

Appendix J-2



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ENVIRONMENTAL SUSTAINABILITY RESEARCH AND ANALYSIS

TO INFORM CONTROLS IN THE NORTHERN
BEACHES LOCAL ENVIRONMENTAL PLAN

March 2024

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Background and Policy context

The NSW Government's Climate Change (Net Zero Future) Act 2023 commits the government to deliver net zero emissions by 2050. Housing that is built today needs to be built to achieve these net zero commitments.

In December 2019, Council adopted 'Protect.Create.Live', the Northern Beaches Environment and Climate Change Strategy 2040 that sets out clear and ambitious commitments to accelerate action on climate change. These commitments are aligned to the Paris Climate Agreement 'to limit global temperature rise to well below 2 degrees Celsius above pre-industrial levels and to strive for 1.5 degrees' and include¹:

- Aspiration to achieve net zero emissions by 2030 with all new buildings net zero by 2030.
- 50% of suitable premises with solar panels installed by 2030.
- A 50% reduction in community emissions by 2040 and a commitment to net zero emissions by 2050.

According to Towards 2040 (Local Strategic Planning Statement) 2020, Residential dwellings contribute to the majority of the LGA's carbon emissions (63%), mainly from electricity and transport.² Action 7.3 of Towards 2040 outlined Council's intent to develop LEP and DCP controls to improve energy, water and waste efficiencies in new developments and require sustainability certification for larger scale developments in strategic centres, employment hubs and areas subject to urban intensification.

Council's LEP/DCP Discussion paper³, exhibited in 2021, further outlined the proposed approach to improve standards for larger scale developments, firstly by awaiting the outcomes of the final Design and Place SEPP and secondly adopting the City of Sydney's performance standards for net zero energy buildings ideally within the LEP (subject to DPE support).

Whilst the Design and Place SEPP did not get implemented by the State Government, the Sustainable Buildings State Environmental Planning Policy (Sustainable Building SEPP) implemented the following in October 2023:

- Residential development: Increased thermal performance standards from an average of 5.5-6 stars to 7 stars NatHERS rating; Greenhouse gas emission reductions between 7% and 11% and updates to the online tool to introduce a materials index to measure embodied emissions of construction materials (new dwellings).
- Non-residential development: embodied emission measurement and reporting for all developments; energy standards for large commercial development with energy performance to be verified after the building is occupied and offsets purchased for residual emissions; minimum water standards for large commercial development and certain developments to be 'all electric' or capable of converting to operate without fossil fuels by 2035⁴.

¹ Northern Beaches Council 2019, 'Protect. Create. Live Northern Beaches Environment and Climate Change Strategy 2040', Available at <<https://files-preprod-d9.northernbeaches.nsw.gov.au/nbc-prod-files/documents/policies-register/environment-and-climate-change-strategy/environment-and-climate-change-strategy-and-plans/environment-climate-change-strategy-2040.pdf>> [accessed 24.04.2024]

² Northern Beaches Council 2020, 'Towards 2040 Local Strategic Planning Statement', Available at <<https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Common/Output/LoadGenWebDoc.ashx?id=z8E8mSOvjKAV0A60ki4OEg%3d%3d>> [accessed 24.04.2024]

³ Northern Beaches Council 2021, 'LEP/DCP Discussion Paper Planning our Sustainable Future', Available at <<https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Common/Output/LoadGenWebDoc.ashx?id=dHRL%2fD5XmPEV0A60ki4OEg%3d%3d>> [accessed 24.04.2024].

⁴Department of Planning, Housing and Infrastructure 2024, 'Sustainable Buildings SEPP', Available at <<https://www.planning.nsw.gov.au/policy-and-legislation/buildings/sustainable-buildings-sepp>>. [accessed 24.04.2024]

Whilst Council supports recent improvements in Sustainable Buildings SEPP, many developments and activities of relevance to our Local Government Area will be excluded from having to meet higher BASIX thermal performance and energy standards, including:

- Residential apartment buildings up to 5 storeys. This was justified by cost-benefit analysis modelling that showed the benefits of energy bill savings from households that meet higher standards are not enough to cover the extra upfront costs.
- No changes were made to the BASIX water standards for residential development.

The Sustainable Buildings SEPP also excludes non-residential development that involve the erection of a new building with a capital investment value of less than \$5 million or the alterations, enlargements or extensions of an existing building that has a capital investment value of less than \$10 million. Certain types of development and land use categories are excluded including:

- Residential care facilities
- Development in the following zones: Rural RU1-2-3, E5 Heavy Industrial (IN3 Heavy Industrial), Conservation C1-2-3 and Waterways 1-2-3-4.
- Shopping centres and retail developments

The commencement of the *Environmental Planning and Assessment Regulation 2021* on 1 March 2022 also saw the removal of the requirement for BASIX Certificates for development applications proposing the construction of larger boarding houses, hostels and co-living housing⁵.

Key findings

Existing Provisions

A review of the effectiveness of the Council's current DCP controls in addressing the environmental sustainability of larger-scale developments has identified that the Green Star-based requirements are limited in their effectiveness, partly due to their current application being restricted primarily to commercial and industrial developments with a gross floor area exceeding 2,000m² under Clause C5.22 (Environmental Sustainability) of the Pittwater 21 DCP. Additionally, in the case of Part G1 Dee Why Town Centre, Section 9 (Sustainability) of the Warringah DCP, its applicability is confined to the Dee Why Town Centre exclusively, and specifically to new developments with a cost of works equal to or greater than \$5 million. Extracts from each relevant DCP control are provided below:

9 Sustainability

Objectives

- To supplement controls contained within Part D22 Conservation of Energy and Water.
- To ensure substantial new developments incorporate best practice sustainability.
- To establish benchmarks for building rating scheme compliance.

Requirements – General

1. New development with a cost of works equal to or greater than \$5 Million must achieve a minimum 4 Star, Green Star – Design and As Built rating in the Green Building Council of Australia rating system.
2. Compliance with another rating tool may be considered by Council, so long as it can be demonstrated this tool:
 - a. Is a holistic third party certifying green building rating system covering at least energy, indoor environmental quality, water, transport and waste;
 - b. Awards ratings following a review by impartial third-party certifying bodies that meet the 'Principles for Inspiring Confidence' outlined in the international standard ISO/IEC 17021.

Note

Green Star is a sustainability rating system by the Green Building Council of Australia. Green Star – Design and As Built, Interiors and Communities projects can achieve a Green Star certification of 4 to 6 Star Green Stars. The Green Star rating system is:

- 4 Green Star: Best Practice
- 5 Green Star: Australian Excellence
- 6 Green Star: World Leadership

⁵*Environmental Planning and Assessment Regulation 2021* (NSW), Sch. 7, Available at <<https://legislation.nsw.gov.au/view/html/inforce/current/sl-2021-0759#sch.7>>. [accessed 24.04.2024]

C5.22 Environmental Sustainability

Land to which this control applies

All Land

Uses to which this control applies

Amusement centre
Boat building and repair facility
Business development
Commercial premises
Educational establishment
Entertainment facility
Function centre
Health services facility
Industrial development
Industrial retail outlet
Industrial training facility
Information and education facility
Light industry
Public administration building
Recreational facility (indoor)
Storage premises
Vehicle body repair workshop
Vehicle repair station
Warehouse or distribution centre

Outcomes

Apply principles and processes that contribute to ecologically sustainable development (ESD).

Controls

Any development with a gross floor area of 2,000m² or more must achieve a minimum 4 Star Green Star Design and As Built rating certified rating from the Green Building Council of Australia (GBCA), where there is an applicable Green Star rating tool.

Variations

Where it can be demonstrated that the above requirement is unreasonably onerous or where no applicable GreenStar tool exists, it must be demonstrated that the development achieves sustainability outcomes equivalent to a 4 Star Green Star Design and As Built rating.

Where the Green Star Design and As Built tool is not utilised to demonstrate the level of sustainability of the proposal, a sustainability report must be submitted with the development application clearly demonstrating how the development addresses sustainability. The issues to be addressed within the sustainability report include, but are not limited to, the following:

- Management of the development which is to be coordinated with all stakeholders, ensuring that all are aware of the required sustainable outcomes.
- Commitment to and incorporation of delivery of sustainable initiatives and performance monitoring.
- Education of users and stakeholders to foster sustainable behaviour and systems.
- Increased comfort and wellbeing of the occupant, through ventilation and thermal, visual and acoustic comfort.
- Reduced exposure to pollutants through low toxicity environments and the removal of harmful environments.
- Reduction in greenhouse gas emissions and peak electricity demand.
- Reduction in carbon intensive modes of transport through the provision of access to public transport options, access to amenities and the provision of facilities to encourage bicycle usage, as well as the encouragement of the use of alternate sustainable transport options.
- Reduction in potable water consumption.
- Consideration of the lifecycle assessment of materials and products used in construction on fit outs of the development.
- Reduction in landfill waste across the entire project life cycle.
- Where required, the remediation of the site in accordance with state policy.
- Stormwater runoff management and reduction.
- Reduction in heat island effect through the reduction of hard surfaces.
- Reduction of light pollution.

Certification verified by a GBCA Accredited Professional or other recognised sustainability professional that the development achieves a 4 Star Green Star Design and As Built rating or equivalent sustainability rating is to be received prior to the issue of Occupation Certificate.

Advisory Notes

Refer to Green Building Council of Australia website.

The indoor environmental quality of occupants can be improved by:

- natural ventilation and air circulation that, in turn, reduces the need for mechanical ventilation;
- optimising the thermal comfort of occupants through the zoning of sections of the dwelling that enables individual control of heating and cooling;
- installation of lighting systems and fittings appropriate for the use/activity located in that part of the building(s), resulting in reduced energy consumption; and
- selecting materials and furniture from renewable resources that have minimal emission of toxic substances, have minimal and safe production techniques and that produce minimal waste. Timber should be reused or come from sustainable forestry practices.

Research

Towards 2040 and LEP/DCP Discussion Paper commits to improving sustainability in both small- and large-scale development, the decision was made to include a new Local Provision aimed at enhancing sustainability standards for larger-scale developments across the entire LGA. Increased standards for smaller scale developments will be incorporated into the DCP.

Council conducted a comprehensive review of existing LEP clauses that address improving the sustainability of larger-scale development, including Georges River LEP - Clause 6.11 (Environmental Sustainability), Ryde LEP Clause 6.6 (Environmental Sustainability), Penrith LEP Clause 7.4 (Sustainable Development), Sutherland Shire LEP Clause 6.15 (Energy Efficiency and Sustainable Building Techniques for Commercial and Industrial Developments), and City of Sydney LEP Clause 7.33 (Sustainability Requirements for Certain Large Commercial Developments).

The outcomes of this review identified that the proposed Local Provision should have a clear objective of ensuring that development be consistent with best practice principles for the design and delivery of sustainable buildings. It was also considered that the clause should apply to certain residential, employment, mixed-use, and SP4 Enterprise zones that involve the erection of a new building, or alterations or additions to an existing building resulting in an increase of greater than 10% of the gross floor area, where the building is proposed to have a gross floor area of 1,500 square metres or greater. This gross floor area threshold aligns with that required by Georges River LEP - Clause 6.11 (Environmental Sustainability) and Ryde LEP Clause 6.6 (Environmental Sustainability).

Despite the Georges River LEP clause also applying to the ‘change of use of an existing building’, it was considered that this requirement did not align with Council’s aspiration for all 'new buildings' to be net-zero by 2030 and would be unreasonable to apply where a significant amount of additional gross floor area was not proposed. The table below provides a high-level overview of the considerations included within existing LEP clauses that address the environmental sustainability of buildings.

	Georges River 6.11	Ryde 6.6	Penrith 7.4	Sutherland 6.15	City of Sydney 7.33
Objective					
Zones / Area					
Development types					
Threshold					
Water					
Energy					
Indoor environmental quality					
Urban Heat					
Materials					
Transport					
Emissions					
Land use and ecology					
Orientation					
Passive design					
Waste					

Urban Heat

It should be noted that Action 5.3 of Towards 2040 requires that the Council prepare design guidelines and develop LEP and DCP controls for urban tree canopy, urban heat, and UV radiation.

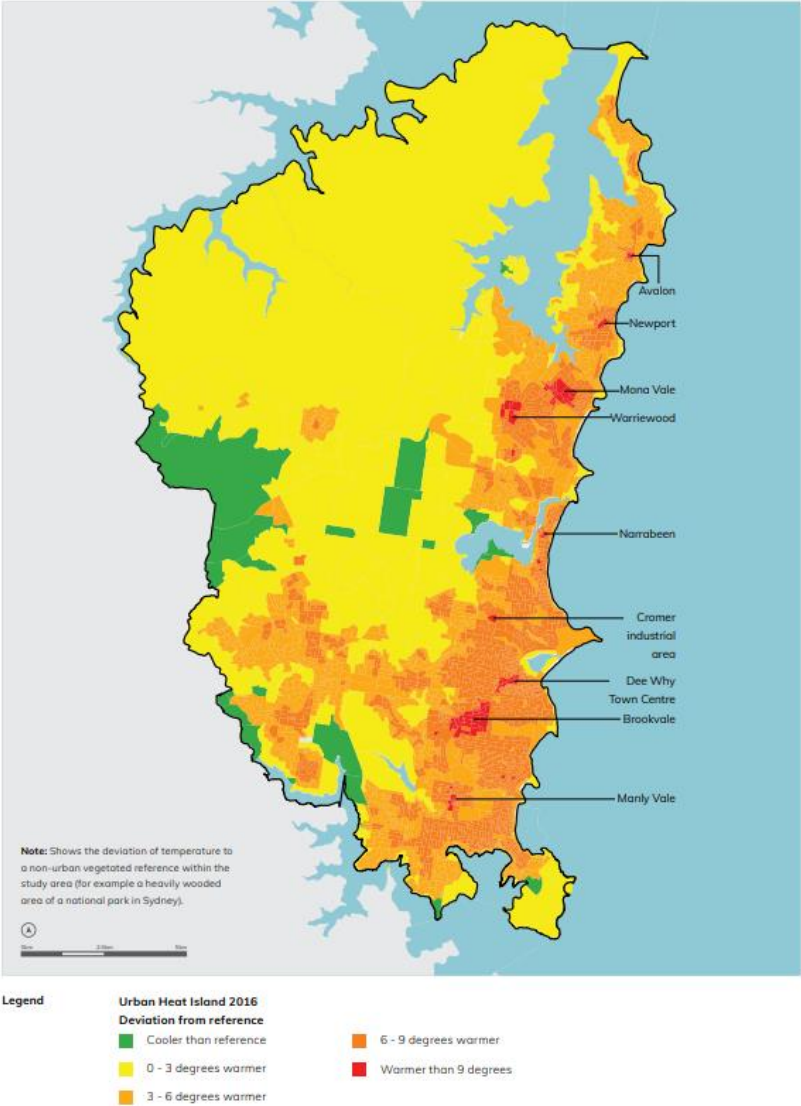
While Council has decided not to proceed with proposing a standalone Urban Heat local provision, as seen in precedents such as Clause 6.3 of the Willoughby LEP (Urban Heat) and Clause 7.30 of the Penrith LEP (Urban Heat), it is proposed that the local provision on Environmental Sustainability will specifically address Urban Heat in subclauses (3)(f) and (3)(g). See extract below:

- (f) *the façade, roof and paved surfaces are designed to reduce adverse effects of urban heat on the surrounding land, including private open space and the public domain,*
- (g) *maximises green infrastructure by accommodating sufficient tree canopy, open space and deep soil zones to achieve urban cooling and ecological benefits,*

Council also received feedback from the then Department of Planning and Environment (now Department of Planning, Housing and Infrastructure) in December 2023, which supported the

inclusion of a clause to address Urban Heat: *“Urban Heat: Council should consider whether an urban heat clause should apply to specific land uses. For example, commercial premises, industries, residential accommodation, rather than applying broadly to residential and conservation zones. Industrial development for example can be a significant contributor to urban heat.”*

As previously highlighted, these urban heat subclauses apply only to new developments that exceed 1,500sqm of gross floor area and only to certain residential, employment (including industrial), mixed-use zones where the Urban Heat Island Effect is most prominent. Refer to the Northern Beaches Urban Heat Island Map below. The drafting of these subclauses has also been informed by Georges River LEP - Clause 6.11 Environmental Sustainability, which includes specific consideration of Urban Heat, as well as the WSROC Urban Heat Planning toolkit and LEP precedents in Penrith and Willoughby.



Matters for consideration

It is acknowledged that while the Sustainable Buildings SEPP and associated policies (BASIX, NABERS) have significantly increased stringency, modelling, and reporting requirements, there is still a need and opportunity for a supplementary Environmental Sustainability local provision that does not duplicate or add to requirements already addressed elsewhere, such as the National Construction Code, Sustainable Building SEPP, Apartment Design Guide, and other council policies - notably

requirements such as those addressing further passive design measures, which are to be excluded from the proposed local provision.

The inclusion of a new LEP provision seeks to address larger-scale developments (exceeding 1,500sqm of Gross Floor Area) in both residential and non-residential sectors that are not triggered by the requirements of the Sustainable Buildings SEPP, while also addressing other aspects contributing to environmental sustainability.

In particular, the following opportunities to address the sustainability of developments exceeding 1,500sqm of Gross Floor Area:

- **Energy** – requiring consideration be given to the metering and monitoring of energy consumption, including the generation and storage of renewable energy and reduction in peak demand for electricity. It is noted that renewable energy storage or reduction in peak demand for electricity are not specifically addressed for developments subject to BASIX.
- **Water** – requiring consideration of water efficiency, water recycling and minimisation of potable water usage noting there are opportunities to employ measures such as reuse of rainwater to help reduce water bills, allowing population growth using existing water infrastructure and improving drought resilience which are matters that are not specifically addressed for developments subject to BASIX or under the Sustainable Buildings SEPP.
- **Net-Zero** – requiring that the design of buildings have the capability of achieving net zero emissions in operation. It is noted that only prescribed large commercial development (offices, hotels, motels and serviced apartments) are required to have a net-zero commitment in accordance with the Sustainable Buildings SEPP.
- **Urban Heat** – requiring that external surfaces of new buildings are designed to reduce adverse effects of urban heat on the surrounding land and also maximising green infrastructure by accommodating sufficient tree canopy, open space and deep soil zones to achieve urban cooling. It is noted that Urban Heat is not specifically addressed for developments subject to BASIX or under the Sustainable Buildings SEPP.
- **Transport** – requiring electric vehicle and bicycle charging facilities, as well as transport initiatives to reduce car dependence such as providing end of trip facilities and car sharing. It is noted that these matters are not specifically addressed for developments subject to BASIX or under the Sustainable Buildings SEPP.
- **Waste** – requiring circular economy initiatives including waste minimisation and recycling, potential for adaptive re-use and reduced embodied carbon emissions through materials selection. It is noted that most of these matters are not specifically addressed for developments subject to BASIX or under the Sustainable Buildings SEPP.

Recommendation

Draft Northern Beaches LEP Environmental Sustainability Clause

Differing to some extent from several LEP precedents that currently have Environmental Sustainability clauses in force, including Georges River, Ryde, Penrith, Sutherland, and the City of Sydney, the proposed local provision aims to identify opportunities to facilitate the delivery of sustainable buildings while also avoiding duplication with the Sustainable Buildings SEPP and associated policies.

The drafting of the proposed Environmental Sustainability clause also targets specific land-use zones (and areas with typically larger building footprints) where Urban Heat is a particular issue, including the Employment Zones, Mixed-Use Zones, and Residential Zones of the Northern Beaches. A threshold of 1,500 sqm in Gross Floor Area or greater has been identified as the trigger for new buildings and significant alterations and additions. This Gross Floor Area threshold is consistent with both the LEPs for Georges River and Ryde while also encompassing most developments that Council's Design and Sustainability Assessment Panel (DSAP) currently review.

To assist applicants in better understanding the requirements of the clause (inclusive of other relevant council policies addressing sustainability) when submitting a Development Application, Council is developing a Sustainable Buildings Checklist. The applicant's completed checklist would include a summary of commitments that would be reviewed by Council during assessment. While testing and reviews of similar checklists such as that recently developed and implemented by Georges River Council have commenced, Northern Beaches Council will be seeking to develop its own to ensure effectiveness during assessment and ease of use for applicants.

Proposed wording of draft Northern Beaches LEP Clause – Environmental Sustainability:

DRAFT 6.X Environmental sustainability

(1) The objective of this clause is to ensure that development to which this clause applies is consistent with principles of best practice for the design and delivery of sustainable buildings.

(2) This clause applies to development—

(a) on land in the following zones—

- (i) Zone R1 General Residential,
- (ii) Zone R2 Low Density Residential,
- (iii) Zone R3 Medium Density Residential,
- (iv) Zone E1 Local Centre,
- (v) Zone E2 Commercial Centre,
- (vi) Zone E3 Productivity Support,
- (vii) Zone E4 General Industrial,
- (viii) Zone MU1 Mixed Use,
- (ix) Zone SP4 Enterprise.

(b) that involves –

- (i) the erection of a new building, or
- (ii) alterations or additions to an existing building that result in an increase of greater than 10% of the gross floor area.

(3) Development consent must not be granted to development on land to which this clause applies if the building is 1,500 square metres in gross floor area or greater unless adequate consideration has been given to the following in the design of the building—

- (a) water efficiency, water recycling and minimisation of potable water usage,
- (b) generation and storage of renewable energy,
- (c) metering and monitoring of energy and water consumption,
- (d) capability of achieving net zero emissions in operation,
- (e) reduction in peak demand for electricity, including through the use of energy efficient technology,
- (f) the façade, roof and paved surfaces are designed to reduce adverse effects of urban heat on the surrounding land, including private open space and the public domain,
- (g) maximises green infrastructure by accommodating sufficient tree canopy, open space and deep soil zones to achieve urban cooling and ecological benefits,
- (h) electric vehicle and bicycle charging facilities, transport initiatives to reduce car dependence such as providing end of trip facilities and car sharing,
- (i) best practice waste management, including storage and access that promotes the safe and accessible storage and removal of waste and which maximises resource recovery,
- (j) the extent to which building materials and construction techniques are environmentally sustainable and will—
 - i. reduce embodied carbon emissions through materials selection,
 - ii. consider reuse of existing buildings and materials,
 - iii. maximise the useful life of buildings and materials through climate resilient design, materials selection, and design to enable disassembly and reuse,
 - iv. minimise the use of potable water, the generation of emissions and waste during demolition and construction of materials, and
 - v. minimise the impact on nature through sustainable material selection, and selecting products or materials with recycled content.