

NSW Land and Housing Corporation Environmental Sustainability Strategy 2024–2026

July 2023





Acknowledgement of country

The Department of Planning and Environment acknowledges the traditional custodians of the land and pays respect to Elders past, present and emerging.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

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Artwork (above) by Nikita Ridgeway

Contents

Executive Summary	4
Vision	5
LAHC and Environmental Sustainability	6
Why is Environmental Sustainability Important for Social Housing	7
Scope	8
Relevant Policies, Plans and Strategies	9
Priorities	9
Action Plan	12
Review and Reporting	16

Executive Summary

Land and Housing Corporation (LAHC) is responsible for managing the NSW Government's social housing portfolio. LAHC owns and manages land, buildings and other assets within the social housing portfolio that includes approximately 125,000 homes.

LAHC's Environmental Sustainability Strategy 2024-2026 establishes our environmental strategic priorities, vision and actions for the next three years. It outlines key actions in each priority area that will enhance environmental sustainability across LAHC's operations, improve resilience, and improve wellbeing for social housing residents and the community.

LAHC's first Environmental Sustainability Strategy, released in December 2008, recognised that sustainability and climate change are compelling issues of our times. As climate change will disproportionately impact socio-economically disadvantaged communities, climate adaptation and mitigation are critical for the social housing sector.

Responding to climate change presents an opportunity to implement innovative programs that improve resource efficiency, reduce risk, lower tenant living costs, and create economic and employment opportunities. Embedding circular economy considerations into the management of the social housing portfolio can promote long-lasting design, maintenance, repair, recycling and re-use.

Integrating sustainability into the delivery and management of social housing will create long term benefits such as improving resilience, promoting innovation, fostering partnerships and collaboration, influencing supply chains, and meeting stakeholder expectations.

Newly built housing and retrofits to existing housing stock will improve water and energy efficiency and thermal comfort, reduce carbon emissions, and reduce utility costs for social housing residents.

Partnerships with the private sector on large scale social housing renewal projects will deliver resilient homes and communities that use state-of-the-art technology to reduce carbon emissions and enhance community engagement.

LAHC's environmental sustainability priorities over the next three years include:

- improve the energy and water efficiency of new and existing social housing
- implement programs to reduce carbon emissions
- improve thermal comfort and indoor air quality
- reduce environmental risks and continually improve environmental performance
- recognise and support Aboriginal and Torres Strait Islander people
- integrate circular economy opportunities
- adapt to climate change.

LAHC acknowledges the challenges in maintaining the physical condition of social housing stock to an acceptable standard. As demand for maintenance and property upgrades to improve energy and water efficiency and climate resilience increases, additional funds will be required beyond government grants and divestment of assets.

Not all **Strategy** actions will be delivered over the next three years due to funding and resourcing constraints. Business cases and funding proposals for NSW Treasury will be developed to assist implement actions.

Vision

LAHC is a leader in reducing carbon emissions, adapting to climate change and driving innovation to improve resilience and prosperity for social housing residents.

This aligns with the LAHC Portfolio Strategy 20-year vision and priorities to grow and change our portfolio so we can house more vulnerable people and families in better quality modern homes and improve our financial sustainability as a self-funded housing provider.

LAHC is committed to:

- Reducing carbon emissions by 50% by 2030 (compared to FY19 baseline) to support a prosperous low carbon economy
- Supporting social and energy equity by providing access to modern energy services and products
- Optimising lifecycle costs by adopting resilient and sustainable housing design, and retrofit programs for existing dwellings, to adapt to future climate conditions
- Displaying leadership through continual environmental improvement and minimising risks
- Continuing to collaborate and partner with stakeholders to deliver environmental and social outcomes for social housing residents.



Solar panels installed at LAHC unit complex in Dubbo



Solar panels installed on LAHC property in Bathurst

LAHC and Environmental Sustainability

LAHC's first Environmental Sustainability Strategy, released in December 2008, set a new direction for environmental sustainable social housing to ensure that low income and socially disadvantaged people are not unfairly burdened by the impacts of climate change.

Since 2008 we have implemented a range of environmental sustainability initiatives to mitigate and adapt to climate change and improve the energy and water efficiency of social housing dwellings including:

- Retrofitting ceiling insulation in over 20,000 dwellings
- Retrofitting over 15,000 LED lights in common areas of over 400 residential unit buildings
- Installing solar systems and door seals at over 6,700 dwellings
- Installing energy efficient air conditioners in over 2,500 dwellings
- Conducting over 5,700 water efficiency upgrades at dwellings
- Supporting over 4,900 social housing households to purchase a subsidised water and energy efficient washing machine

Environmental sustainability is important to protect the health, diversity and productivity of the environment for the benefit of current and future generations. Environmental sustainability has gone beyond just reducing environmental impacts of direct operations. We need to consider value chains and societal outcomes, embed sustainability into business practices, and facilitate innovative approaches to complex problems.

Key factors driving positive environmental outcomes for infrastructure include:

- **Protection and enhancement** - Preserving ecological value by taking account of impacts on atmosphere, land, oceans, seas, habitat, coasts, freshwater and biodiversity
- **Climate change mitigation and adaptation** - Reducing the rate of climate change and building resilience to floods, bushfire, drought, heatwaves and extreme weather events
- **Circular economy** - Keeping products and materials in use for as long as possible through product life cycle, from design, manufacturing, and retail to end-of-life-disposal
- **Reducing pollution** - Limiting air, water, noise, soil and greenhouse gas pollution.¹

LAHC has an important role to reduce carbon emissions, mitigate and adapt to climate change impacts, and use resources more efficiently in the design, construction and maintenance of social housing. Addressing these challenges will promote social justice and ensure that social housing households benefit from decarbonisation, renewable energy and resource efficiency.

¹ Infrastructure Australia 2021, Sustainability Principles – Infrastructure Australia's approach to sustainability
https://www.infrastructureaustralia.gov.au/publications/sustainability_principles

Why is Environmental Sustainability Important for Social Housing?

Social housing households have low incomes, pay disproportionately more of their income on energy, and are at high risk of experiencing energy stress. Energy stress can occur when energy expenditure is more than 7 per cent of after housing income, when households are not able to pay bills on time, or when households are unable to heat their home.² Low income households are also more likely to have old and inefficient appliances, and use cheap and inefficient heaters or air conditioners to warm and cool their home.

As the average age of social housing dwellings in NSW is over 40 years, homes can be cold in winter, hot in summer and too expensive to maintain health and wellbeing. Many social housing households cannot afford energy efficiency improvements, or to purchase energy efficient appliances. Social housing households may also go without heating or cooling, or forego food or medication, putting their health and lives at risk.

Improving the environmental sustainability of social housing is important as it:

- improves health and wellbeing
- reduces utility bills
- reduces carbon emissions
- creates employment opportunities
- improves social equity

In the Australian Institute of Health and Welfare National Social Housing Survey 2018 key results, 60% of social housing tenants in NSW said that their home meets their needs for thermal comfort (warm in winter, cool in summer). This was the lowest proportion recorded for any of the amenities listed in the survey, with the third lowest being for energy efficiency (77%). The survey also found that after safety/security of home (97%), thermal comfort (96%) was the next most important amenity for social housing tenants.³

The Victorian Healthy Homes Program involved a randomised controlled trial to measure the impact of an energy efficiency and thermal comfort home upgrade on temperature, energy use, health and quality of life for 1,000 low income households over a 3 year period. Analysis of results found relatively minor upgrades (average \$2,809) had wide-ranging benefits over the winter period. Exposure to cold temperatures (<18°C) was reduced by 43 minutes per day and health benefits of the upgrades were reflected in cost savings, with \$887 per person saved in the healthcare system over the winter period.⁴

2 <https://www.bsl.org.au/research/publications/power-pain/>

3 <https://www.aihw.gov.au/reports/housing-assistance/national-social-housing-survey-2018-key-results/contents/table-of-contents>

4 <https://www.sustainability.vic.gov.au/research-data-and-insights/research-reports/the-victorian-healthy-homes-program-research-findings>

Scope

This *Strategy* applies to all LAHC activities across the social housing portfolio, including LAHC owned properties managed by the Department of Communities and Justice.

The *Strategy* aims to:

- provide a context for policy and program development that improves the resilience of social housing and wellbeing of social housing residents
- establish LAHC’s priorities for the next three years
- detail the actions that LAHC will take to improve the sustainability of new and existing social housing dwellings. These focus on implementing innovative policies and programs to reduce carbon emissions, improve resource efficiency, reduce risk and adapt to climate change.

LAHC has the opportunity to directly and indirectly influence environmental sustainability outcomes through various activities, as outlined below:

Direct	Indirect
<ul style="list-style-type: none">• Policy and strategy• Strategic planning• Design, construction and retrofits of properties• Maintenance of properties• Contractual arrangements with contractors• Procurement	<ul style="list-style-type: none">• Partnerships• Education• Advocacy• Sponsorship• Lobbying

LAHC will implement environmentally sustainable policies, building and asset management practices, in ways which add value to the portfolio and reduce costs for social housing households. Improving the environmental sustainability and resilience of LAHC’s portfolio is a key priority of LAHC’s Strategic Asset Management Plan and Portfolio Strategy.

LAHC acknowledges the challenges in maintaining the physical condition of social housing stock to an acceptable standard, mainly due to the financial constraints and the ageing of the social housing portfolio. The below-market rental income derived from social housing is inadequate to cover increasing maintenance costs and property upgrades.

As LAHC is self-funded, it needs to generate its own income to build new social housing and maintain existing properties. We generate some income through rent, but this does not cover the cost to manage, maintain and grow our portfolio. When LAHC sells a home, all the proceeds are re-invested into building or upgrading other LAHC homes. As demand for maintenance and property upgrades increases, additional funds will be required beyond government grants and divestment of assets.

Renewal of social housing properties and estates through partnerships with the private sector and community housing providers presents opportunities to deliver new housing, community facilities and open space that support vibrant communities, connect with Country, and achieve a sense of place. LAHC’s development partners are encouraged to use innovative approaches to drive leading sustainability outcomes, and to reduce carbon emissions, improve thermal comfort and reduce resident utility bills for new housing. LAHC also works in partnership with Community Housing Providers to assist them improve environmental sustainability outcomes for existing social housing under their management.

This Strategy outlines LAHC’s priorities and policy positions with respect to sustainability that contribute to informing consistent project requirements and decision-making for larger and developer led or Community Housing Provider led renewal projects.

The Strategy outlines opportunities over the next three years for LAHC to improve the environmental sustainability of new and existing social housing. Not all actions will be fully delivered over the three year timeframe. Business cases and funding proposals for NSW Treasury will be developed to assist implement actions.

Actions will be delivered through the construction of new social housing, upgrades to existing properties, education and advocacy programs, and partnerships with the social housing sector, government agencies, energy utilities and research organisations.

Relevant Policies, Plans and Strategies

The development of this *Strategy* has taken into consideration the following policies, plans and strategies:

NSW Government	
<ul style="list-style-type: none">• NSW Government Net Zero Plan Stage 1: 2020-2030• NSW Climate Change Adaptation Strategy• State Environmental Planning Policy (Building Sustainability Index: BASIX)• NSW Government Our Place on Country Aboriginal Outcomes Strategy 2020-23• NSW Water Strategy• NSW Government Circular Economy Policy Statement• NSW Waste and Sustainable Materials Strategy 2041• NSW Government Resource Efficiency Policy	
LAHC	<ul style="list-style-type: none">• LAHC Portfolio Strategy• LAHC Heating and Cooling Policy• LAHC Dwelling Requirements• LAHC Component Requirements• Good Design for Social Housing

Priorities

The seven priorities that underpin the vision and action plan are:

- **Improve the energy and water efficiency of new and existing social housing** - Delivering net zero ready new dwellings and upgrading existing dwellings will support sustainable communities and reduce resident utility bills.
- **Reduce carbon emissions by 50% by 2030 (compared to FY19 baseline)** - LAHC will deliver policies and programs that support the NSW Government’s commitment to halve our state’s emissions by 2030.
- **Improve thermal comfort and indoor air quality** - New dwellings and upgrades can improve health and well-being of social housing residents.
- **Reduce environmental risks and continually improve environmental performance** - Proactive management of environmental risks will minimise environmental impacts from the construction and maintenance of social housing properties.
- **Recognise and support Aboriginal and Torres Strait Islander people** - Social housing can support the wellbeing of Country, celebrate Aboriginal and Torres Strait Islander people’s living culture and knowledge, and help promote sustainable land and water management practices.
- **Integrate circular economy opportunities** - The delivery and maintenance of social housing properties can promote long-lasting design, maintenance, repair, recycling and re-use.
- **Adapt to climate change** - Climate change adaption strategies and policies will allow LAHC to create more resilient social housing to proactively anticipate the short, medium and long term impacts of climate change.

LAHC will be developing programs to address all the priorities within its available funding envelope and/or through alternative funding opportunities within government.

Case Study

Midtown, Macquarie Park (Ivanhoe)

Partnering with the private sector to renew older housing estates allows LAHC and its partners to leverage innovative approaches to deliver ‘best in class’ sustainability outcomes. This includes reducing carbon emissions and creating vibrant modern communities with improved amenity, liveability and green spaces.

The Midtown Macquarie Park (former Ivanhoe public housing estate) redevelopment will seamlessly integrate social, affordable and private housing. Midtown will embrace leading edge sustainable urban development design practice with 5 StarGreen Star Building and As Built for all buildings and 6 Star Green Star Communities ratings.

The precinct will be 100% carbon neutral in operations through the use of smart metering technology, 1.5MW of solar photovoltaics, energy efficient appliances and will provide low-cost electricity to all end users, and low-cost heating to all social housing residents.

Connectivity and permeability of the urban design will encourage use of public transport. The redevelopment will include 50 car share spaces and provide at least one bicycle parking space for each dwelling. Integrated Water Cycle Management will be achieved through the collection of rainwater for reuse. The redevelopment will also preserve and enhance the Sydney Turpentine Ironbark Forest and the Shrimptons Creek Riparian Corridor.



Artist impressions of the development

Case Study

Solar Panels & Air Conditioners for Social Housing Residents

LAHC has retrofitted solar panels at over 6,700 social housing dwellings to reduce carbon emissions and energy bills for social housing residents. Solar panels have been prioritised for properties in Far West NSW and Regional areas that experience hot summers and cold winters.

Far West NSW experiences more heatwaves which have become longer, hotter and more frequent. Air conditioners are an important climate change adaptation measure to reduce heat stress. LAHC has retrofitted air conditioners at 2,500 dwellings in Far West NSW and Regional NSW to replace aged flued gas, electric space heaters and wood fire heaters. Solar panels and air conditioners help social housing residents to heat and cool their home, without facing higher electricity bills.

In March 2022, LAHC surveyed 60 residents with solar panels and air conditioners to collect information on client satisfaction, energy savings and thermal comfort. The majority of residents were satisfied or very satisfied with their new solar panels (92%) and air conditioner (93%). Residents reported that their new air conditioner was easy to operate (87%), improved comfort of living areas in summer months (92%), and reduced energy bills (78%).



Energy efficient air conditioner install at LAHC property in Bourke



Solar panels installed on LAHC property in Dubbo

Action Plan

Priority 1: Improve the energy and water efficiency of new and existing social housing

Objectives:

- Achieve industry-leading water and energy efficiency
- Appliance upgrades & retrofit programs informed by life cycle cost and benefit analysis
- Reduced energy and water costs for social housing households

No.	Actions	23/24	24/25	25/26
1.1	Develop an Asset Register to assist prioritise energy and water efficient appliance upgrades and retrofit programs	✓	✓	✓
1.2	Support social housing residents to receive energy and water efficient appliances	✓	✓	✓
1.3	Work in partnership with the Department of Planning and Environment Water Group and water utilities to deliver water efficiency upgrades at social housing dwellings		✓	✓
1.4	Improve the monitoring and reporting of water usage to facilitate prompt repair of water leaks	✓	✓	✓
1.5	Conduct research on the performance of rain water tanks to inform design specifications and maintenance programs	✓		

Priority 2: Reduce carbon emissions by 50% by 2030 (compared to FY19 baseline)

Objectives:

- Accelerate the installation of energy efficient appliances that can be powered by renewable energy
- Solar panel installations achieve parity with national solar installs (approximately 30% of homes nationally have solar panels compared to 7% of LAHC dwellings)
- Support the delivery of net zero ready homes that have an energy-efficient thermal shell and appliances

No.	Actions	23/24	24/25	25/26
2.1	Develop & implement Net Zero Policy	✓	✓	✓
2.2	Replace natural gas appliances with electric for new and existing social housing, where practicable	✓	✓	✓
2.3	Facilitate the installation of solar panels on new and existing social housing in accordance with LAHC's Heating & Cooling Policy	✓	✓	✓
2.4	Install solar panels and air conditioners for all new Class 1 dwellings (e.g. cottages, townhouses and villas) and investigate opportunities for extension into Class 2 dwellings (e.g. manor houses and residential flat buildings), Class 3 dwellings (e.g. new generation boarding houses) or mixed typologies (e.g. elements of Class 1 and Class 2 within same project)	✓	✓	✓
2.5	Support industry led targets and certification schemes for low emissions building materials			✓
2.6	Embed sustainable building material standards and targets into the design, construction & maintenance of social housing		✓	✓

2.7	Pilot the design and delivery of net zero social housing projects, where identified.		✓	✓
2.8	Upgrade electricity meter boards in existing dwellings to support the roll out of smart electricity meters	✓	✓	✓

Priority 3: Improve thermal comfort and indoor air quality

Objectives:

- Improve the thermal and passive performance of new and existing social housing dwellings
- Prioritise the removal of wood fire heaters and aged flued gas space heaters to improve indoor air quality
- Improve the identification, mitigation and management of mould to reduce tenant health risks

No.	Actions	23/24	24/25	25/26
3.1	Retrofit ceiling insulation, wall insulation & draught proofing through re-roofing, re-cladding, door replacement & fire safety upgrade programs, where practicable	✓	✓	✓
3.2	Replace wood fire heaters and aged fixed space heaters with air conditioners and solar panels in accordance with LAHC's Heating and Cooling Policy	✓	✓	✓
3.3	Develop & implement a Mould Policy	✓	✓	✓
3.4	Conduct risk based proactive mould remediation and mitigation programs	✓	✓	✓

Priority 4: Reduce environmental risks and continually improve environmental performance

Objectives:

- Proactively manage environmental risks and implement risk reduction strategies
- Minimise environmental impacts from the construction, maintenance and operation of social housing assets
- Reduce waste generation throughout the housing lifecycle, promote re-use of materials and reduce illegal dumping

No.	Actions	23/24	24/25	25/26
4.1	Implement, monitor and evaluate LAHC's Contaminated Land Management Policy, Procedure and Processes	✓	✓	✓
4.2	Implement, monitor and evaluate LAHC's Environmental Incident Procedure	✓	✓	✓
4.3	Support construction and maintenance contractors to minimise the environmental impacts of their activities and continually improve environmental performance	✓	✓	✓
4.4	Work in partnership with contractors and local councils to proactively reduce illegal waste dumping		✓	✓

Priority 5: Recognise and support Aboriginal and Torres Strait Islander people

Objectives:

- Collaborate with our First Nations' communities to care for Country
- Support the delivery of environmental programs for Aboriginal and Torres Strait Islander people
- Incorporate the perspectives of Aboriginal and Torres Strait Islander people in environmental policy and program development

No.	Actions	23/24	24/25	25/26
5.1	Continue to support environmental programs to Aboriginal and Torres Strait Islander by partnering with the Aboriginal Housing Office (AHO) to deliver programs	✓	✓	✓
5.2	Include Aboriginal and Torres Strait Islander people and cultural knowledge to improve the planning and delivery of environmental programs	✓	✓	✓
5.3	Strengthen Aboriginal and Torres Strait Islander people employment opportunities through procurement policies for construction and maintenance of social housing	✓	✓	✓
5.4	Support LAHC staff to embed Aboriginal and Torres Strait Islander cultural knowledge in the delivery and maintenance of social housing	✓	✓	✓

Priority 6: Integrate circular economy opportunities

Objectives:

- Support and promote use of products and materials with recycled content, low embodied carbon, minimal pollution, re-use options, and environmental stewardship
- Incorporate circular economy principles into the design and implementation of construction and maintenance contracts

No.	Actions	23/24	24/25	25/26
6.1	Develop circular design targets and reporting frameworks for procurement of construction and maintenance activities		✓	✓
6.2	Promote use of materials with low carbon, recycled content, Environmental Product Declarations and Third Party Environmental Certification	✓	✓	✓
6.3	Incentivise contractors to engage with supply chains that commit to circular economy principles		✓	✓

Priority 7: Adapt to climate change

Objectives:

- Make the social housing sector more resilient to the impacts of climate change through the implementation of effective climate risk management
- Build, maintain and upgrade social housing dwellings to prevent, withstand and recover from climate change impacts
- Mitigate climate impacts and invest in clean technologies and climate resilient activities
- Support social housing residents to maintain wellbeing and prosperity by adapting and avoiding climate change impacts

No.	Actions	23/24	24/25	25/26
7.1	Assess, treat and monitor climate change risks in alignment with the Climate Risk Ready NSW Guide and climate change projections	✓	✓	✓
7.2	Develop climate change risk thresholds and a prioritisation framework to guide the development of adaptation action plans and improve LAHC's adaptive capacity	✓	✓	✓
7.3	Prepare & implement a LAHC Climate Change Adaptation Plan	✓	✓	✓
7.4	Develop metrics to assess implementation of adaptation measures for addressing climate change risks and improve the organisation's climate risk maturity	✓	✓	✓

Case Study

Communal Solar System & Shared Heat Pump Hot Water

In December 2020, LAHC completed a 12 unit, two storey social housing development for seniors and people with a disability, in Miller in Sydney's south-west. The Miller project piloted an innovative communal solar energy solution to power hot water for social housing tenants. This involved a 24.75kW solar system, and six energy efficient heat pumps (one heat pump for each two units) to deliver free hot water to tenants.

The project achieved a BASIX Energy score of 78 (well above the required score of 45), along with an average NatHERs rating of 7.7. Other sustainability features, include rainwater harvesting, passive solar design, ceiling fans and no natural gas.

The project aimed to support resilient communities and meet the needs of senior social housing clients through enhanced thermal comfort and wellbeing, low energy bills, and high levels of accessibility. The Miller project was shortlisted for the 2021 Sustainability Award in the Multi-Residential Dwelling category.



LAHC Project development team



Heat Pump Hot Water System installed in Miller project

Review and reporting

This *Strategy* will be reviewed and updated every three years.

Implementation plans will be developed for key actions and status reports prepared to monitor progress. These plans will be used to guide resourcing, budget allocations and funding proposals.

Progress on actions in the Strategy will be reported to LAHC's Executive on an quarterly basis.



