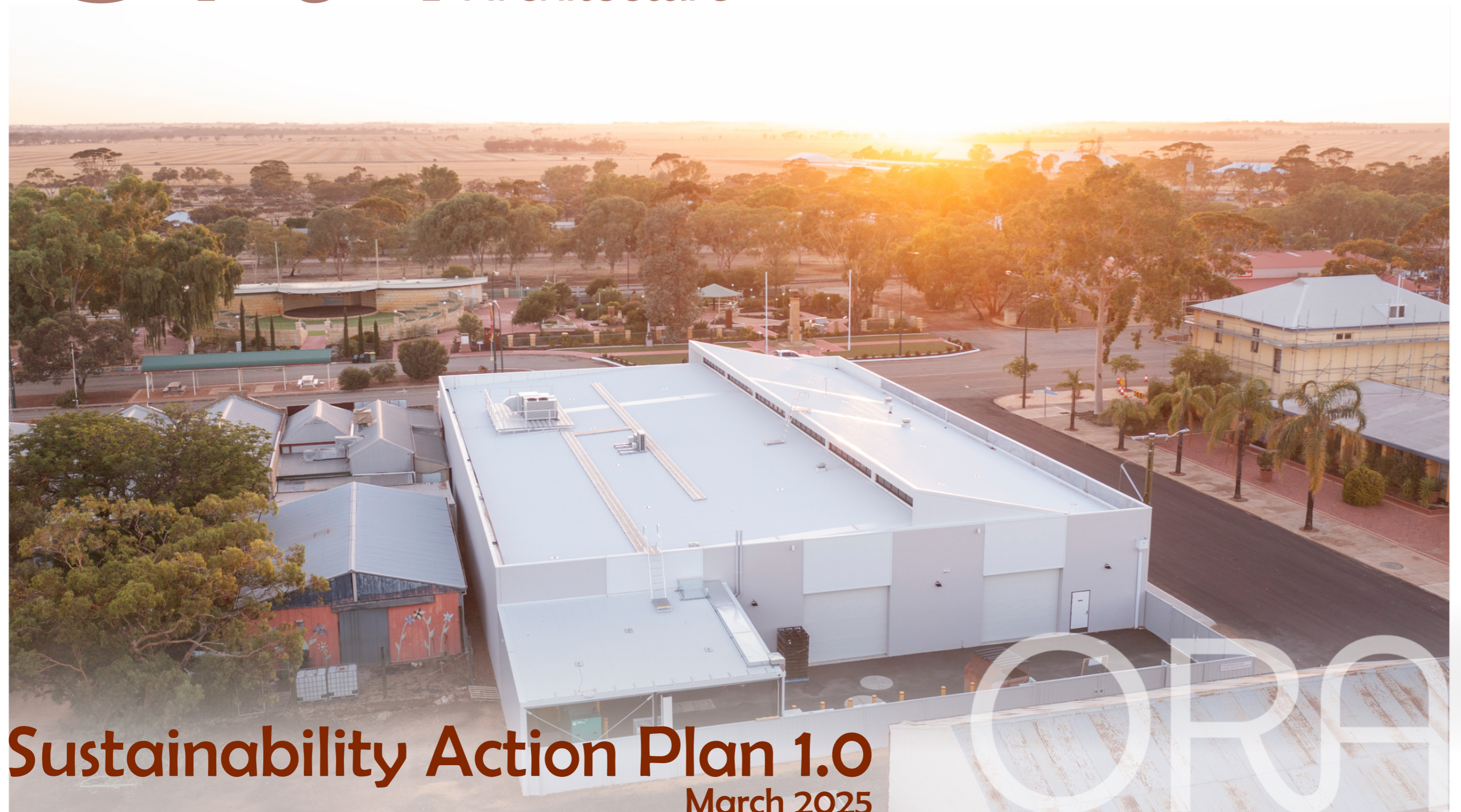
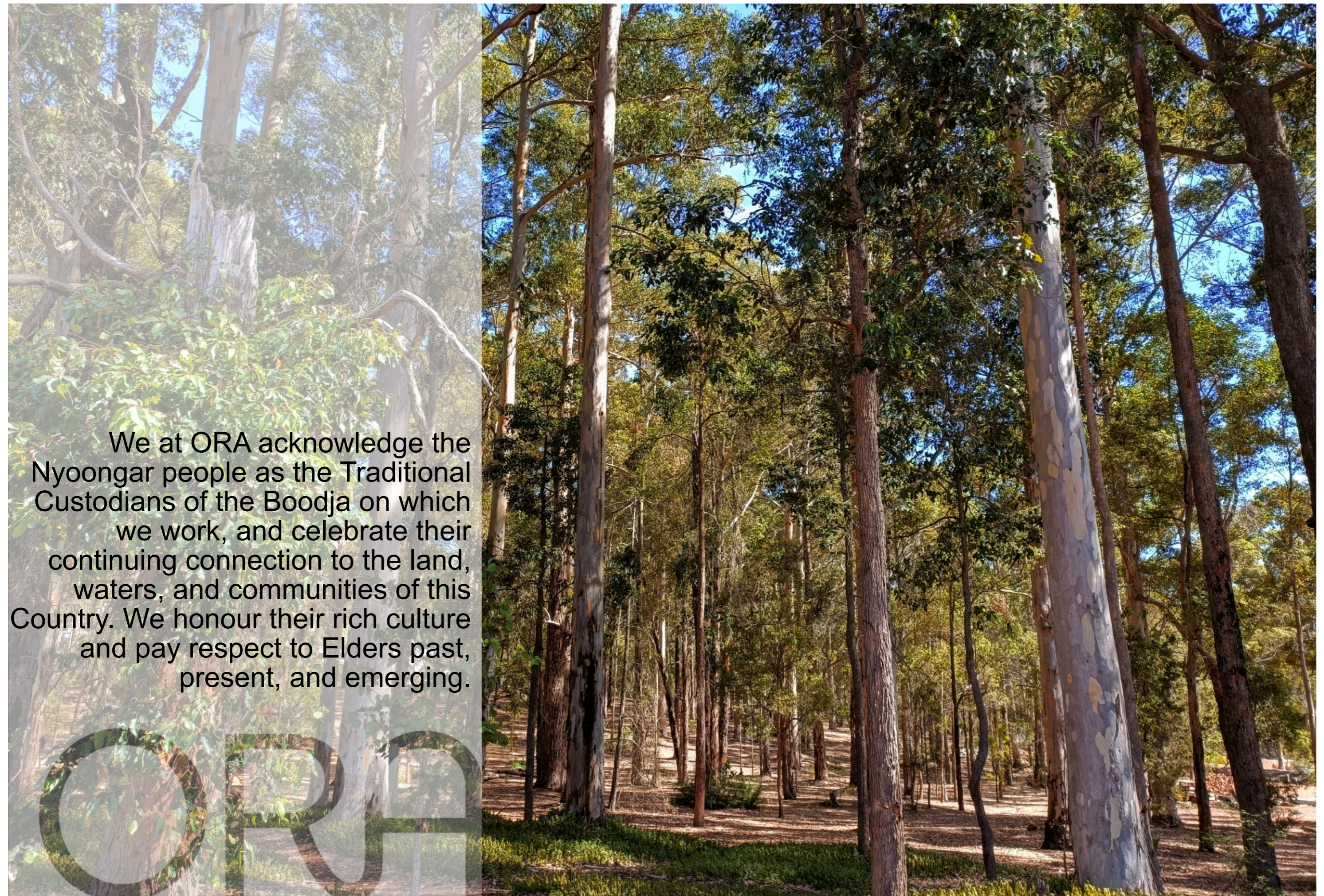


# ORA Office of Regional Architecture



## Sustainability Action Plan 1.0

March 2025



We at ORA acknowledge the Nyoongar people as the Traditional Custodians of the Boodja on which we work, and celebrate their continuing connection to the land, waters, and communities of this Country. We honour their rich culture and pay respect to Elders past, present, and emerging.





## INTRODUCTION

At ORA we recognise the importance and urgency of addressing the global ecological crisis, especially by working to reduce the threat of climate change and biodiversity loss. This crisis impacts both global and local indicators in the Wheatbelt, Great Southern, and Southwest regions of Western Australia and will continue into future generations.

The construction industry contributes to nearly 40% of carbon emissions globally. It is one of the most significant sectors of global resource consumption and pollution, and we, as Architects, have a crucial role in bringing about change in the sector.

This document presents our commitment to sustainability as a practice, guide, and compass for our daily activities. It is a call to our clients, collaborators, and community to move towards a regenerative future.

# OUR COMMITMENT

We strive to be a Sustainable Leader in our field, an agent of change that advocates for the livelihood of future generations through our daily actions in practice operation, project work, community involvement and education.

In 2024, under the direction of Practice Capital, ORA achieved Carbon Neutrality in our operation, and our aim is to advance above this baseline.

We aim to tackle Carbon Emissions, reduce resource consumption and biodiversity loss in every project and community work, in collaboration and through education with our clients, partners, contractors and suppliers.

We are aiming for the stars—a regenerative outcome—a Net Positive beyond the Carbon Neutral target for people, the environment, and society. While this is highly ambitious and not always possible to achieve today, a regenerative mindset elevates our design thinking to a holistic level above which conventional mindset could ever reach.

# GOALS

- a. To maintain a Neutral Carbon status for our practice operations.
- b. To halve the Operational Carbon Dioxide emissions of all our projects by 2030 and progressively toward Net Zero by 2035 (kgCO<sub>2</sub>e/m<sup>2</sup>/year).
- c. To achieve reductions in Embodied Carbon in our projects by 10% each year, with a 50% reduction by 2030 and Net Zero by 2040.
- d. To increase the percentage of endemic (local species) planting to 50% in the landscape projects by 2030.

## DESIGN AND APPROACH

- a. All projects follow our current ORA design philosophy and sustainability frameworks.
- b. We communicate and discuss design philosophy and sustainability frameworks to all ORA practice staff.
- c. All projects, especially in the earlier stages, have discussions of sustainability as a topic at the beginning, during the design process and at the end of the project.
- d. We communicate the benefits of sustainability to our Clients in all projects.
- e. We estimate project Operational Energy based on NCC Energy efficiency and aim to go above and beyond that standard of requirements.
- f. We invite Clients to participate in evaluation of post-occupancy energy usage.
- g. We calculate Embodied Carbon for all projects above \$1m in value and at least 50% of projects under \$1m.
- h. We invite Clients and stakeholders to engage in Sustainability Certification (such as NABER, Green Stars, etc) for projects over \$5m in value.
- i. We advocate for restoration and regenerative approaches in all landscape projects, using strategies such as stormwater management, endemic planting, and biophilic design.
- j. We consider and address all 17 UN SDGs in project-based actions.

## OPERATIONS AND OUTLOOK

We will continuously investigate options for reducing resource and carbon-based energy consumption, especially in transportation, and in maintaining Carbon Neutrality through offsetting. We will ensure our practice operates with fairness, honesty, accountability, and integrity in alignment with other Sustainable metrics of the 17 UN Global Sustainable Development Goals.

## GOAL SETTING AND EVALUATION

- a. We estimate Operational Energy emissions for all projects and set goals for annual incremental improvement and aim for zero as a target goal.
- b. We calculate Embodied Energy and aim for annual improvement toward zero as a target goal.
- c. We invite Clients to undertake post-occupancy Operational Energy evaluation against the designed target.
- d. We review and evaluate landscape outcomes (if applicable) after 1, 3 and 5 years from Practical Completion.

## GOVERNANCE AND REPORTING

- a. ORA Practice Operational Emissions will be audited and reported by the Practice Administrator to Practice Capital for annual analysis and evaluation.
- b. Individual project performance will be audited and reviewed by the Project Architect, the Sustainability Leader, and Director.
- c. Individual project data will be uploaded to the ORA sustainability database by the Sustainability Leader for staff review and evaluation.
- d. We will review data, goals, and targets annually, and revise the ORA SAP accordingly.
- e. Sustainable leader publishes annual outcome vs goal and target on ORA website.

## INTERNAL TRAINING AND EDUCATION

- a. We will continuously address sustainability on every project, especially at the beginning of every stage
- b. We will conduct project sustainability evaluation at the end of each project.
- c. Each registered Architect will undertake at least two sustainability-related CPD per year, with the knowledge outcome of CPD directly translated to a more sustainable design decision process.
- d. We will conduct at least one internal training or internal CPD in sustainability per year.
- e. We will develop at least one sustainability-related CPD session per year, to be presented to the wider peer group, including round table discussion (this can be combined with the internal training).

## OUTREACH AND ADVOCACY

- a. We will address sustainability with Clients at the beginning, during and at the end of projects
- b. We will post at least five social media posts relating to sustainability per year.
- c. We will engage with the broader community about sustainability through round table discussions or sustainability organisations.
- d. We will publish and discuss our research and findings, such as embodied carbon emissions calculations, on our website and social media.
- e. We will be transparent in our goals, attempts, and achievements according to the above criteria.

# 17 UN Sustainable Development Goal (SDGs)

## 1. No poverty:

- 1.1** Engage in social projects such as social housing and co-op projects with meaningful, empowered, and low operational cost designs. (PB) (CE)
- 1.2** Avoid projects that widen or exacerbate the poverty gap or dehumanise poorer populations. (CE)
- 1.3** Source material from reliable sources to avoid exploitation of local populations. (PB)

## 2. Zero-hunger:

- 2.1** Engage in urban farming projects, food/farming education, and regenerative landscapes, especially within urban and human settlements. (CE)
- 2.2** Engage in ecological projects that improve resilience and adaptation to climate change and other human environmental impacts. (CE)
- 2.3** Source material from reliable sources to avoid product that negatively impacts local food production. (PB)

## 3. Good health and well-being:

- 3.1** NCC standard (given) and other higher standards, such as biophilic design. (PB)
- 3.2** Design for a healthy indoor environment (Low VOC, non-toxic, non-hazardous materials, plenty of fresh air). (PB)
- 3.3** Design for beneficial interaction with the natural environment, especially urban while reduce diseases and illnesses (such as malaria). (PB)
- 3.4** Design for active body and active mind and lower traffic accident incidence. (PB)
- 3.5** Design for human physical interaction, especially cross-generational. (PB)

## 4. Quality education:

- 4.1** Engage in affordable, accessible and inclusive education, such as rural and projects and marginalised populations. (PB)
- 4.2** Engage in formal (CPD) and informal education in sustainability and sustainable development to staffs, stakeholders and wider public. (CE)
- 4.3** Design education facilities that foster learning and engagement (mind and body). (PB)

## 5. Gender Equality:

- 5.1** Support both genders in professional development as well as parental participation via flexible working arrangements. (PO)
- 5.2** Support the disadvantaged genders of the profession. (PO)
- 5.3** Design for more balanced usage of both genders as well as LGBT+. (PB)

## 6. Clean water and sanitation:

- 6.1** Avoid products that contaminate or overuse local water resources. (PB)
- 6.2** Embrace and design for low or zero water use for remote sanitary facilities. (PB) (CE)
- 6.3** Design for either rainwater collection or groundwater discharging. (PB)
- 6.4** Consider freshwater contamination from sanitary facilities. (PB)

- 6.5** Avoid projects that negatively impact freshwater resources. (PB) (CE)

## 7. Affordable and Clean Energy:

- 7.1** Embrace decentralised power generation and storage. (PB)
- 7.2** Reduce and eliminate where possible Carbon base electricity and energy sources. (PB) (PO)
- 7.3** Pay it forward for green electricity via investment or green power scheme. (PO)
- 7.4** Reduce carbon emissions from travel. (PO)
- 7.5** Reduce Operational and Embodied Energy of buildings via building design practices as stated above. (PO)

## 8. Decent work and economic growth

- 8.1** Select material with a reputable supplied chain to avoid exploitation and slavery. (PO)
- 8.2** Specify material, construction methodology and project procurement to encourage local trades, apprenticeship, or trainee uptake (emphasising investment in local human resources) of all, and especially remote, projects. (PO)
- 8.3** Utilise remote working to enable employment from a distance. (PO)
- 8.4** Pay interns and graduates in accordance with the current Architecture Award and the Fair Work Act. (PO)

## 9. Industry, Innovation and Infrastructure

- 9.1** Research and development of alternative ways of building that produce less waste, and lower carbon footprint. (CE)
- 9.2** Local trades and materials are prioritized over imported materials and trades through design solutions. Select materials that are readily available and easily recycled. (PB)
- 9.3** Embrace timber, especially locally sourced timbers, as well as recycled timbers, to encourage the timber industry and infrastructure. (PO, CE)

## 10. Reduce Inequalities (related to SDG1, 2 and 5)

- 10.1** Design and promote equality in buildings for income, age, gender, disability, religion, and ethnicity, embrace and facilitate inclusivity and interaction of diverse demographic backgrounds. (PB)
- 10.2** Engage in projects addressing inequalities, such as social projects. (CE)

## 11. Sustainable Cities and Communities:

- 11.1** Design for a people-centered future rather than a vehicle-oriented urban environment, focusing on walking, cycling, and public transport rather than car use. (PB)
- 11.2** Design for inclusive and safe mixed-use urban complexes with rich vegetation and biodiversity. (PB)
- 11.3** Design for local economic development. (PB)
- 11.4** Research and engage co-op housing typology. (CE)

## 12. Responsible consumption and Production

**12.1** Refer to Building design practice to reduce Operational and Embodied Carbon of buildings. (PB)

**12.2** Avoid extravagant projects that promote wastefulness and inequalities. (PB, PO)

## 13. Climate Action (related to SDGs 7)

**13.1** Refer to Building design practice to reduce Operational and Embodied Carbon of buildings. (PB)

**13.2** Avoid extravagant projects that promote wastefulness and inequalities. (PB, PO)

**13.3** Design in anticipation of the impact of climate change, such as extreme weather conditions, loss of biodiversities. (PB)

## 14. Life below water:

**14.1** Selecting non-toxic material and responsible sources that don't pollute waterways. Reducing plastic and micro-plastic generating materials and construction methods. Consider the waterway and potential pollution during design. (PB)

**14.2** Raise awareness of waterway pollution and climate change's impact on ocean life. Promote preservation and protection of existing native wetlands, marshes, and other ecosystems. Foster and promote understanding of natural ecosystems. (CE)

## 15. Life on land:

**15.1** Incorporate landscape components into every project where possible to enhance and improve local ecosystems and foster appreciation of the local natural environment. (PB)

**15.2** Selecting non-toxic material and responsible sources that don't degrade or damage local forest, grassland, and other land ecosystems. (PB)

## 16. Peace, Justice, and strong Institutions:

**16.1** Participate and promote a strong political system through research and discussion of political events, values, government policies, etc. (CE)

**16.2** Support society's expression of its values through buildings and public space.

**16.3** Refer to SDGs 5,10 and 11.

**16.4** Pay attention to the procurement and construction process to discourage theft, corruption, bribery, and other forms of organized crime. (PB)

## 17. Partnership for the goals:

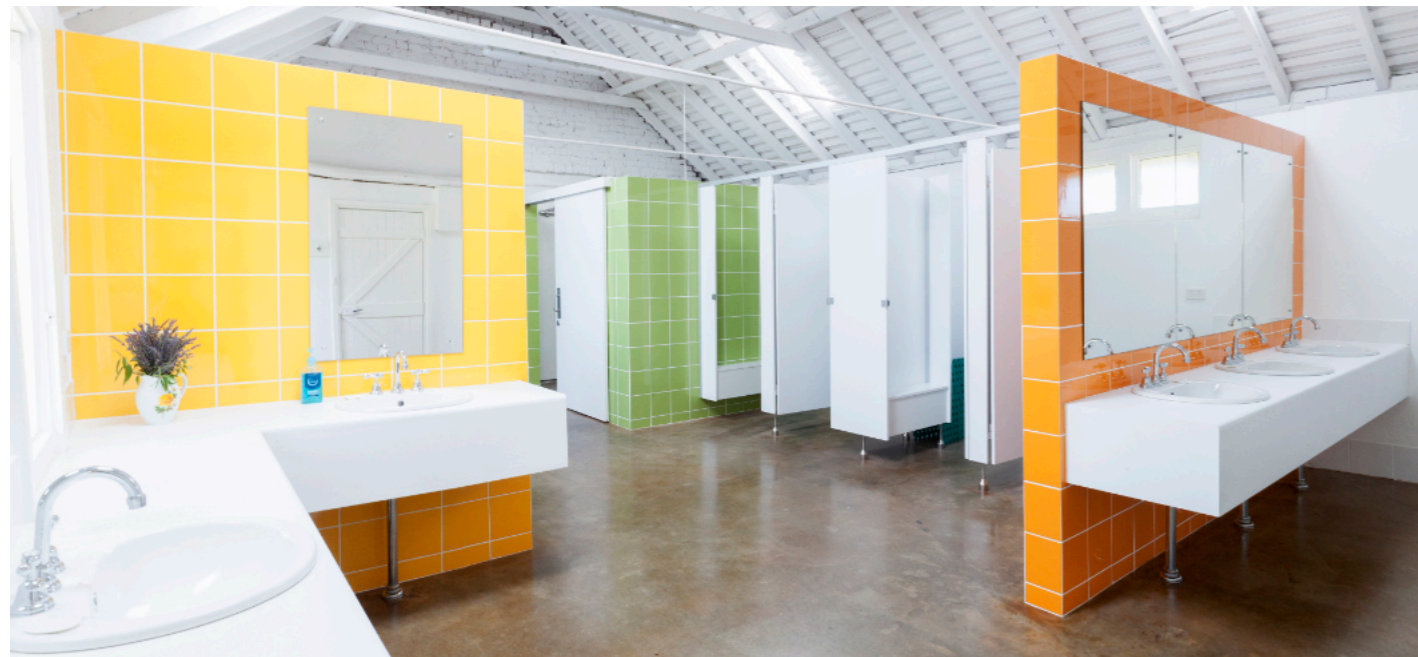
**17.1** Collaboration and partnership with local governments and others to promote the 17 SDGs in each project. (PB and CE)

**17.2** Attract clients with a similar ethos via marketing. (CE)



## Building design practice to reduce Operational Carbon Emissions of buildings

1. Remove gas usage and replace it with efficient electrical appliances such as heat pumps, solar hot water systems, and induction cooktops.
2. Efficient building envelope (compact size, correct orientation, insulation, efficient glazing, cool materials, green roofs etc).
3. Efficient HVAC: Energy recovery system, efficient aircon system, passive cooling/heating, displacement heating/cooling etc.
4. Efficiency of all other electrical equipment, such as lighting, fridges, and controllers, energy monitoring and display, automation etc.
5. Uptake of renewable energy sources such as local photo voltaic (PV) panels, battery storage, heat pumps, windmills, certified renewable power suppliers, etc.
6. Embrace Building Energy Efficiency Certification.
7. Indirect impact - transportation: end of journey changing and shower facilities and storage for bikes, e-bikes, e-scooters, etc. EV charging stations in combination with on-site renewable energy production. Building location (near where workers live?), remote and hybrid working options.
8. Indirect impact - Food and food waste: provide facilities for food reheating, washing up, and lunchroom, as well as waste separation and composting bin/facility integrated with landscape design.
9. Indirect impact - reduce the usage of scheme water (high carbon footprint water source such as desalination), use of rainwater collected onsite.
10. Indirect impact - Education in energy conservation and usage behaviour.
11. Offset remaining carbon emissions through recognised schemes.



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## Building design practice to reduce Embodied Carbon Emissions of buildings

1. Prioritise retaining and reusing existing buildings.
2. Build small and efficient buildings.
  - 2.1 Work with existing and retain as much as possible.
  - 2.2 Repurpose fabric and structure.
  - 2.3 Efficient use of space layout. Consider multi-purposes and uses, user's timetable.
  - 2.4 Height efficiency: considering vertical egress, fire, structure and net/gross ratio (between 2-9 storeys is claimed to be most optimised)
  - 2.5 Façade to floor ratio
  - 2.6 Design for efficient column/grid transfer, structural types, and other structural efficiency.
3. Design buildings with simple forms and construction methodologies, following typical material sizes to reduce waste and offcuts.
4. Consider removing unnecessary components, such as a suspended ceiling below the concrete slab, gutter and downpipe, paving, etc.
5. Use low- or negative-carbon materials such as timber, recycled materials, local materials requiring less transport from ethical and reputable sources.
6. Thinking long term of buildings and facilities in terms of durability, use, and aesthetics:
  - 6.1 Design for durable, low, and easy-to-maintain buildings,
  - 6.2 Design for recyclability and reusability,
  - 6.3 Design for future adaptation,
  - 6.4 In-direct: Design buildings to be loved and cherished by people to be retained and protected,
  - 6.5 In-direct: Design focuses on end users rather than investors.
7. Design for local trade capabilities and availability (travel and transport).
8. Construction procurement that reduces overall transportation distance for trade and materials, such as prefabricated units for remote areas.
9. Embrace Life Cycle Analysis and Assessment and certification for building.
10. Design building for disassembly and circular economy
11. Offset remaining carbon emissions through recognised schemes.
12. In-direct: avoid materials acquired by degrading landscapes or derived from deforestation.
13. In-direct: Embrace heritage protection and old building protection.
14. In-direct: Building design integrated with and for regenerative landscape.
15. In-direct impact: reduce the usage of groundwater that might impact the local ecosystem.

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