m3architecture
Sustainability Action Plan
(SAP)

Contents

Document Control Sheet

Project: m3architecture Sustainability Action Plan (SAP)

Report Title: m3architecture Sustainability Action Plan (SAP)

Client: m3architecture

Author: m3architecture

Approved by: Ben Vielle

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Rev	Date	Description
A	11.08.22	Working Session
B	27.01.23	Work In Progress
C	08.02.23	Work In Progress
D	10.02.23	Work in Progress
E	14.02.23	For Approval
F	23.02.23	Formal Issue
G	15.03.23	Formatting Changes

a. Preamble

Architects Declare

In 2019 m3architecture became signatories to the Architects Declare movement.

The Australian Architect Declare movement is part of an international network of architectural practices committed to addressing the climate and biodiversity emergency.

m3architecture is supporting the Architects Declare movement and demonstrating our commitment to addressing the climate and biodiversity emergency by adopting a Sustainability Action Plan.

Sustainability Action Plan (SAP)

The m3architecture SAP outlines our approach toward attaining sustainable outcomes as a practice. This is being considered in two parts.

1) Targeting sustainable outcomes in our architecture, with our clients and collaborators, and

2) Targeting sustainable outcomes in our business operations.

SAP Working Group

A working group was formed in June 2022 to develop the SAP. This group included the following people:

- Ben Vielle, Director
- Fuller November, Architect
- Lindsay Grundy, Architect
- Samir Hamaiel, Architect
- Joseph Pappalardo, Architect
- Abbey Summerville, Architect

The Document Structure

The SAP document is structured in 4 parts.

1. SAP for Projects (Clients)

The client facing document for briefing and setting an agenda for the project. This is intended to be used as a template for engaging with our clients on the sustainability agenda of the project.

2. SAP for Projects (Architects)

The architect focused document is an expanded version of the Client document. It serves as a working document that provides detail and direction for architects to assist in delivering the sustainable outcomes that have been established for the project.

1+2. SAP for Projects will be a template document accessible to all staff via the m3 Health Safety and Quality Management System. This document will form part of feasibility reports, master plan reports, concept design reports, and design development reports used in the practice.

3. SAP for m3architecture

This section outlines our commitment to Climate Action.

Since 2019 m3architecture has been certified as a Carbon Neutral organisation by Climate Active. The practice is committed to maintaining this certification into the future. m3architecture has developed an Emissions Reduction Plan with targets for further reducing Scope 1, 2, and 3 emissions.

4. SAP Management

This is the SAP working group document used to review, maintain, and improve the SAP in an on-going way.

In the spirit of sharing knowledge, the m3architecture SAP will be available on the m3architecture website.

Architects Declare

The twin crises of climate breakdown and biodiversity loss are the most serious issue of our time. *Globally, buildings and construction play a major part, accounting for nearly 40% of energy-related carbon dioxide (CO2) emissions whilst also having a significant impact on our natural habitats. Meeting the needs of our communities and staying within our ecological limits will require a shift in our behaviour as well as the design, delivery and performance of our buildings. Together with our clients, we will need to commission and design buildings, cities and infrastructures as indivisible components of a larger, constantly regenerating and self-sustaining system.*

The research and technology exist for us to begin that transformation now, but what has been lacking is collective will. Recognising this, we are committing to strengthen our working practices to create architecture and urbanism that has a more positive impact on the world around us.

We will seek to:

1. Raise awareness of the climate and biodiversity emergencies and the urgent need for action amongst our clients and supply chains.

2. Advocate for faster change in our industry towards regenerative design practices and a higher Governmental funding priority to support this.

3. Establish climate and biodiversity mitigation principles as the key measure of our industry's success: demonstrated through awards, prizes and listings.

4. Share knowledge and research to that end on an open source basis.

5. Evaluate all new projects against the aspiration to contribute positively to mitigating climate breakdown, and encourage our clients to adopt this approach.

6. Upgrade existing buildings for extended use as a more carbon efficient alternative to demolition and new build whenever there is a viable choice.

7. Include life cycle costing, whole life carbon modelling and post occupancy evaluation as part of our basic scope of work, to reduce both embodied and operational resource use.

8. Adopt more regenerative design principles in our studios, with the aim of designing architecture and urbanism that goes beyond the standard of net zero carbon in use.

9. Collaborate with engineers, contractors and clients to further reduce construction waste.

10. Accelerate the shift to low embodied carbon materials in all our work. Minimise wasteful use of resources in architecture and urban planning, both in quantum and in detail.

In Australia, we as architects are aware that Aboriginal and Torres Strait Islander peoples have long espoused the cultural, social, economic and environmental benefits embedded in the holistic relationship of Caring for Country.

Quote from https://au.architectsdeclare.com/ accessed 28/11/2022

b. SAP for Projects (Clients)

Introduction

The following checklist is intended as an agenda for discussion with the client and consulting team during the briefing phase. The document then becomes a touchstone to be reviewed at each phase of the project.

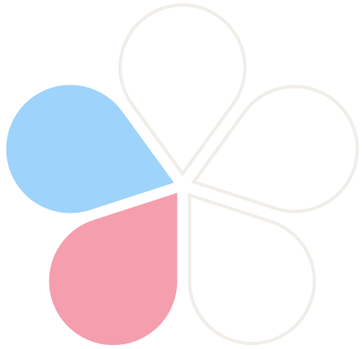
The agenda is structured into five categories each with initiatives that determine the environmental sustainability of the project.

m3architecture SAP benchmark

The m3architecture SAP benchmark is based on the minimum sustainability standard set by the Australian Institute of Architects. This benchmark reflects the principles of the Architects Declare movement and a number of third party sustainability certification programs (e.g GreenStar and NABERS).

The pre-selected (✓) items within the "SAP for Projects" pages achieve the m3architecture SAP benchmark. This benchmark is currently above the National Construction Code minimum requirements. Clients have the option to opt in or out of these initiatives, however, we advocate for adoption of the benchmark and encourage clients to exceed the benchmark by selecting additional initiatives from this list.

The flower motif is used to represent the total project sustainability agenda. When the inner petals are coloured the pre-selected initiatives (✓) are included to achieve the m3architecture SAP benchmark. When the outer petals are coloured the m3architecture SAP benchmark has been exceeded in the category.



✓ Project below m3architecture SAP benchmark

✓ Project achieving m3architecture SAP benchmark.

✓ Project exceeding m3architecture SAP benchmark.

Third Party Benchmarking

Clients may choose to certify the project against a third party rating scheme. (Note: There are additional consulting costs for these certification schemes.)

Options include:

- National Australian Built Environment Rating System (NABERS).
- Green Building Council of Australia (GBCA) GreenStar *(4-6 Star rating)*.
- Climate Active *(Note: This certification will require 4 star or greater NABERS or GreenStar Certification and the Climate Active Certification is reviewed yearly).*

b. SAP for Projects (Clients)

1.0 Protection of Land and Ecological Systems

✓	1.2 - Harvest rain water. Reducing the peak stormwater load on the adjacent land and waterways will reduce erosion and improve land and waterway ecology whilst providing a valuable resource for use in the building or landscape.
✓	1.4 - Maintain/improve/regenerate site ecology.
	1.6 - Adopt waste streaming (e.g. Land Fill, Mixed Recycling, Containers, Soft Plastics, Compost)

2.0 Siting and Urban Design

✓	2.3 - Re-purpose existing buildings, structures, materials, resources, and trees from the site. Re-using and recycling resources reduces our reliance on virgin materials and their associated impacts
	2.7 - Provide end of trip facilities to encourage pedestrian and cycling transport to the site.
	2.7 - Provide on-site car charging to facilitate electric car use.

3.0 Energy Efficiency and Consumption

✓	3.5 - Use on-site renewable power generation (e.g. roof top solar, geothermal, or wind). Pay back periods on roof top solar in Brisbane are typically 3-5 years.
	3.5 - Consider the viability of on-site power storage.
	3.6 - Design the project to be 'net zero' with respect to operational energy use. Purchase 100% Green Electricity for third party power supply to the building/site that can't be met by on-site power generation. This is a Federal Government scheme that requires power retailers to source 100% renewable (carbon neutral) power.
✓	3.11 - Use solar and/or electric hot water systems. Do not use gas for water heating.
✓	3.14 - Use efficient electric cooking appliances. Do not use gas cooking appliances.

5.0 Social Issues

✓	5.3 - Include a First Nations Advisory group as part of the project team and celebrate Aboriginal and Torres Strait Islander people, culture and heritage connected to the place and local community. Consider Tendering criteria that require First Nations sub-contractors and/or apprenticeship programs.
✓	5.5 - Design for inclusion and exceed the minimum industry standards for universal design. Consider enhanced PWD provisions for access, sanitary facilities, kitchens. Consider the need for prayer rooms. Consider the need for parent rooms and baby change rooms.
	5.8 - Design the project to contribute to the local community. Consider third party uses, economic benefits, education & training benefits, and transport network benefits.

4.0 Selection of Building Materials and Processes

✓	4.5 - Use Life Cycle Assessment (LCA) to measure and design to reduce embodied CO_2-e emissions. Consider alternatives to traditional reinforced concrete structure (e.g., Cross Laminated Timber (CLT), Glue Laminated Timber (GLT), steel, or low carbon concrete). Traditional concrete contributes 8% of all global emissions.
	4.6 - Offset embodied CO_2-e emissions to make the building carbon neutral. This is a one time offset based on the embodied CO_2-e emissions calculated as part of the LCA.

c. SAP for Projects (Architects)

1.0 Protection of Land and Ecological Systems

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	1.1 - Design opportunities to harvest, use, or recycle on-site resources during the construction.	- Harvest rain water. - Transplant or retain existing landscape for re-use. - Retain and protect trees. - If trees are removed harvest the timber for use in the works.
✓	1.2 - Design opportunities to harvest, use, or recycle on-site resources during the life of the building	- Harvest rain water. Reducing the peak stormwater load on the adjacent land and waterways will reduce erosion and improve land and waterway ecology whilst providing a valuable resource for use in the building or landscape. - Design edible landscapes and ensure they are cared for. Is there a custodian for the garden?
✓	1.3 - Design to minimise pollution to air, earth and water.	- Consider the impact of acid sulphate soils and salinity during construction. - Provide erosion and sediment control during construction.
✓	1.4 - Design to protect, support or regenerate the site ecology.	- Retain site top soil for re-use. - Remove invasive plant species. - Specify endemic plant species. - Create or link to habitat for native animals. - Use water sensitive urban design (WSUD) principles including stormwater filtration prior to reconnecting with existing systems - Slow peak water flows, retain water on site, create permeable surfaces. - Engage an ecologist to advise on the existing ecological systems and proposed landscape design.
✓	1.5 - Design to minimise and recycle construction waste.	- Specify construction waste streaming and recycling by incorporating appropriate clauses in Architectural Specification as part of contractor Environmental Management Plan (EMP) requirements. - Design to use standard material modules to limit waste e.g. plasterboard or fibre cement sheet size.
	1.6 - Design to minimise and recycle operational waste.	- On-site treatment of waste for sewerage and grey water. - On-site compost. - Recycling programs. - Adopt and allocate space for waste streaming (e.g. Land Fill, Mixed Recycling, Containers, Soft Plastics, Compost).

c. SAP for Projects (Architects)

2.0 Siting and Urban Design

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	2.1 - Design the Master Plan / site plan to consider existing and/or future use of neighbouring sites.	- Review and consider relevant Master Plans, Strategic Plans, and Town Plans. - Consider impacts on neighbours including overshadowing, water run-off, and nature corridors.
✓	2.2 - Design to improve passive thermal comfort to open spaces & enclosed habitable rooms.	- North/south oriented long edges of building. - Improve natural ventilation by designing thin buildings with operable windows that allow cross ventilation. Avoid multiple room depth. - Provide shaded and protected external spaces for entry, exit, circulation, and socialisation. Consider time of day when these spaces are used and the likely environmental conditions (sun, wind, humidity, rain, storm etc.).
✓	2.3 - Design to retain and adapt the existing elements on the site.	- Re-purpose existing buildings, structures, materials, resources, and trees from the site. Re-using and recycling resources reduces our reliance on virgin materials and their associated impacts.
✓	2.4 - Design to improve resilience and adaptation relating to climate change events.	- Consider the potential impacts of bushfire, cyclone, flood, storm surge, sea level rise, extreme temperature. - Reduce heat island effect by minimising extent of unshaded dark coloured roofs, cladding, and groundscapes.
	2.5 - Design to enable an increase to the anticipated mature tree canopy cover as compared to the existing tree canopy cover to the site	- Avoid mature tree removal. - Engage an arborist to advise on potential growth of existing trees an allow space for this increase in tree canopy size and root zone. - If mature trees are removed use compensatory planting ratios in excess of local authority requirements. Local councils have good resources on this topic and often partner with large land holders to assist in caring for areas of high biodiversity.
✓	2.6 - Design to enable adaptability/future proofing.	- Consider floor plate size, floor to floor heights, expansion of existing facilities. e.g. car parking floor to floor heights to suit future habitable uses, or residential use conversion to commercial uses, etc. - In education work establish a robust structural layout to accommodate teaching space modules of various size and type anticipating change in future.
	2.7 - Design to facilitate pedestrian and non-motorised transport.	- Provide end of trip facilities to encourage pedestrian and cycling transport to the site. - Provide on-site car charging to facilitate electric car use.

c. SAP for Projects (Architects)

3.0 Energy Efficiency and Consumption

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	3.1 - Use electricity to power the building.	- Do not use gas.
✓	3.2 - Calculate the annual estimated energy consumption and bench mark this figure.	- During design the project is estimated to have an annual energy consumption of ???kWh/m²/yr. - Engage the ESD consultant or electrical engineer to calculate the estimated energy consumption (kWh/m²/yr) and benchmark this figure. Note: this data will be used to design the on-site power generation. - Design the building for energy efficiency in excess of the National Construction Code (NCC 2019) Section J = 43 kJ/m2.hr. Target .....%. - Post occupancy the project has an annual energy consumption of ???kWh/m²/yr. - Ensure that the electrical engineer includes an electrical meter for each building/tenancy. - Confirm with the client post-occupation energy use (kWh/m²/yr).
✓	3.3 - Use passive thermal design principles to reduce the operational energy of the building.	- Design the building for natural ventilation or mixed mode ventilation. - Design habitable rooms with openable windows. - Design thin buildings with operable windows that allow cross ventilation. Avoid multiple room depth. - Include ceiling fans or the like as alternatives to air-conditioning. - Design for good natural lighting penetration to the interior of the building. This will reduce the need for artificial lighting. Use a good ceiling height to building depth ratio of 1H:2.5D for adequate natural light penetration.
✓	3.4 - Use NCC JV3 modelling during the design process.	- Engage the ESD consultant to model the project at each phase with opportunity for this process to be interative to improve the design.
✓	3.5 - Design renewable energy technology integrated with the project/site to reduce the operational carbon footprint of this project.	- Use on-site renewable power generation (e.g. roof top solar, geothermal, or wind). Pay back periods on roof top solar in Brisbane are typically 3-5 years. Engage an electrical engineer to design the system. - Consider the viability of on-site power storage. Engage an electrical engineer to design the system.
	3.6 - Design the project to be 'net zero' with respect to operational energy use. Or design it so that it can be in future.	- During design the project is estimated to have an annual emission of ???T CO_2-e/yr. These emissions have been offset with the purchase of 100% Green electricity for energy needs that could not be met by on-site generation. - Advocate for the client to purchase 100% Green Electricity for third party power supply to the building/site that can't be met by on-site power generation. This is a Federal Government scheme that requires power retailers to source 100% renewable (carbon neutral) power. - OPTIONAL - Certify the building as Carbon Neutral with Climate Active. Carbon Accountant and Auditor to be engaged to achieve certification. Note: this is an on-going commitment for the client and there may be very little benefit aside from the marketing potential.
✓	3.7 - Design the building to be air tight for the climate zone.	- Refer NCC requirements
✓	3.8 - Design the façade to exceed NCC 2019 minimum deemed to satisfy requirements for insulation and solar heat gain.	- Engage the ESD consultant for an alternative solution to NCC Section J. Note as part of a typical NCC JV3 the alternative solution will need to perform better than a deem to satisfy model. - Test facade shading and design to adequately shade the facade from undesirable direct sun. External shading is more effective than internal shading. Avoid reliance on blinds for shading.
✓	3.9 - Design the walls, roof, and floors to exceed NCC 2019 minimum deemed to satisfy requirements for insulation.	
✓	3.10 - Select efficient fittings, fixtures and equipment.	- Consider efficient kitchen and laundry appliances - Efficient light fittings will need to be selected as part of the NCC JV3 process managed by the ESD consultant and electrical engineer - Consider daylight harvesting with the electrical engineer to reduce the need for lighting when natural light levels are suitable.
✓	3.11 - Use an efficient hot water system.	- Use solar and/or electric hot water systems. - Do not use gas for water heating.
✓	3.12 - Design to reduce reliance on space heating.	- In sub-tropical climates consider locking out the air-conditioning during the winter months.
✓	3.13 - Design efficient space cooling systems.	- Consider pre-conditioning with the mechanical engineer to improve the efficiency of air-conditioning systems in sub-tropical and tropical environments where room populations are high.
✓	3.14 - Use efficient cooking appliances.	- Use efficient electric cooking appliances. - Do not use gas cooking appliances.

c. SAP for Projects (Architects)

4.0 Selection of Building Materials and Processes

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	4.1 - Select materials and processes with consideration for a wide-range of environmental and social impacts.	- Consider environmental degradation, embodied carbon, supply chain slavery, and circular economy principles. - Design for disassembly, re-use and recycling. - Refer to GreenStar Material Framework for recognised initiatives and schemes with the aim of achieving GreenStar RPV (Responsible Product Value) benchmarks and refer to recommended third party material and product certification schemes: - Global GreenTag (https://www.globalgreentag.com/). - GECA (https://geca.eco/). - When specifying timber use Forestry Stewardship Council (FSC) with Chain of Custody certification, or GreenPeace Eco Timber with Chain of Custody certification.
✓	4.2 - Select renewable and/or recyclable materials and components.	
✓	4.3 - Minimise the use of non-renewable resources (e.g. marble, coal powered steel etc).	

✓	4.4 - Design to promote improvements in indoor air quality and reduction of off-gassing	- Design mechanical systems to exceed the minimum requirements for fresh air volumes.
		- Design for natural ventilation and/or mixed mode ventilation.
		- Include benchmarks for VOC and formeldahyde in project specifications
		  - 0171 General Requirements,
		  - 0181 Adhesives, Sealants, and Fasteners,
		  - 0621 Waterproofing - wet areas
		  - 0652 Carpets
		  - 0671 Painting

✓	4.5 - Use Life Cycle Assessment (LCA) to measure and design to reduce embodied CO_2-e emissions.	- The project has ???T CO_2-e emissions embodied in the building construction. This equates to ???T CO_2-e/m^2. - Use [the in house software tools TBC] to conduct a LCA at each stage of the design. LCA is an iterative process that should inform the design and provide data to enable design decisions about ways to reduce embodied carbon in construction. - Seek alternatives to traditional reinforced concrete structure (e.g., Cross Laminated Timber (CLT), Glue Laminated Timber (GLT), steel, or low carbon concrete). Traditional concrete contributes 8% of all global emissions. - Use CLT or mass timber structure. Note: these systems will require additional active and passive fire protection, and may cost more, but they also save time in construction. Seek advice early in the design process. - Use low carbon concrete for structure. There are a few suppliers that offer low carbon concrete. Seek advice early in the design process. - Optimise the structural grid to reduce embodied carbon. - Use a timber framed glazing system in areas that are protected from weather and accessible for maintenance. - Investigate sustainable steel or aluminium facade systems as alternatives to non-renewable products.
	4.6 - Advocate for the client to offset embodied CO_2-e emissions to make the building carbon neutral	- This is a one time offset based on the embodied CO_2-e emissions calculated as part of the LCA.

c. SAP for Projects (Architects)

5.0 Social Issues

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	5.1 - Design to improve human connections through developing community and improving the quality of people's lives.	- Design memorable, beautiful, vibrant, communal or public spaces that are inclusive, safe, flexible, and enjoyable. - Design to improve the resilience of the community. See GreenStar - "18 Resilient - Community Resilience' credit criteria with aim of preparing a Community Resilience Plan.
✓	5.2 - Support locally supplied and manufactured resources and skilled labour.	- Select locally manufactured products. - Use local skilled labour.
✓	5.3 - Include First Nations businesses in the design, construction, and/or maintenance.	- Include a First Nations Advisory group as part of the project team and celebrate Aboriginal and Torres Strait Islander people, culture and heritage connected to the place and local community. - Consider Tendering criteria that require First Nations sub-contractors and/or apprenticeship programs.
✓	5.4 - Design to prevent, as much as possible, the promulgation of modern slavery.	- Review accreditation of materials based on GreenStar Product Framework. The initiatives supported under the framework considers initiatives that address prevention of modern slavery. - Technical reference sheet (specification) to include line-item prompt in template to enable GPV initiative addressing modern slaving to be recorded.
✓	5.5 - Design for inclusion and exceed the minimum industry standards for universal design.	- Consider enhanced PWD provisions for access, sanitary facilities, kitchens. - Consider the need for prayer rooms. - Consider the need for parent rooms and baby change rooms.

	CALL TO ACTION	PROJECT RESPONSE (Consider items in green)
✓	5.6 - Design to improve the users well-being.	- Design with specificity that surprises. Make the idea particular to place, people and culture. Make the idea explicit, relevant, and indispensable for future generations. Make the architecture valuable to the users and custodians of the building in the long term. - Find opportunities to connect the building to the adjacent natural environment - visually and physically. - Consider indoor landscape opportunities to assist with air purification and other well-being benefits. - Consider biophilic design principles. - Use Crime Prevention Through Environmental Design (CPTED) principles to create safe places and spaces. - Make generous walkways, ramps, and stairs to allow for efficient and enjoyable movement that is equitable for all. - Make the building intuitive. Do the users need to be trained to operate the building, or is it obvious? - Design mechanical systems to exceed the minimum requirements for fresh air volumes. - Design for natural ventilation and/or mixed mode ventilation. - Design for good natural lighting penetration to the interior of the building. - Design glare management. - Design acoustics of each space with the comfort of occupant in mind. Engage an acoustic engineer to benchmark performance of spaces/systems to provide appropriate acoustic separation and reverberation. - Include benchmarks for VOC and formeldahyde in project specifications to limit impacts of toxins and off-gassing on occupants.
✓	5.7 - Design the project to be economically sustainable.	- Does the project represent a high level of value for the investment of funds without negatively impacting social, environmental, and cultural aspects of the community?
	5.8 - Design the project to contribute to the local community.	- Third party uses. - Economic benefits. - Education & training benefits. - Transport network benefits.

d. SAP for m3architecture

Emissions Reduction Plan

ISSUE DATE: 16/12/2022

	SCOPE 1 (tCO_2-e) Emissions are those over which a company has direct control via ownership of activities	SCOPE 2 (tCO_2-e) Purchased electricity, heat or steam	SCOPE 3 (tCO_2-e) Indirect emissions from activities or services purchased from other third-party companies	TOTAL (tCO_2-e)	TOTAL % CHANGE FROM BASE YEAR	MEASURES TAKEN/PROPOSED TO REDUCE EMISSIONS
Base Year 2019/20	3.5	41.1	120.8	**165.4**	**-**	
Year 1 2020/21	4.6	0.0	104.8	**109.4**	**-33.9%**	- Scope 2 - Purchase 100% Green Electricity - Scope 3 - Purchase business flights with carbon offset - Scope 3 - Change to Carbon Neutral paper supplier
Current Year 2 2021/22	8.59	0.0	94.52	**103.11**	**-37.7%**	- Scope 3 - Research key third party suppliers Carbon Neutral status
Target Year 3 2022/23	*8.6*	*-4.0*	*94.5*	***99.1***	***-40.0%***	- Scope 2 - Install 24kW solar panels on roof to reduce reliance on grid electricity = estimated 4tCO_2-e credit (half first year) then 9tCO_2-e credit (following years). - Scope 2 - Reduce electricity use by: 1. Remote switch on/off of PCs so that they do not need to be left on when staff work from home, 2. Change pc updates to Tuesday morning (in place of Monday mornings) so that computers do not need to be left on over the weekend. This will improve feed-in credit during the day on weekends. - Scope 3 - Default to double side print settings across office to reduce paper use, waste and electricity for printing.
Target Year 4 2023/24	*8.1*	*-9.0*	*86.2*	***85.3***	***-48.4%***	- Scope 1 - Encourage staff use teams in lieu of in person meetings. Target 25% reduction of gasoline/diesel = 0.50tCO_2-e reduction. - Scope 3 - Encourage staff to use active transport to work by improving end of trip facilities. Target 25% reduction in employee commute = 0.6T CO_2 reduction. - Scope 3 - Ensure business flights are purchased with carbon offset = 7.7tCO_2-e reduction. - Scope 3 - Reduce food and drink consumption reduction / source carbon neutral food and drink suppliers
Target Year 5 2024/25	*8.1*	*-10.0*	*63.1*	***61.2***	***-62.9%***	- Scope 2 - Remove physical server and move to carbon neutral cloud based server to reduce electricity use and increase feed in grid credits. - Scope 3 - Encourage our higher emitting third party suppliers to become climate active carbon neutral. Target 20tCO_2-e reduction. - Scope 3 - Encourage Telstra to provide carbon neutral telecommunications = 3.1tCO_2-e reduction.
Target Year 6-10 2025-30	*6.4*	*-10.0*	*43.1*	***39.5***	***-76.1%***	- Scope 1 - Purchase of electric office car when current combustion vehicle reaches end of life = 1.7tCO_2-e reduction - Scope 3 - Encourage additional third party suppliers to become climate active carbon neutral. Target 20tCO_2-e reduction.

Climate Active (CA) requires minimum 30% reduction in total omissions over a 10 year period compared to the base year (2019/20)

Queensland Government Emissions targets; 50% renewable by 2030; 30% emissions reduction below 2005 levels by 2030; zero net emissions by 2050.

Australian Government targets under Paris Agreement (Nationally Determined Contribution (NDC)):
reduce greenhouse gas emissions by 43% below 2005 levels by 2030; net zero emissions by 2050

e. SAP Management

Topic based on Australian Architect's Declare SAP Framework		Current Practice (Feb 2023)	Areas for Action	1-5 year goals				
				march 2023 - Feb 2024	march 2024 - Feb 2025	march 2025 - Feb 2026	march 2026 - Feb 2027	march 2027 - Feb 2028
2	**Design & Approach**							
2.1	Identify how the Architects Declare principles are informing the project from brief development throughout all stages	The current approach to sustainability was not formalised so we have developed an SAP. The m3architecture SAP is broken into 4 sections. These sections provide a framework for the sustainability initiatives that we advocate our clients adopt in their projects as well as the sustainability initiates m3architecture have undertaken as a business. The four sections of m3's SAP are: - SAP for Projects (Clients) - SAP for Projects (Architects) - SAP for m3architecture - SAP Review and Management. SAP for Projects address sustainability initiatives with the project context. Architects Declare principles are embedded in the initiatives setout in these two Project sections. These two sections provide guidance for our clients to make informed decision about actions they can take towards sustainable outcomes, and provides a template to assist architects in delivering on the initiatives undertaken. SAP for m3architecture sets-out the practice Emissions Reduction Plan which supports are commitment to being a Carbon Neutral Organisation Certified by Climate Active since 2019.	1. Seek m3architecture director support - completed 16/02/23 2. Purchase LCA software (Revit plug-in). 3. Train all staff in SAP process and content 4. Publish the m3architecture SAP document to HSQ, website, and social media links. 5. Pilot project(s)	Publish SAP - March 2023	Review SAP Dec 2023 Republish SAP Mar 2024	Review SAP Dec 2024 Republish SAP Mar 2025	Review SAP Dec 2025 Republish SAP Mar 2026	Review SAP Dec 2027 Republish SAP Mar 2028
2.2	Identify the Aboriginal Country your projects are located in and engage with aboriginal culture and heritage in the making of the project.	m3 currently note the relevant Country and acknowledge First Nations People in Design reports and on the practice website when the project is completed. We advocate for First Nations consultation with our clients.	m3 are engaged in a RAP process currently m3 to develop First Nations Protocol for guidance with engaging with First Nations peoples during the briefing phases of projects.	1. Establish First Nations Protocol FNP 2. Implement protocol within Pilot Project deliverables framework.	20% of projects to adopt the FNP.	50% of projects to adopt the FNP.	80% of projects to adopt the FNP.	100% of projects to adopt the FNP.
2.3	Identify how you will bring life cycle costing, whole life carbon modelling post occupancy evaluation and energy modelling to be integrated into and influence your design process	SAP for Projects includes initiatives whereby whole of life carbon modelling and life cycle assessment are undertaken at each stage of the project (Feasibility, SD, DD, CD) as a standard service in order to determine carbon emissions associated with these project.	m3 to build a database of projects. The database will serve to provide us with data to advocate for greater levels of sustainability on projects.	1. Develop modelling protocol for pilot project(s) adopting SAP framework. 2. Key staff to undertake training to using modelling software within pilot project. 3. Framework of post occupancy evaluation to be developed and applied to pilot project	1. Review modelling protocol / output. 2. Review the pilot project(s) and adopt the SAP on all new projects.	1. Review modelling protocol / output. 2. Establish a database of project data for comparison with new projects	Continue to build the database of project data for comparison with new projects	Continue to build the database of project data for comparison with new projects
2.4	Nominate which green certifications are and will become common practice in your firm, and how certified projects contribute to Sustainability goals and Architects Declare principles (Nabers, Basix, Living Building Challenge, Green Star, Well rating, Passive House, others).	Educational and institutional work (Class 9b) forms a large proportion of the practice's work. Greenstar would be the most likely tool that we would use, however, the majority of our clients see little benefit in the increased consulting costs associated with such a scheme. Therefore, as more practical approach we have established our own sustainability benchmark in the m3 SAP. This benchmark is based on initiatives that we have been practicing already, the AIA awards 2023 sustainability criteria and minimum Greenstar initiatives. In launching the m3 SAP we will be advocating for our clients to achieve this benchmark and exceed it.	SAP working group to undertake periodic review of accreditations schemes applicable to the typology of work the practice undertakes, and to evaluate if increased advocacy for accreditations schemes should be undertaken. More research to be done based on the Living Building Challenge scheme.	1. m3 working group to review Greenstar accreditation framework. 2. m3 to review and update initiatives within SAP for Projects with changes or developments within the Greenstar criteria.	Ongoing review	Ongoing review	Ongoing review	Ongoing review
2.5	Define your regenerative design principles, with the aim of designing architecture and urbanism that goes beyond the standard of net zero carbon in use	The inclusion of regenerative design principles within the practice's work requires further development.	Regenerative design principles result in outcomes that achieve carbon positive results and requires a long-term vision and 'buy-in' from clients beyond the duration of project design and delivery. Actions: 1. Research terminologies and definitions for regenerative design is. 2. Understand what metrics are used to assess performance or measure outcomes. Staff to be versed in what information is needed to enable or assist with analysis or measurement. 3. Determine what elements of regenerative design align with the m3 SAP principles. What of these would m3 adopt in defining the m3 Regenerative Design Principles. 4. Update the SAP to incorporate m3's approach to addressing regenerative design principles in our projects.	1. Review Regenerative Design principles in more detail. 2. Review Living Building Challenge Framework	1. Update SAP based to include Regenerative Design principles. 2. Further review Regenerative Design principles with a view to expand initiatives.	1. Update SAP based to include Regenerative Design principles. 2. Further review Regenerative Design principles with a view to expand initiatives.	1. Update SAP based to include Regenerative Design principles. 2. Further review Regenerative Design principles with a view to expand initiatives.	1. Update SAP based to include Regenerative Design principles. 2. Further review Regenerative Design principles with a view to expand initiatives.
2.6	Define your collaborative approach with engineers, contractors and clients to: a. Reduce waste through design. b. Further reduce construction waste. c. Accelerate the shift to low embodied carbon materials in your work.	Our approach to collaboration is to bring awareness of the m3 SAP to clients, contractors, and consultants so that sustainable objectives for projects are understood early in the consultation phase. m3 SAP for Projects includes initiatives that aim to address the points listed, as follows: SAP for Projects: Protection of Land and Ecological Systems, Items 1.5 and 1.6. SAP for Projects: Protection of Land and Ecological Systems, Item 1.6. SAP for Projects, Selection of Building Materials and Processes, Items 4.2, 4.2, 4.3, 4.5, 4.6.	m3 SAP Working Group to review success and failure of collaboration processes based on experiences gained through implementation of the SAP in projects. m3 to research industry initiatives to reducing embodied carbon in materials. E.g. attend information events through MECLA (Materials and Embodied Carbon Leaders' Alliance)	1. m3 working group to establish which elements of the m3 SAP for Projects can be rolled-out immediately, as compared with those that require further training and research. m3's SAP working group to inform practice of elements to be adopted. 2. Establish process for to research and knowledge to be undertaken sharing regarding low embodied carbon materials	1. Review creation of product research / database so that product information can be accessed by practice staff, and be updated on a on-going basis. 2. Establish targets for reduction of embodied carbon in projects.	1. Review success of product research / database on a on-going basis. 2. Review targets for reduction of embodied carbon in projects.	1. Review success of product research / database on a on-going basis. 2. Review targets for reduction of embodied carbon in projects.	1. Review success of product research / database on a on-going basis. 2. Review targets for reduction of embodied carbon in projects.

e. SAP Management

Topic based on Australian Architect's Declare SAP Framework		Current Practice (Feb 2023)	Areas for Action	1-5 year goals march 2023 - Feb 2024	march 2024 - Feb 2025	march 2025 - Feb 2026	march 2026 - Feb 2027	march 2027 - Feb 2028
3	**Evaluation & Reporting (this includes total energy reporting, utility data collection and post-occupancy evaluations)**							
3.1	What is your current live portfolio's total energy performance target and how does it compare to a zero carbon 2030 timeline as identified by AIA and Australian Architects Declare?	This information is not currently known. However the SAP for Projects, Energy Efficiency and Consumption, Item 3.2, requires this information to be measured. Australian Institute of Architects advocates for zero carbon emissions by 2030. (https://www.architecture.com.au/about/carbonneutral#:~:text=The%20Paris%20Agreement%2C%20to%20which,Australia's%202030%20emissions%20reduction%20target.)	1. For new projects, m3 to extend Electrical Engineers appointment to undertake and estimated energy consumption evaluation measured in kWh/m2/yr. 2. Energy consumption is to be below NCC bench as a minimum. 3. m3 to review energy efficient initiatives with clients in order to understand how energy use can be reduced or alternatively sourced to minimum carbon emissions. 3. m3 SAP working group to review initiatives under SAP for Projects (Energy Efficiency and Consumption)	Energy performance to be measured on pilot project(s). Target to exceed NCC minimum energy performance requirements	Collate data on energy performance from pilot project(s). Determine a higher target reduction on NCC minimum energy performance requirements	Determine a higher target reduction on the previous year for energy performance	Determine a higher target reduction on the previous year for energy performance	Determine a higher target reduction on the previous year for energy performance
3.2	What are the firm's goals/targets for improvement towards uptake of regenerative design?	Refer Item 2.5 above						
3.3	How is project evaluation and reporting handled? How will you encourage your clients to adopt this approach?	The SAP for Projects sections will be included in client facing project reports from briefing/feasibility stage through design phases and construction documentation. This document will record the key performance data for the project. This performance data will be collated by the SAP working group to establish a database of reference projects.	1. Prepare a project report using the SAP Projects proforma to be agreed with the client during the design phases. 2. Consult with engineers to establish information required to undertaken energy modelling. 3. Agree a regime of monitoring and data recording is undertaken beyond completion, in order for the on-going energy and water usage elements of the project to be tracked. 4. Format of energy reporting, and Life Cycle Assessment (embodied Carbon) to be developed through the pilot project(s).	1. Complete pilot project(s) and review workings of the SAP Projects framework. 2. Collate pilot project(s) data in a database for reference. In the practice.	Ongoing review of SAP Projects framework and project data to be added to the database	Ongoing review of SAP Projects framework and project data to be added to the database	Ongoing review of SAP Projects framework and project data to be added to the database	Ongoing review of SAP Projects framework and project data to be added to the database
3.4	What approaches are used to reach energy targets?	The current approach to reaching energy targets is based on 'above NCC compliance' for energy consumption assessed via JV3 modelling.	1. Energy targets to be reviewed under 3.1. 2. Actions under 3.1 to adopted. 3. Architects to advocate energy reduction with clients. 4. Energy Targets determined under 3.1 to be included in SAP for Projects: Energy Efficiency and Consumption. 5. Example / pilot project to be assessed and report prepared for inclusion in the SAP.	m3 project or industry data to be referenced to determine energy targets.	Ongoing review.	Ongoing review.	Ongoing review.	Ongoing review.
3.5	How do you share the findings of energy and post-occupancy evaluations with the firm, and use them to improve your processes?	Post occupancy evaluations are not currently undertaken Where energy targets exceed NCC requirements this is not shared.	1. Information reporting and sharing to be developed based on reference project. 2. Internal: information sharing via internal informal CPD meeting/s and via the HSQ system via m3's intranet portal. 3. External: Information sharing via appendices to SAP for Projects. 4. External: Information sharing via m3 webpage as part of obligations under Architects Declare.	m3 working to determine. - what information is required from our clients as part of a post occupancy evaluation. - what do we do with this information. - how do we share this information. - how does this information led to better outcomes for our client, future projects, and future clients.	Ongoing review. Post occupancy evaluation and energy consumption data is assessed for pilot project(s)	Ongoing review.	Ongoing review.	Ongoing review.
4	**Outreach & Advocacy** (this is "external" knowledge sharing)							
4.1	How are you talking with your clients about the Architects Declare principles?	The Architect's Declare principles are posted in our SAP. The Architects Declare pledge forms the basis of our commitment to the movement and preparation and implementation of the practice's SAP.	1. m3 mission statement is to be revised to include reference to our Sustainability objectives. 2. Architects to advocate for the Architect Declare principles with our clients.	1. Update practice mission statement to include reference to the SAP. 2. SAP to be rolled-out under pilot project(s).	SAP to be rolled-out for all new projects.			
4.2	How are your strategies communicated to clients?	Our strategies are communicated through our SAP for Projects (Clients) document.	SAP working group to review what improvements can be made to communicate our Sustainability objects to our clients.	Ongoing review.	Ongoing review	Ongoing review	Ongoing review	Ongoing review
4.3	How does the firm contribute to the sustainable design community?	m3 is undertaking a refinement process of our services through implementation of the SAP in order to meet our obligations, and help our clients meet their obligations in relation to the climate emergency.	Next steps will be to share lessons learnt with the sustainable design community	Ongoing review.	Ongoing review	Ongoing review	Ongoing review	Ongoing review
4.4	How will you share knowledge and research to that end on an open source basis?	m3 SAP will be posted on the m3 website.	Establish a sustainability web page and share the m3 SAP via social media. Next steps will be to share lessons learnt with the sustainable design community	1. Web page for sustainability including m3 SAP document. 2. Share via social media.	Seek opportunities to share lessons learnt with the design community	Ongoing review	Ongoing review	Ongoing review
4.5	Publish your SAP and update annually	Refer Item 4.4 above						
5	**Training & Education** (...and "internal" knowledge sharing)							
5.1	How does the firm support staff growth in sustainable design disciplines?	Through the formation of the SAP working group m3 has provided voluntary participation on practice sustainability initiatives, such as preparing and contributing to the m3's SAP framework. CPD focused on sustainability (e.g. Architects Declare events, and MECLA events) are shared with all staff and attendance is encouraged.	Items for consideration: 1. SAP working group to meet quarterly to discuss and review progress. 2. CPD focused on sustainability (e.g. Architects Declare events, and MECLA events) are shared with all staff and attendance is encouraged. 3. Friday Soiree CPD sessions to be allocated to enable presentation of progress / status of the SAP framework and its implementation on projects, and take opportunities for specialists in this industry to speak to staff.	1. Establish a quarterly meeting schedule. 2. Ongoing review	Ongoing review	Ongoing review	Ongoing review	Ongoing review

e. SAP Management

Topic based on Australian Architect's Declare SAP Framework		Current Practice (Feb 2023)	Areas for Action
6	**Operations & Outlook**		
6.1	Evaluate the firm's carbon footprint from operating your business.	m3architecture has been Carbon Neutral Organisation since 2019. This is certified by Climate Active each financial year. The practice is committed to maintaining this certification.	Yearly Climate Active Carbon Neutral Organisation submission
6.2	Identify ways to reduce the firm's footprint and increase its handprint	Refer SAP for m' as part of m3 SAP framework. This section includes the m3 Emissions Reduction Plan.	Yearly review of targets with Climate Active
6.3	Publish the data set from your audit and your pathway to carbon neutrality as a business to help Accelerate the shift to low a low carbon society.	The m3architecture Carbon Neutral Public Disclosure Statement (PDS) and associated data is publicly available on the Climate Active website.	

1-5 year goals				
march 2023 - Feb 2024	**march 2024 - Feb 2025**	**march 2025 - Feb 2026**	**march 2026 - Feb 2027**	**march 2027 - Feb 2028**
Climate Active	Climate Active	Climate Active	Climate Active	Climate Active
Emissions Reduction Plan review of targets with Climate Active	Emissions Reduction Plan review of targets with Climate Active	Emissions Reduction Plan review of targets with Climate Active	Emissions Reduction Plan review of targets with Climate Active	Emissions Reduction Plan review of targets with Climate Active

f. Glossary of Terms

Carbon emissions

Used in this report to refer to all emissions of greenhouse gases. Their global warming potential (GWP) is quantified in units of carbon dioxide equivalence. A kilogram of carbon dioxide therefore has a GWP of 1 kgCO2e.

Beyond the lifecycle

Carbon emissions or emissions savings incurred due to reuse or recycling of materials or emissions avoided due to using waste as a fuel source for another process (module D). Consideration of module D is key for maximising resource efficient uses of materials at the end of life. Under forthcoming updates to European standards, it will be mandatory for product EPDs to report module D alongside other lifecycle stages in most cases, and will also be required for building assessments.

Embodied carbon

Carbon emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure. Embodied carbon therefore includes: material extraction (module A1), transport to manufacturer (A2), manufacturing (A3), transport to site (A4), construction (A5), use phase (B1, eg concrete carbonation but excluding operational carbon), maintenance (B2), repair (B3), replacement (B4), refurbishment (B5), deconstruction (C1), transport to end of life facilities (C2), processing (C3), disposal (C4). Benefits beyond the system boundary (D) should also be reported separately to modules A-C.

In the report we refer to the embodied carbon of both buildings and infrastructure as well as the embodied carbon of individual materials.

End of life carbon

The carbon emissions associated with deconstruction/demolition (C1), transport from site (C2), waste processing (C3) and disposal (C4) phases of a building or infrastructure's lifecycle which occur after its use.

Operational carbon

The emissions associated with energy used (B6) to operate the building or in the operation of infrastructure.

Upfront carbon

The emissions caused in the materials production and construction phases (A1-5) of the lifecycle before the building or infrastructure begins to be used. In contrast to other categories of emissions listed here, these emissions have already been released into the atmosphere before the building is occupied or the infrastructure begins operation.

Use stage embodied carbon

Emissions associated with materials and processes needed to maintain the building or infrastructure during use such as for refurbishments. These are additional to operational carbon emitted due to heating, cooling and power etc.

Whole life carbon

Emissions from all lifecycle phases, encompassing both embodied and operational carbon together (ie modules A1 to C4, with module D reported separately).

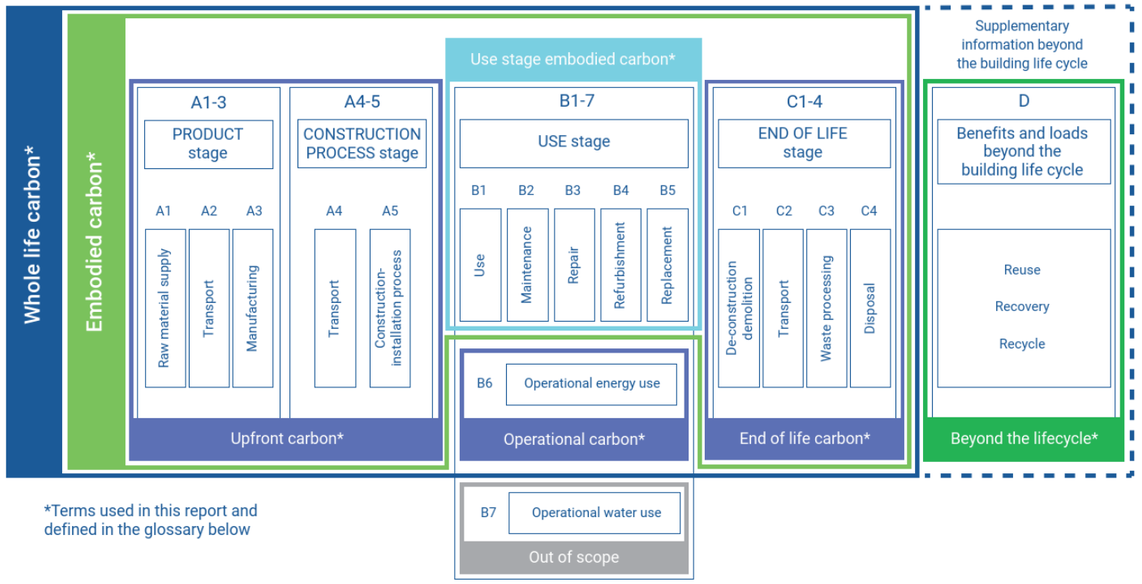


Figure 1: Terminology used in this report cross-referenced to terms and lifecycle stages defined in EN 15978

Source

World Green Building Council, Bringing embodied carbon upfront report, September 2019, https://worldgbc.s3.eu-west-2.amazonaws.com/wp-content/uploads/2022/09/22123951/WorldGBC_Bringing_Embodied_Carbon_Upfront.pdf, accessed 30/11/22.

f. Glossary of Terms

Carbon credit

Is a market-based mechanism and is typically transacted in metric tonnes of carbon dioxide equivalent (CO_2-e). Purchasing one tonne of carbon credit means there will be one less tonne of carbon dioxide (or an equivalent greenhouse gas) in the atmosphere than there otherwise would have been. Once a carbon credit is purchased, it is retired permanently.

See also 'Carbon offset'.

Carbon dioxide equivalent (CO_2-e)

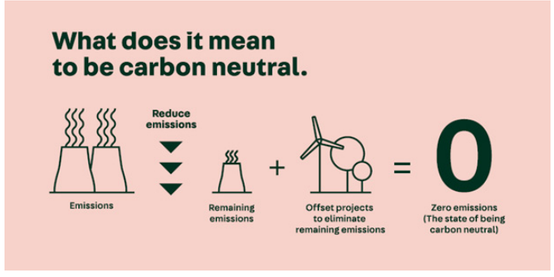
A standard measure that takes account of the global warming potential (GWP) of different greenhouse gases and expresses the effect in a common unit.

The following gases are included under the term CO_2-e:

Greenhouse Gas	GWP
Carbon dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous oxide (N_2O)	298
Hydrofluorocarbons (HFCs)	124 – 14,800
Perfluorocarbons (PFCs)	390 – 12,200
Sulphur hexafluoride (SF_6)	23,900
Nitrogen trifluoride (NF_3)	17,200

Carbon neutral

A situation where the net emissions associated with an activity are equal to zero because emissions have been reduced and offset units cancelled to fully account for all emissions.



Carbon offset

An offset is an action that prevents or reduces carbon dioxide from being released into the atmosphere or removes carbon dioxide from the atmosphere. Carbon credits or offsets are typically measured in tonnes with 1 offset unit equalling 1 tonne of carbon dioxide equivalent. Offsets can be generated from projects such as renewable energy (prevent emissions from burning coal or gas) or waste gas recovery (prevent emissions from methane released from landfills).

See also carbon credit.

Greenhouse gases (GHG)

The atmospheric gases responsible for causing global warming and climate change. The Kyoto Protocol lists six greenhouse gases – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur-hexafluoride (SF_6) – with the addition of nitrogen trifluoride (NF_3) from the beginning of the protocol's second commitment period.

Lifecycle assessment (LCA)

LCA is a systematic set of procedures for compiling and examining the inputs and outputs of materials and energy, and the associated environmental impacts directly attributable to a building, infrastructure, product or material throughout its lifecycle (ISO 14040: 2006).

Offsetting

The activity of cancelling offset units.

Offset unit

Represents reductions of greenhouse gases or removals of greenhouse gases from the atmosphere by sinks,relative to a business-as-usual baseline. Offset units are tradeable and can be used to negate (or offset) all or part of another entity's emissions.

Regenerative design

Regenerative design is a holistic framework supporting waste-free systems that utilise renewable resources and energy, seeking a balance between production and consumption while also restoring and revitalising (regenerating) its own sources of energy and materials. Regenerative development is the process of cultivating capacity and capability in people, communities and natural systems to renew, sustain and thrive.

Scope 1 emissions

The release of greenhouse gases into the atmosphere as a direct result of activities occurring within a responsible entity's control (or geographic boundary).

Scope 2 emissions

The release of greenhouse gases into the atmosphere from the consumption of electricity, heating, cooling or steam that is generated outside of a responsible entity's control (or geographic boundary).

Scope 3 emissions

Greenhouse gases emitted as a consequence of a responsible entity's activities but emitted outside the responsible entity's control (or geographic boundary).

Sources

- Climate Active Carbon Neutral Standard for Buildings at https://www.climateactive.org.au/sites/default/files/2022-10/10572%20Environment%20-%20Building%20Standard%20A4_FA_Web.pdf, accessed 28/11/2022,.
- https://carbonneutral.com.au/glossary/, accessed 28/11/22,
- https://acumen.architecture.com.au/environment/making-it-happen/regenerative-design-approaches/, accessed 28/11/22.

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