sustainability targets
- Section 8: ESD principles (as defined in section 193 of the EP&A Regulation)
- Section 9: Climate Change resilience
- Section 10: A summary of ESD opportunities for the design, construction, and operation of the site
- Section 11: Additional ESD strategies recommended for inclusion or further consideration in next stages
- Section 12: Net Zero Plan for the development

The proposed development prioritises sustainable outcomes, with many features embedded into the design and construction to realise a high-performing project that benefits people, place and planet.

The proposed development proposal demonstrates a holistic approach to sustainable urban development that addresses the ESD objectives of the City of Liverpool. The ESD initiatives outlined in this report will continue to be embedded into the design in the next stages, with a commitment to achieve a 4-Star Green Star Buildings certification. Green Star Buildings addresses the SEARs requirements for Ecologically Sustainable Development and provides a robust sustainability framework for the Edmondson Park development. Achieving a Green Star rating supports independent confirmation on sustainability requirements and goes beyond compliance.