



Adaptive Reuse of the former Berrima Gaol

Sustainability Report

Sustainability Strategy

State Significant Development Application

Prepared for: Blue Sox Group

Project No: BNE1280

Date: 9 September 2025

Revision: REV03





Project:	Adaptive Reuse of the former Berrima Gaol
Location:	2-4 Argyle Street (Lot 102 DP1283819 [102/1283819]) Berrima Gaol, NSW
Prepared by:	ADP Consulting Pty Ltd Level 6, 33 Erskine Street Sydney NSW 2000
Project No:	BNE1280
Revision:	REV03
Date:	9 September 2025

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00	29/07/2025	Coordination only	Laura Pachon	LP	Borris Boschman	BB	Borris Boschman	BB
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03	09/09/2025	SSD Application Final	Laura Pachon	LP	Borris Boschman	BB	Borris Boschman	BB

Table 1 Project Team

Project Team

Client / Principal	Blue Sox Group ABN 92 657 695 166
Architect	Turner
Landscape Architect	JMD Design
Heritage Conservation	Urbis
Hydrology	REDITUS
Services Engineering	Neuron
Hydrogeology & Contamination	Reditus
Civil Engineering (WSUD)	Martens



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1. Introduction

Background

The Berrima Correctional Centre opened (as the Berrima Gaol) in 1839, and held maximum and minimum-security male and female prisoners, including being used as an internment camp for German prisoners of war during World War I.

Located close to cafes, parks, rivers and Australia's oldest continually licensed Inn, the property has two historic cottages, a tennis court, industrial shed, and commercial kitchen, in addition to the gaol's 60 cells, watch tower, guard offices and commercial space.

Berrima Correctional Centre was closed in 2020 as it was no longer fit-for-purpose and surplus to Corrective Service NSW's requirements.



Figure 1: Aerial Map of the subject site with the lot dashed boundaries in red source: TURNER Berrima Gaol Architectural design report

The Project

As owners of the site The Blue Sox Group are proposing an adaptive reuse of the former Gaol and former Correctional Centre to transform the site into a lively commercial, retail and hotel accommodation precinct. Working with a leading heritage consultant the proposal seeks to ensure conservation of the key items of heritage significance and includes:

- > **Hotel Facility:** 50 rooms to accommodate visitors
- > **Signature Restaurant and Bar:** A culinary experience within historic walls
- > **Wellness Centre:** gym facilities for relaxation and rejuvenation
- > **Function Space and Meeting Rooms:** Versatile spaces for events and gatherings
- > **Retail:** Unique shops celebrating local craftsmanship
- > **Working Garden:** A green oasis for leisure and community engagement
- > **Guest Accommodation:** Comfortable hotel rooms for overnight stays
- > **Car Parking:** Convenient facilities that may double as event spaces

Heritage Overlays

Berrima Gaol is listed on the New South Wales State Heritage Register, recognising its historical significance as one of the few remaining compounds dating from pre-1840. This listing imposes statutory obligations for conservation and any proposed changes to the site.

A Conservation Management Plan was finalised in May 2024 to guide the adaptive reuse of the Berrima Gaol site. The CMP identifies key heritage elements, including the main perimeter walls, gatehouse, governor's residences, and original entrance gates, and outlines strategies for their preservation.

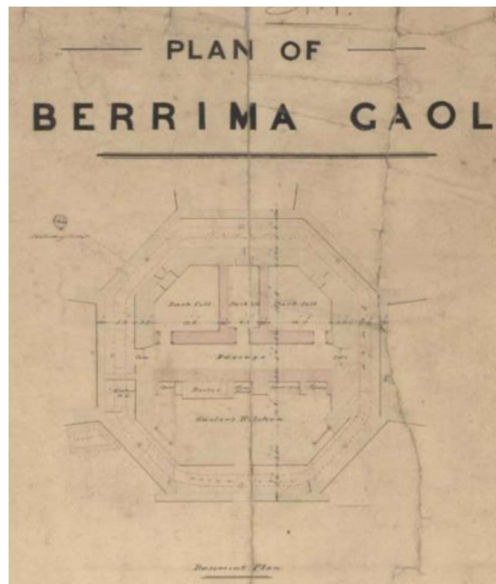


Figure 2: Plan of Berrima Gaol containing colonial Architects Stamp 18876 Source: NSW Plan Services, PC47/24, Berrima Correctional Centre – Site Plan

2. Sustainability Requirements

Key Planning Controls

The LEP which provides zoning and development controls requirements have been reviewed as well as the State Significant Development Process requirements.

The Sustainability Strategy is designed to be in line with the Environmental Impact Statement (EIS) and the approach set out in Part 8 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation). The table below highlights the main sustainability aspects to consider for this project:

Sustainability Aspect	Wingecarribee Local Environmental Plan (LEP) 2010	SSD Process (IES/ SEARs)
Biodiversity & Habitat Protection	Environmental zoning, riparian buffers	Biodiversity Development Assessment Report / Landscape plan
Heritage and Cultural Conservation	Heritage overlay, conservation area controls	
Water Quality & Catchment Health	Land use near waterways, runoff controls	Inclusion of water sensitive urban design (WSUD)
Building sustainability	Building height, orientation and lot size controls	Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.
Climate Resilience	Restrictions on flood-prone and bushfire-vulnerable areas	Net Zero Statement (Demonstrate how the development minimises greenhouse gas emissions) (reflecting the Government's goal of net zero emissions by 2050) > Fossil fuel free after occupation commences or transition to be fossil fuel-free by 1 Jan 2035 > Details of any renewable energy generation and storage and any passive and technical

design features that minimise energy consumption		
Urban Consolidation	Focus on infill and village-scale development	
Connecting to Country	Eco-Tourist facilities: enhance an appreciation of the environmental and cultural values of the site or area,	Potential of an Aboriginal Cultural Heritage Assessment Report, Social Impact Assessment and Engagement Report
Embodied Carbon	Provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development	

There are other Government strategies and frameworks that new developments should consider these include but are not limited to:

NSW Net Zero Plan Stage 1: 2020–2030	NSW Greener Places (An urban green infrastructure design framework for New South Wales)	Circular design guidelines for the built environment - Whole-of-life principles for transitioning buildings, precincts and infrastructure to a circular economy
50% reduction by 2030 (from 2005 levels)	Open Space for recreation: Enhances community access to parks and recreational areas	Design Out Waste and Pollution: strategies that prevent waste generation from the outset, reducing the need for resource-intensive remediation
70% reduction by 2035	Urban Tree Canopy: Increase tree coverage to mitigate urban heat island effects and improve air quality.	Keep Products and Materials in Use: Promote the reuse, repair, and recycling of materials to extend their lifecycle and maintain their value within the economy.
Net zero emissions by 2050	Bushlands and waterways: Protects and integrates natural ecosystems within urban settings to enhance biodiversity and ecological resilience	Regenerate Natural Systems: Approaches that restore and enhance natural ecosystems, contributing to environmental resilience.



SDRP Initial feedback

The SDRP initial feedback (19 December 2024) highlighted key aspects that the sustainability framework needed to include further in the final version. Response to the requirements include:

1. The report includes and illustrates how the project will contribute to NSW's Net Zero emissions ADP includes a (Low Emissions Design) Pillar where this is explained further in (Page 10) key aspects included in the sustainability framework include:
 - > Building Envelope and systems (best practice)
 - > Fully electric site
 - > Renewable fuel use for on-site generator
 - > Adaptive Re-use (embodied carbon reduction)
 - > Solar PV (and potential for future battery)
 - > Allowance for EV charging on site
2. A detailed approach to sustainability supporting and reinforcing the connection with country strategies from initial consultations back in (October 2024) has been embedded through the project's sustainability framework pillar 'Healthy & Connected Country' explained in (pages 14-16), Key aspects include that support key themes:
 - > **The importance of the Wingecarribee River to the Aboriginal people:** From a sustainability perspective, protecting the Wingecarribee River involves implementing actionable strategies to reduce average annual stormwater discharge and pollution. This includes the integration of Water Sensitive Urban Design (WSUD) principles, water capture and reuse initiatives.
 - > **Flora and Fauna:** Incorporation of native flora into the landscape design and other Bush tucker foods as part of the community garden space has been incorporated.
 - > **Reconciliation:** Heritage interpretation is embedded through outdoor artworks and storytelling elements integrated into the landscape design, fostering a deeper connection to Country and acknowledging Aboriginal culture and history.
3. Relationship between the river, walking trail and proposed works has been included through the graphical representation in (p15) showing a conceptual urban flood resilient response to the site using different Water Sensitive Urban Design strategies and water collection and re-use.

Embodied Carbon & SEPP (Sustainable Buildings) 2022 Compliance

The Berrima Gaol project has quantified materiality in accordance with the requirements of the NSW Sustainable Buildings SEPP 2022. This quantification aims to measure the greenhouse gas emissions associated with building materials using the NABERS Embodied emissions materials form. In line with the SEPP, the assessment has been undertaken using the most up-to-date architectural documentation and BIM modelling to ensure accuracy and transparency. The materials form is presented in the appendix of this report, demonstrating compliance with SEPP provisions and supporting the project's pathway towards reduced lifecycle emissions and future Net Zero outcomes.



3. Sustainability Framework

3.1 Sustainability Pillars

The design offers a unique opportunity to showcase an exemplary adaptive reuse design that honours and celebrates the site's rich historical context. By embedding key sustainability pillars aligned with local planning requirements, other third-party certifications targets while supporting the Connecting with Country framework the project will deliver a design that is community-focused, future-ready, and contributes meaningfully to NSW's vision for a low carbon and resilient future.

A tailored sustainability framework will underpin The Berrima Gaol precinct development, with three key Sustainability Pillars:

1. **Low-Emissions Design:** This pillar supports leadership in reducing greenhouse gas emissions, demonstrating a strong commitment to contributing to NSW's Net Zero target. It also enhances long-term energy security through investment in renewable energy.
2. **Circular Economy:** This pillar promotes a circular precinct including waste reduction through treatment, upcycling, and the integration of circular principles throughout all aspects of the project.
3. **Healthy & Connected with Country:** This pillar fosters a deep connection between people, place, and the environment by embedding cultural knowledge, community wellbeing, and ecological health into the design.

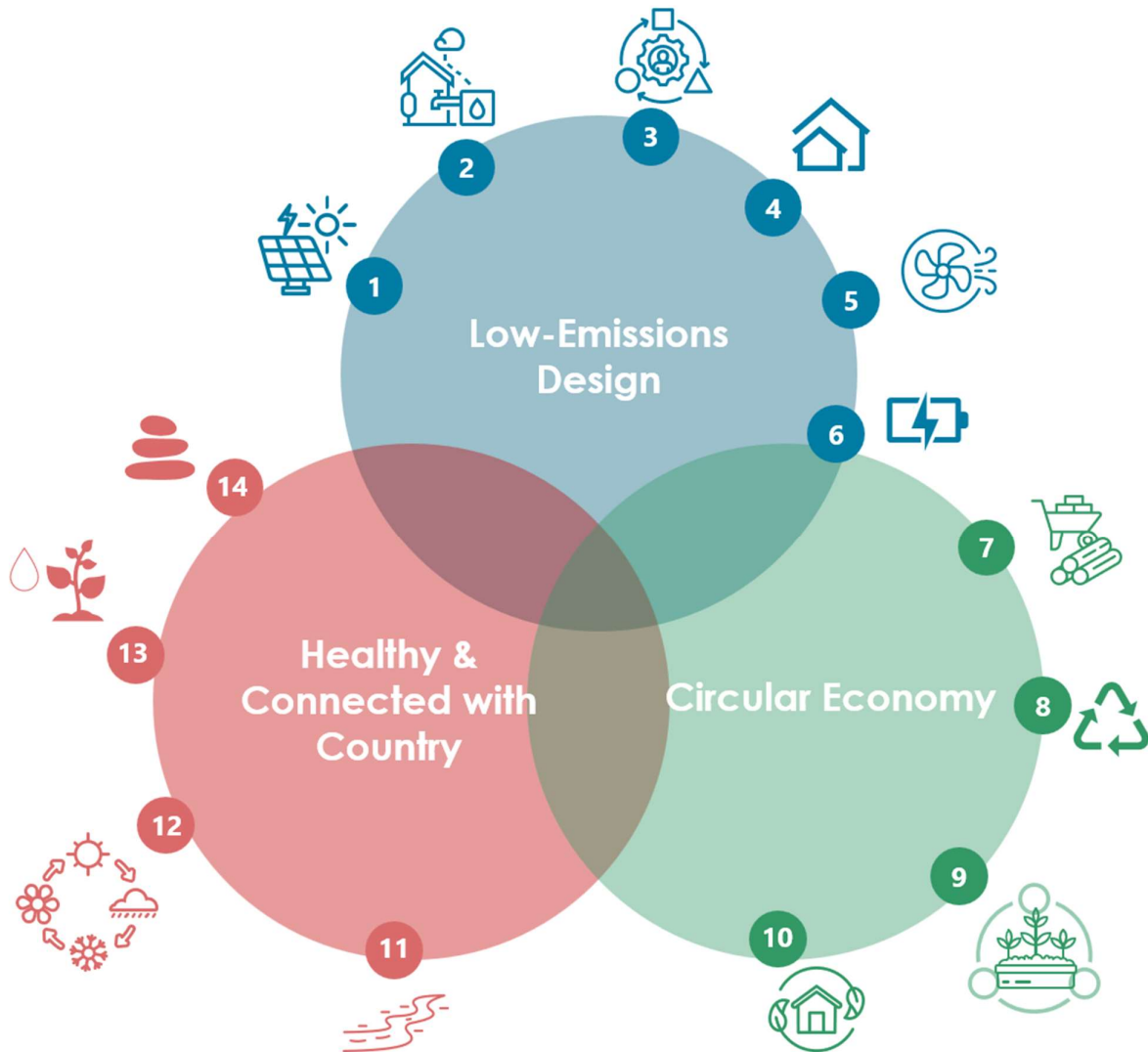


Figure 3: Berrima Gaol Sustainability Framework Source: ADP

Each pillar is underpinned by carefully considered sustainability initiatives that reflect insights from consultation, align with leading sustainability standards, and are tailored to the project's unique context, uses, and history. These initiatives have been collaboratively developed through workshops with the design team and client, demonstrating a shared commitment to embedding them meaningfully into the design process and outcomes.



3.2 Low Emissions Design Pillar - Initiatives

Net Zero Statement

The Berrima Gaol project embraces a bold vision for a net zero future, guided by a holistic Low Emissions Design Pillar that weaves together renewable energy, climate-adaptive strategies, water conservation, heritage-sensitive upgrades, and a fully electric precinct.

A rooftop solar PV system will power up to 46% of the site's energy needs, marking a significant step toward energy independence. Looking ahead, dedicated space for a future Battery Energy Storage System (BESS) will enable the capture of excess solar energy, strengthening the site's resilience and ensuring reliable, clean power even during peak demand or outages.

Smart, demand-driven HVAC systems—subtly integrated within the heritage fabric—will elevate energy performance without compromising the integrity of the historic site. Meanwhile, EV charging infrastructure will future-proof the precinct for the transition to cleaner, low-emissions transport.

Together, these initiatives form a forward-thinking precinct—reducing operational emissions, building climate resilience, and positioning Berrima as a model for sustainable, heritage-led regeneration.



1. Maximise Rooftop Solar Energy

Solar photovoltaic (PV) technology plays a crucial role in the race to achieve net-zero emissions because Solar PV generates electricity without emitting greenhouse gases during operation. The Berrima Gaol site has identified a potential annual PV electricity of ~329,532 kWh through solar mounted PV in the existing roof as well as the river side suites with a potential to cover ~45% of the electricity needs.

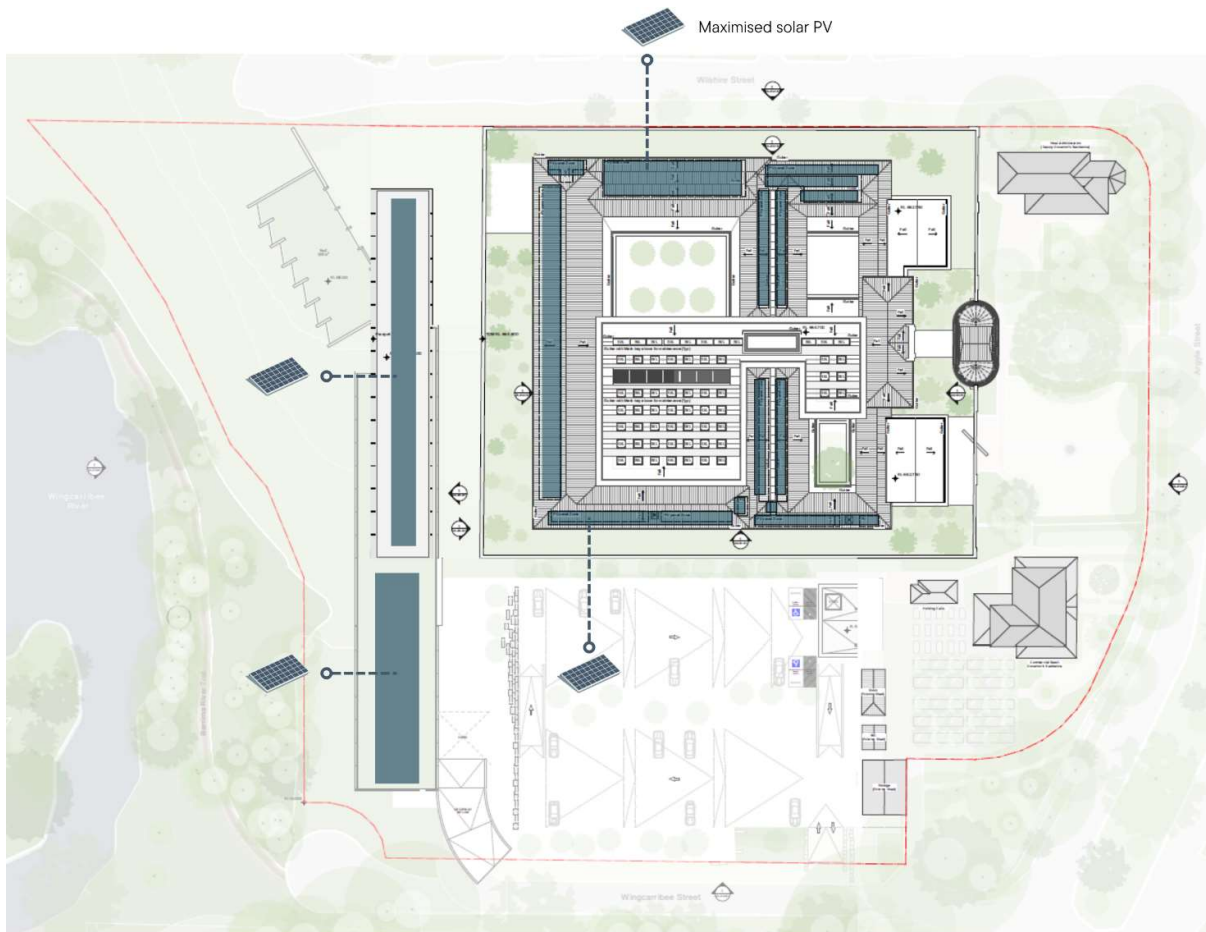


Figure 4: Berrima Gaol Solar PV strategy Source: ADP

In addition to Solar PV inclusion, the site will be designed with a generator powered entirely by renewable energy sources such as solar, biomass, wind, or hydro.



2. Rooftop Rainwater Capture

Capturing rainwater from rooftops is a key sustainability initiative that reduces reliance on potable water while supporting the site's resilience to climate variability. Collected rainwater will be stored and reused for landscape irrigation, toilet flushing, or other non-potable uses, significantly lowering water demand and operational costs. This approach also contributes to stormwater management by reducing runoff, helping to protect downstream ecosystems, and aligning with Water Sensitive Urban Design principles.



3. Future-Climate Adaptive Design

Climate-adaptive design integrates principles that future-proof buildings against the impacts of climate change, including extreme heat, storms, and shifting weather patterns. The approach is supported by smart technologies such as metering, sensors, and Building Management Systems (BMS) to monitor and optimise performance. Upgrades to existing building services—particularly air conditioning systems—are also planned to meet ambitious water and energy efficiency targets, ensuring resilience, occupant comfort, and long-term environmental performance.



4. Upgrade existing building envelope

Sensitive balance between heritage conservation and modern performance standards its imperative in this project. Improvements may include the discreet installation of high-performance insulation to improve thermal comfort while maintaining original wall and roof profiles. Window and door upgrades could involve secondary glazing or restoration with thermally broken frames to improve energy efficiency without compromising heritage character. Air sealing, subfloor insulation, and passive ventilation strategies will further enhance indoor environmental quality. These upgrades will aim to deliver improved thermal comfort, noise control, and energy performance—key for guest wellbeing—while honouring the building's historic fabric.



5. Demand-driven ventilation & conditioning

Demand-driven ventilation and conditioning systems are key to achieving both occupant comfort and energy efficiency. These systems are proposed to be intelligent to adjust airflow, temperature, and ventilation rates based on real-time occupancy and indoor air quality metrics (e.g. CO₂ levels, humidity, VOCs). This is particularly valuable in a setting with varied space use, such as guest rooms, treatment areas, lounges, and function rooms, where occupancy patterns can be irregular and unpredictable. Demand-driven systems will offer a non-invasive way to improve building performance without excessive retrofitting. Paired with carefully zoned HVAC upgrades and discreet ducting solutions, this approach will respect the heritage structure while supporting high indoor environmental quality and reducing operational emissions.



6. Energy Resilience

Integrating a Battery Energy Storage System (BESS) as part of the long-term strategy for the Berrima precinct is a critical step in future-proofing the site and supporting its transition to Net Zero emissions. Provisioning space and infrastructure within the master plan for a future BESS will allow for the capture and storage of excess renewable energy—such as from onsite solar PV—for use during peak demand periods, overnight, or during grid disruptions. This not only reduces reliance on fossil fuel-based grid electricity but also lowers operational emissions and significantly improves the site’s energy resilience.

In parallel, several Electric Vehicle (EV) charging stations will be installed within the carpark to support the transition to low-emissions transport. Powered by onsite renewables where possible, these chargers further contribute to the precinct’s sustainable energy ecosystem and reinforce its commitment to a circular, low-carbon future.

3.3 Circular Economy Pillar - Initiatives

Promotes a circular precinct including waste reduction through treatment, upcycling, and the integration of circular principles throughout all aspects of the project. It prioritises adaptive reuse, efficient resource management, and a systemic shift towards designing out waste from the outset. Key initiatives include:



7. Low-embodied carbon materials & Adaptive Reuse of existing Building

The adaptive reuse of the former Berrima Gaol site will sensitively incorporate new works into existing building fabrics whilst prioritising the selection of low-carbon materials that are healthier for both occupants and the environment. The following best-practice priorities will guide the approach to a low-carbon outcome:

- > **Adaptive Reuse of Existing Structures:** Berrima goal of State significance includes Victorian-era vernacular materials such as Sandstone and Masonry. A big portion will be retained, repaired rather than replaced with careful advice from heritage consultant reports. Some doors and windows will also be retained and repaired in preference to removal or replacement. Roof cladding in some instances to be replaced with traditional original materials as needed and recommended. Key floors and finishes throughout should conserve original floors and floor structures. The strategy includes a maintenance management plan to ensure continuous protective care for all heritage listed components.
- > **Use of Certified, Low-Carbon Materials:** Priority will be given to responsibly sourced building products that hold Environmental Product Declarations (EPDs) or equivalent third-party certifications supporting low-carbon and environmentally responsible manufacturing practices.
- > **Compliance with VOC Standards:** All paints, adhesives, sealants, and carpets will be chosen to meet prescribed limits for Total Volatile Organic Compounds (TVOCs), contributing to a healthier indoor environment.
- > **Embodied carbon quantification and reporting** (NABERS embodied carbon quantification of materials)



8. 1. Onsite material reuse & repurposing / 2. Recycling and waste separation

The project will adopt circular economy principles, delivering minimised resource usage and aligning to broader NSW waste reduction targets which include achieving an 80% average recovery rate across all waste streams by 2030. The project will incorporate future considerations for adaptability and disassembly as well as waste separation including:

- > Reuse of existing materials from demolished buildings and excavation materials: The design advocates and includes strategies for re-using existing salvageable materials of the Berrima Gaol building proposing a selective deconstruction and dismantling of resource stream separation to be upcycled and re-used on the projects for other purposes such as landscaping, furniture, art installations or wall additions.
- > The project will aim to divert a large portion of construction and demolition waste from landfill in line with NSW targets.
- > The precinct will provide 8 different waste streams recycling streams covered in the OWMP (operational waste management plan)
- > An on-site management of food and garden waste will be included to minimise organic waste going into landfill.



9. Veggie garden to supply restaurant/ working with organic waste

The landscape design places edible gardens at the heart of the Berrima precinct—nurturing community well-being, sustainability, and a deep connection to Country. These gardens will champion food security, inspire healthy living, and significantly reduce the environmental impact of food production.

The integration of bush tucker plants celebrates native Australian edible species, inviting people to reconnect with the land through cultural knowledge and ecological appreciation. A portion of the gardens will be housed in a greenhouse, enabling year-round growing and seasonal resilience. These greenhouse gardens are envisioned to supply fresh, hyper-local produce directly to the on-site restaurant, creating a vibrant, self-sustaining food network.

Anchored in circular economy principles, the system will link food cultivation with organic waste composting and natural fertiliser production—offering a hands-on, regenerative model that empowers the community to engage in sustainable land stewardship and reimagine the future of food.



10. Riverside Suites: Design Response to Country and Water

A hotel accommodation building is proposed to be sited to the rear of the gaol. Given the proximity of this area of the site to the Wingecarribee River it is essential that the design and construction of these suites demonstrate respect for, and stewardship of, the river and its surrounding environment.

To minimise environmental impact and align with Caring for Country principles, the design prioritises the following initiatives:

- > Use of natural, locally sourced materials for both structure and finishes to reduce embodied carbon and reflect the local landscape.
- > Rainwater capture and re-use systems to reduce pressure on natural water sources.
- > Green roofs with filtering and biodiverse planting to support habitat creation, stormwater filtration, and thermal performance.
- > Passive solar design to maximize natural light and reduce reliance on artificial lighting and heating
- > High-performance, energy-efficient systems to reduce operational carbon and environmental footprint.
- > Implementation of a waste management and recycling program to minimize construction and operational waste
- > PV panels / renewable energy sources on roofs.

3.4 Healthy & Connected with Country - Initiatives

Fostering a deep connection between people, place, and the environment by embedding cultural knowledge, community wellbeing, and ecological health into the design. It supports Country-led principles through inclusive, respectful engagement with Traditional Custodians and ensures that natural systems—such as water, vegetation, and wildlife—are protected and celebrated.



11. Caring for the Wingecarribee River

To protect the health of the river, the project will adopt a holistic, landscape-led water management approach. key strategies include:

- > Remediation of contaminated ground
- > Re-vegetation of the area abounding the river corridor with appropriate native and endemic species (aiding the natural filtration of surface runoff reducing nutrient and sediment loads) Establishing native vegetation to filter surface runoff and reduce nutrient and sediment loads.
- > Future discussions with the local Council and state government on potential initiatives to repair & regenerate the river corridor which is infested with weeds.



- > Prepare a Vegetation Management Plan for the river corridor and upland area adjoining the site.
- > WSUD and stormwater detention and retention systems designed within the landscape will help slow and treat runoff to mimic natural hydrological cycles.
- > Rainwater harvesting and reuse (capturing roof runoff in tanks for irrigation and non-potable water uses will reduce the flow volumes into the river during peak rainfall).
- > Sensitive construction practices which minimise disturbance to natural water flow and sediment during works following best practice erosion and sediment control



12. Building Operates with the seasons and connection to the outdoors

The building is design to operate according to the seasons for the specific climate zone that Berrima sits in characterised by warm temperate summers and cool, moderately wet winters, with occasional frost events. Seasonal differences will be taken into account in several different ways including:

- > The heritage building features internal courtyards that bring natural light, fresh air, and greenery into the heart of the building—fostering a strong connection to the outdoors and the changing seasons. Occupants will be able to open glazed courtyard doors to suit the event type and prevailing weather conditions.
- > The River Suites have been thoughtfully designed most with dedicated balcony spaces that are protected from the elements. These include extended roof overhangs, integrated shading, and, in some cases, adjustable screening—giving occupants full control over their comfort and connection to the landscape.
- > Active climate control systems will form the foundation of the mechanical and electrical strategy, ensuring optimal indoor comfort—an essential priority for a guest-focused development. Key features will include zoned temperature control, integration with the Building Management System (BMS), and energy-efficient VRF/VRV systems. Demand-controlled ventilation, using occupancy sensors to regulate fresh air supply in real time, will further enhance performance.
- > Smart thermostats and the potential integration of chilled beam or displacement ventilation systems will be explored in the next project phase to identify the most effective solutions for comfort, efficiency, and operational flexibility.



13. The Carpark design will embed Country-centered sustainability principles

The car park integrates Water Sensitive Urban Design to manage stormwater naturally to filter water runoff from the carpark before it enters the Wingecarribee River, reduce urban heat, and enhance ecological resilience. Through native planting and biodiversity support, the design strengthens habitat values and reflects local ecosystems. Importantly, it fosters a meaningful Connection with Country, embedding cultural values into the landscape and honouring traditional knowledge systems in the way people arrive, move through, and interact with the site. Key WSUD strategies include:

- > Permeable Pavements which allow water to soak through the pavement and filtered by underlying layers
- > Inclusion of Vegetated Swales lined with local grasses and native plants which will help slow down runoff, allowing sedimentation and filtrations.
- > Raingardens that collect and treat runoff
- > Other elements that could be integrated in subsequent stages and aligned with civil works includes Gross Pollutant Traps (Mechanical filtration systems installed underground in drainage lines.)



14. Heritage interpretation

An integral part of the sustainability strategy for the Berrima precinct is the recognition and celebration of the site's Aboriginal heritage through inclusive, place-based design. The project will embed heritage interpretation artworks throughout the precinct, developed in close collaboration with local Aboriginal artists and knowledge holders from the Berrima region. These works will express cultural stories, seasonal cycles, and Country-specific knowledge, reinforcing the site's deep connection to the Wingecarribee River and surrounding landscape. The design process will incorporate opportunities to include consultation and co-design with local Aboriginal communities to ensure cultural authenticity, relevance, and respect. Interpretive elements—ranging from sculptural works to integrated landscape features—will be positioned strategically across the site to invite reflection, education, and cultural exchange for all visitors and users.

3.5 Sustainable Water Design Strategies

The water strategy adopts an integrated approach to circular water use, centred around a main underground rainwater tank. This tank will collect and store enough water to irrigate the proposed landscape, which is estimated to require approximately 1,765 kL per year. In addition to irrigation, the stored rainwater will be used for non-potable applications such as toilet flushing, supporting a circular water economy.

Complementary Water Sensitive Urban Design (WSUD) measures include green roofs to filter rainwater, bioswales and raingardens to treat stormwater runoff, and the revegetation of the riverbank with native species to improve ecological resilience. Together, these initiatives aim to strengthen the relationship between the development and the Wingecarribee River, creating a site that is more resilient to both water scarcity and flooding.

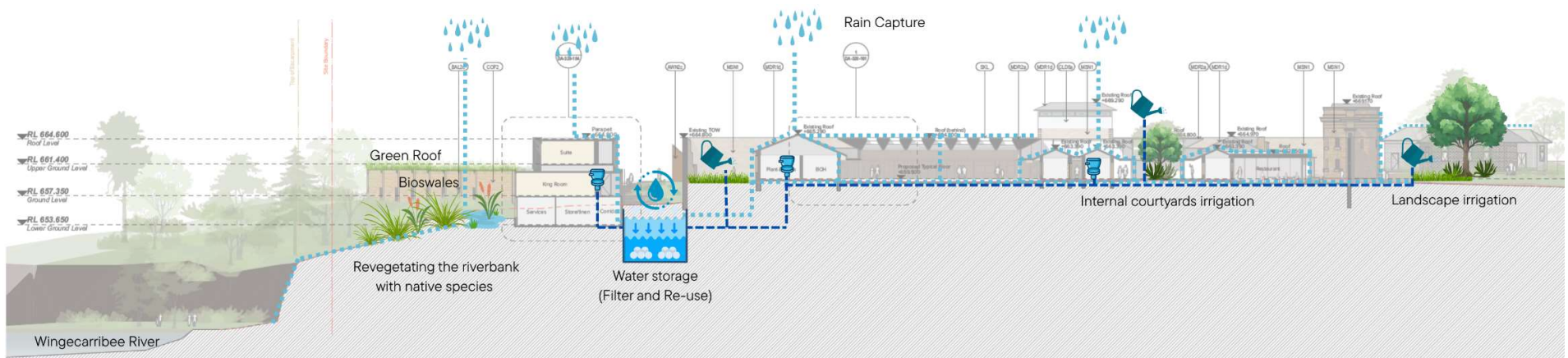


Figure 5: Berrima Gaol Sustainability water design strategies diagram Source: ADP



4. Appendix

NABERS Embodied emissions materials form (in print Format)



NSW Government
4 Parramatta Square
Parramatta NSW 2150
nabers.gov.au

NABERS Embodied emissions materials form

New non-residential developments must complete this form

From 1 October 2023, all new non-residential developments must report on embodied emissions using this form in NSW, where the NSW government's State Environmental Planning Policy (Sustainable Buildings SEPP) 2022 applies. You must disclose the amounts of key materials at the development application and construction certificate stages.

[More on the Sustainable Buildings SEPP](#)

Embodied carbon emissions are generated across the full life cycle of a building from "cradle to grave". Embodied carbon made up 16% of the whole-of-life carbon footprint of Australia's buildings in 2019 [1]. The purpose of this form is to report on material quantities only, to support project team discussions about potential reduction in emissions from key materials. The form does not include embodied emissions factors. This reporting form will be updated to reflect the NABERS Embodied Carbon tool when it's available in 2024.

Step 1: About the building

In the 'About the building' tab, you will add the location, function, and type of building you are planning to construct. You will also need to add information that describes the building, including gross floor area, number of floors, area of carpark, and more. Collecting this information will allow the NSW Government to compare similar buildings.

Step 2: Quantity of materials

In the 'Quantity of materials' tab, you will add the amounts of materials that you will use to construct your building. You only need to complete those fields relevant to your building. Leave fields that aren't relevant to your building blank. We recognise that there will be uncertainty, particularly at DA stage, so please use your best estimates where information is unknown (e.g., based on past projects).

How much do I need to include?

You must include all parts of the building delivered by the main contractor, covering at least 80% of the total materials bill. For example, if you spent \$100,000 on materials, you need to include the material amounts of at least \$80,000 of those materials in this form.

Wherever possible, consider materials costs only, not labour, plant or equipment. However, where you cannot split out the materials costs, please simply be consistent in the way the costs are reported throughout the spreadsheet.

Enter the **quantity of materials** (excluding labour, plant, equipment, margins and taxes) for:

- (1) Structure (substructure and superstructure) within the envelope of the building. Also include any ancillary buildings that are necessary for the main building to function (for example, plant that is in a separate building).
- (2) Envelope (cladding, curtain walls, roofing, windows, doors etc.)
- (3) Permanent internal walls and doors. At minimum, this should include all structural walls.
- (4) External works (hard landscaping, carparks, etc.) outside of the building envelope.

Enter the **cost of materials** (excluding labour, plant, equipment, margins and taxes) for:

- (5) Building services (mechanical, electrical, plumbing, vertical transport, etc.) required to run the core of the building. Exclude special equipment required by a particular tenant.

You must enter the amounts of materials in SI units (commonly known as the metric system). These are generally consistent across the various products on the market. However, you might need to convert the units of some materials (for example, convert volume to kg).

Step 3: Certifier details

In the 'Certifier' tab you will add the details of the person who has entered data, and the person who has certified the accuracy of the data. The certifier must be a quantity surveyor, designer, engineer or NABERS assessor.

Step 4: Attach to approval

Attach this Excel spreadsheet to your development application or construction certificate application.

The data collected in this form will be used by the NSW Government to inform future policy development.

Help!

If you have general questions about reporting on the embodied emissions of your building, you should contact your local council or consent authority.

If you have technical questions about this spreadsheet, please contact NABERS:
nabers@environment.nsw.gov.au

[1] Green Building Council of Australia, 2021, <https://new.gbca.org.au/news/gbca-news/gbca-and-thinkstep-release-embodied-carbon-report/>



Step 1: About the building

Fill out blue cells

Building location and site data	Value	Unit	Note	Comment
Building address	2-4 Argyle Street			
Postcode	2577		Required	Postcode of building
Town/city	Berrima, NSW		Town/city/suburb/region automated from postcode (may not give exact town name)	Town/city/suburb/region of the building site
Distance to nearest major city/town	120	km	Enter for rural/regional locations only	Declare the shortest route by road to your site from the centre of your nearest major city (>100,000 people). The route must be traversable by a semi-trailer truck.
Project stage	Development Application		Required	Stage of development
New build or major renovation?	New build		Required	
Brownfield or greenfield site?	Brownfield		Required	

Floor area by NCC building classification	Gross (GFA)	Net (NLA/NSA/UA)	Unit	Note
Please enter all floor areas relevant to your building. Leave areas blank if not applicable. Please enter Gross Floor Area (GFA) for all building classifications. Please also enter the corresponding net area (Net Lettable Area, Net Sellable Area or Usable Floor Area) where it is commonly used for that building classification.				
Class 1a: Detached residential buildings			m ²	Required for Class 1a: Detached residential houses, townhouses
Class 1b: Boarding houses and hostels			m ²	Required for Class 1b: Boarding house, guest house, hostel
Class 2: Multi-unit residential buildings			m ²	Required for Class 2: Multi-unit residential, including apartment buildings
Class 3: Other residential buildings	3,183		m ²	Required for Class 3: Other residential buildings
Class 4: Residential inside non-residential			m ²	Required for Class 4: Residential building inside a non-residential building, e.g., caretaker residence
Class 5: Office buildings			m ²	Required for Class 5: Office building
Class 6: Retail buildings	1,994		m ²	Required for Class 6: Retail building, e.g., shop, restaurant, cafe
Class 7a: Carparks	219		m ²	Required for Class 7a: Carparks
Class 7b: Warehouse-type buildings			m ²	Required for Class 7b: Warehouse, wholesalers and storage facilities
Class 8: Industrial buildings			m ²	Required for Class 8: Industrial buildings, e.g., factories and workshops
Class 9a: Healthcare buildings			m ²	Required for Class 9a: Healthcare, e.g., hospitals, clinics, day surgeries
Class 9b: Civic buildings	1,013		m ²	Required for Class 9b: Civic buildings, e.g., theatres, civic centres, train stations
Class 9c: Aged care and personal care buildings			m ²	Required for Class 9c: Aged care and personal care
Class 10a: Non-habitable buildings	88		m ²	Required for Class 10a: Non-habitable buildings including sheds, carports and private garages
Class 10b: Miscellaneous structures			m ²	Required for Class 10b: Miscellaneous structures, including fences, masts, antennae, retaining walls and swimming pools
Class 10c: Bushfire shelters			m ²	Required for Class 10c: Bushfire shelters not attached to a Class 1a building
Total	6,497	0	m ²	Required: Sum of m ² inputs must be more than 0

Project information	Value	Unit	Note
Total cost of project	52,000,000	AUD excl. GST	Required
Building design life	50	years	Required
Estimated envelope life		years	Optional
Estimated replacement cycle for mechanical services		years	Optional
Estimated replacement cycle for vertical transportation		years	Optional

Dimensions of the building and the site	Value	Unit	Note
Site area	18,969	m ²	Required
Shared services or infrastructure	Yes		Required
Building footprint area	6,510	m ²	Required
Typical floor area (if different to building footprint area)		m ²	Only needed if different to row above
Typical floor perimeter	848	m	Required
Area of external carpark (not included in GFA)	3,000	m ²	Required. Enter 0 if not applicable.
Area of external hardstand (not included in GFA)	2,335	m ²	Required. Enter 0 if not applicable.
Area of other hard landscaping (not included in GFA)	494	m ²	Required. Enter 0 if not applicable.
Number of floors/stories above ground, including ground floor	3	no.	Required
Number of floors/stories below ground	2	no.	Required. Enter 0 if not applicable.
Number of floors/stories of car parking	3	no.	Required. Enter 0 if not applicable.
Total height above ground	3	m	Required

Structural material choices	Value	Unit	Note
Foundation type	Pile		Required
Frame type (dominant)	Reinforced concrete		Required
Suspended floor type (typical)	Reinforced concrete		Only needed for multi-storey buildings
Describe low carbon materials specified in your building (e.g. green concrete, low carbon bricks)	Refer to the material & finishes board (DA-950-001). Please advise whether these materials have opportunities to be low-carbon or should we seek alternatives		Required
Describe recycled content specified in your building (e.g. recycled steel)	Sandstone blocks, concrete floors & paths, timber and steel from 'Industries' building, steel shed (behind gaol), timber fencing, corrugated steel roof sheets		Required



Step 2: Quantity of materials

Complete all blue cells that are applicable to the building. Leave items that aren't applicable blank.

Fill out blue cells

Material category	Sub-category 1	Sub-category 2	Sub-category 3	Value	Unit of measure	Comment	AIGS ACMM Code	ICM33 (Level 3 Codes Construction)
Structure								
The structural parts of the building that are below ground (substructure) and above ground (superstructure). This includes fill below the substructure, foundations, basement levels, suspended floors, wall structure, roof structure, stairs, lift shafts and balconies. It excludes external areas such as hardstands, carparks, patios, etc.								
Coverage of structural material spend	-	-	-	80	%	Required: Coverage of <u>spand</u> for structural elements entered below. Minimum requirement = 80%. Exclude head contractor preliminaries and margins.		
Concrete in-situ	≤10 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>10 MPa to ≤20 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>20 MPa to ≤32 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>32 MPa to ≤40 MPa	-	-	3,362.0	m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>40 MPa to ≤50 MPa	-	-	1,962.0	m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>50 MPa to ≤60 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>60 MPa to ≤80 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>80 MPa to ≤100 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete in-situ	>100 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	01_SB or 02-11	02 or 03
Concrete pre-cast panel	-	-	-		m²	Please enter reinforcing steel in relevant line items below. If not known at DA stage, please make your best estimate. If not known at CC stage, please ask your supplier.	01_SB or 02-11	02 or 03
Concrete block	Hollow core	-	-		m³	Enter as <u>cubic metres</u> , calculated as (area in m²) * (thickness in mm / 1000).	01_SB	02 or 03
Concrete block/brick	Solid	-	-		m³	Enter as <u>cubic metres</u> , calculated as (area in m²) * (thickness in mm / 1000).	01_SB	02 or 03
Concrete block/brick	Solid AAC	-	-		m³	Solid Aerasated Autoclaved Concrete (AAC) block. Enter as <u>cubic metres</u> , calculated as (area in m²) * (thickness in mm / 1000).	01_SB	02 or 03
Mortar	-	-	-		kg		01_SB	02 or 03
Reinforcing steel	Bar & mesh	-	-	658,489	kg	Include all reinforcing steel bar/mesh in the building's structure in this row. Usually this is calculated as kg/m³ per concrete element and then summed. Example: 10 m³ of 40 MPa concrete @ 100 kg/m³ + 5 m³ of 50 MPa concrete @ 150 kg/m³ = 1,750 kg reinforcing steel.	01_SB or 02-11	02 or 03
Reinforcing steel	Fibre & strand	-	-		kg	Include all steel fibre reinforcing and steel strand in the building's structure in this row.	01_SB or 02-11	02 or 03
Structural steel	Hot rolled structural	-	-		t	Examples include universal beams, universal columns and welded beams	01_SB	02 or 03
Structural steel	Cold formed structural	-	-		t	Examples include C purlins, Z purlins and all light gauge steel framing	01_SB	02 or 03
Structural steel	Other welded structural	-	-		t		01_SB	02 or 03
Structural steel	Plate	-	-		t	Include any allowance for connections here	01_SB	02 or 03
Structural steel	Sheet	-	-		t		01_SB	02 or 03
Stainless steel	-	-	-		t		02_11	02 or 03
Reinforced concrete piles	Concrete	-	-	295	m³	Primarily for engineered timber structure connections. Please enter reinforcing steel in the line below. If not known at DA stage, please make your best estimate. If not known at CC stage, please ask your supplier.	01_SB	02 or 03
Reinforced concrete piles	Steel reinforcing	-	-	57,000	kg	If not known at DA stage, please make your best estimate. If not known at CC stage, please ask your supplier.	01_SB	02 or 03
Steel piles	-	-	-		t	Where concrete and reinforcing steel are also used, enter these in the rows above.	01_SB	02 or 03
Timber poles/piles	-	-	-		m³	Where concrete and reinforcing steel are also used, enter these in the rows above.	01_SB	02 or 03
Timber (solid)	Sawn softwood	-	-		m³		02_11	02 or 03
Timber (solid)	Sawn hardwood	-	-	332.0	m³		02_11	02 or 03
Timber (engineered)	CLT	-	-		m³		02_11	02 or 03
Timber (engineered)	Glulam	-	-		m³		02_11	02 or 03
Timber (engineered)	LVL	-	-		m³		02_11	02 or 03
Timber (engineered)	OSB	-	-		m³	Enter as <u>cubic metres</u> , calculated as (area of wall in m²) * (thickness in mm / 1000)	02_11	02 or 03
Brick	Heat cured	-	-	5	m³	Enter as <u>cubic metres</u> , calculated as (area of wall in m²) * (thickness in mm / 1000)	02_11	02 or 03
Structural Insulated Panel (SIP)	Steel outer	-	-		m²		01_SB	02 or 03
Structural Insulated Panel (SIP)	Aluminium outer	-	-		m²		01_SB	02 or 03
Structural Insulated Panel (SIP)	Engineered timber outer	-	-		m²		01_SB	02 or 03
Fill	-	-	-		t	Include purchased material only. Exclude site-won material.	01_SB	01
Sand & gravel	-	-	-		t	Include purchased material only. Exclude site-won material and sand/gravel in concrete.	01_SB	01
Waterproofing membrane	Bituminous	-	-		m²		01_SB	01 or 02 or 03
Waterproofing membrane	Polyethylene	-	-		m²		01_SB	01 or 02 or 03
Other structural (Describe and add unit >>)		-	-			Please enter a description for any structural material that does not fit a predefined classification		
Other structural (Describe and add unit >>)		-	-			Please enter a description for any structural material that does not fit a predefined classification		
Other structural (Describe and add unit >>)		-	-			Please enter a description for any structural material that does not fit a predefined classification		



Envelope

The skin of the building that separates the internal building from the external environment. This includes the roof cladding, wall cladding, windows, doors and internal/external shading. It also includes insulation and the internal wall lining of envelope walls.

Coverage of envelope material spend				80	%	Required. Coverage of <u>glazed</u> for the envelope items you have entered below. Minimum requirement is 50%. Exclude head contractor preliminaries and margins.		
Roof cladding	Profiled steel	-	-		m ²	Enter as m ² of roof area. Exclude allowances for overlap in the roofing sheets. This row includes all metal-coated and pre-painted steel sheets where steel is the base metal. Examples include: galvanised steel, zinc-aluminium (zincalume) coated steel and zinc-aluminium-magnesium (ZAM) coated steel, whether painted or unpainted.	05_RF	03 or 04
Roof cladding	Profiled aluminium	-	-		m ²	Enter as m ² of roof area. Exclude allowances for overlap in the roofing sheets. This row also includes pre-painted aluminium sheets.	05_RF	03 or 04
Roof cladding	Profiled zinc	-	-	540	m ²	Enter as m ² of roof area. Exclude allowances for overlap in the roofing sheets. This row also includes pre-painted zinc sheets.	05_RF	03 or 04
Roof cladding	Membrane	-	-	450	m ²	Enter as m ² of roof area. Exclude allowances for overlap in the membrane sheets.	05_RF	03 or 04
Roof cladding	Tiles (traditional clay)	-	-		m ²	Enter as m ² of roof area. Exclude allowances for overlap between the tiles.	05_RF	03 or 04
Roof cladding	Tiles (concrete)	-	-		m ²	Enter as m ² of roof area. Exclude allowances for overlap between the tiles.	05_RF	03 or 04
Roof cladding	Other (Please describe >>)		-		m ²	Please enter a description for any roofing that does not fit a predefined classification	05_RF	03 or 04
Wall cladding	Bricks (heat cured)	-	-		m ²	Enter as m ² of wall area. Heat-cured bricks use a kiln or furnace to raise the brick temperature above ambient temperature during curing process.	06_EW	03 or 04
Wall cladding	Bricks (air dried)	-	-		m ²	Enter as m ² of wall area. Air-dried bricks are cured using ambient temperature.	06_EW	03 or 04
Wall cladding	Bricks (under fired)	-	-		m ²	Enter as m ² of wall area.	06_EW	03 or 04
Wall cladding	Bricks (concrete)	-	-		m ²	Enter as m ² of wall area.	06_EW	03 or 04
Wall cladding	Mortar and render	-	-		kg		06_EW	03 or 04
Wall cladding	Profiled steel	-	-		m ²	Enter as m ² of wall area. Exclude allowances for overlap in the cladding sheets, offcuts, etc. This row includes all metal-coated and pre-painted steel sheets where steel is the base metal. Examples include: galvanised steel, zinc-aluminium (zincalume) coated steel and zinc-aluminium-magnesium (ZAM) coated steel, whether painted or unpainted.	06_EW	03 or 04
Wall cladding	Profiled aluminium	-	-		m ²	Enter as m ² of wall area. Exclude allowances for overlap in the cladding sheets, offcuts, etc. This row also includes pre-painted aluminium sheets.	06_EW	03 or 04
Wall cladding	Profiled zinc	-	-		m ²	Enter as m ² of wall area. Exclude allowances for overlap in the cladding sheets, offcuts, etc. This row also includes pre-painted zinc sheets.	06_EW	03 or 04
Wall cladding	GRC cladding	-	-		m ²	Enter as m ² of wall area. GRC = Glass Reinforced Concrete.	06_EW	03 or 04
Wall cladding	Timber weatherboards	-	-	3,364	m ²	Enter as m ² of wall area. Exclude allowances for overlap between weatherboards, offcuts, etc.	06_EW	03 or 04
Wall cladding	Fibre cement board	-	-		m ²	Enter as m ² of wall area. Exclude allowances for offcuts, etc.	06_EW	03 or 04
Wall cladding	Terracotta	-	-		m ²	Enter as m ² of wall area. Exclude allowances for offcuts, etc.	06_EW	03 or 04
Wall cladding	Brick tiles / veneers	-	-		m ²	Enter as m ² of wall area. Exclude allowances for offcuts, etc.	06_EW	03 or 04
Wall cladding	Plasterboard	-	-		m ²	Enter as m ² of wall area. Exclude allowances for offcuts, etc. Include both external wall linings and internal wall linings for envelope walls.	12_WF or 06_EW	03 or 04
Wall cladding	Plywood	-	-		m ²	Enter as m ² of wall area. Exclude allowances for offcuts, etc. Include both external wall linings and internal wall linings for envelope walls.	12_WF or 06_EW	03 or 04
Wall cladding	Other (Please describe >>)		-		m ²	Please enter a description for any wall cladding that does not fit a predefined classification	06_EW or 12_WF	03 or 04
Windows & doors	Aluminium frame	Single glazed	-		m ²	Include all single glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Aluminium frame	Double glazed	-	4,723	m ²	Include all double glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Aluminium frame	Triple glazed	-		m ²	Include all triple glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Timber frame	Single glazed	-		m ²	Include all single glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Timber frame	Double glazed	-		m ²	Include all double glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Timber frame	Triple glazed	-		m ²	Include all triple glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	uPVC frame	Single glazed	-		m ²	Include all single glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	uPVC frame	Double glazed	-		m ²	Include all double glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	uPVC frame	Triple glazed	-		m ²	Include all triple glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Frameless	Single glazed	-		m ²	Include all single glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Frameless	Double glazed	-		m ²	Include all double glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Frameless	Triple glazed	-		m ²	Include all triple glazing, including standard, toughened, laminated and low-E	07_WW or 08_ED	03 or 04
Windows & doors	Other (Please describe >>)		-		m ²	Please enter a description for any windows or doors that do not fit a predefined classification	07_WW or 08_ED	03 or 04
Curtain wall	Single skin facade	Glazed panel	Single glazed		m ²	Please declare all single-skin facade area in this section. All double-skin facade area should be entered in the next section. Include all single glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Curtain wall	Single skin facade	Glazed panel	Double glazed		m ²	Include all double glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Curtain wall	Single skin facade	Glazed panel	Triple glazed		m ²	Include all triple glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Curtain wall	Single skin facade	Opaque panel	Aluminium cladding		m ²		06_EW	03 or 04
Curtain wall	Single skin facade	Opaque panel	GRC cladding		m ²	GRC = Glass-fibre Reinforced Concrete	06_EW	03 or 04
Curtain wall	Single skin facade	Opaque panel	Insulated shadow box		m ²		06_EW	03 or 04
Curtain wall	Single skin facade	Opaque panel	Brick cladding		m ²		06_EW	03 or 04
Curtain wall	Single skin facade	Opaque panel	Stone cladding	6,062	m ²		06_EW	03 or 04
Curtain wall	Double skin facade	Glazed panel	Single glazed		m ²	Please declare all double-skin facade area in this section. Please declare as the area of the curtain wall and do not enter the inner and outer skins twice. Include all single glazing, including standard, toughened, laminated and low-E.	06_EW	03 or 04
Curtain wall	Double skin facade	Glazed panel	Double glazed		m ²	The type of glazing refers to the building's envelope wall, not including the outer skin	06_EW	03 or 04
Curtain wall	Double skin facade	Glazed panel	Triple glazed		m ²	The type of glazing refers to the building's envelope wall, not including the outer skin	06_EW	03 or 04
Curtain wall	Double skin facade	Opaque panel	Aluminium cladding		m ²		06_EW	03 or 04
Curtain wall	Double skin facade	Opaque panel	GRC cladding		m ²	GRC = Glass-fibre Reinforced Concrete	06_EW	03 or 04
Curtain wall	Double skin facade	Opaque panel	Insulated shadow box		m ²		06_EW	03 or 04
Curtain wall	Double skin facade	Opaque panel	Brick cladding		m ²		06_EW	03 or 04
Curtain wall	Double skin facade	Opaque panel	Stone cladding		m ²		06_EW	03 or 04
Curtain wall	Other (Please describe >>)		-		m ²	Please enter a description for any curtain wall that does not fit a predefined classification	06_EW	03 or 04



Stick-framed wall system	Aluminium frame	Glazed section	Single glazed	m ²	Include all single glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Glazed section	Double glazed	m ²	Include all double glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Glazed section	Triple glazed	m ²	Include all triple glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Opaque section	Aluminium cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Opaque section	GRC cladding	m ²	GRC = Glass-fibre Reinforced Concrete	06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Opaque section	Insulated shadow box	m ²		06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Opaque section	Brick cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Aluminium frame	Opaque section	Stone cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Steel frame	Glazed section	Single glazed	m ²	Include all single glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Steel frame	Glazed section	Double glazed	m ²	Include all double glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Steel frame	Glazed section	Triple glazed	m ²	Include all triple glazing, including standard, toughened, laminated and low-E	06_EW	03 or 04
Stick-framed wall system	Steel frame	Opaque section	Aluminium cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Steel frame	Opaque section	GRC cladding	m ²	GRC = Glass-fibre Reinforced Concrete	06_EW	03 or 04
Stick-framed wall system	Steel frame	Opaque section	Insulated shadow box	m ²		06_EW	03 or 04
Stick-framed wall system	Steel frame	Opaque section	Brick cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Steel frame	Opaque section	Stone cladding	m ²		06_EW	03 or 04
Stick-framed wall system	Other (Please describe >>)			m ²	Please enter a description for any wall system that does not fit a predefined classification	06_EW	03 or 04
Wall louvre system	Aluminium	-	-	2,060 m ²		06_EW	03 or 04
External shading system	Aluminium frame	Aluminium cladding	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	GRC cladding	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000). GRC = Glass-fibre Reinforced Concrete.	06_EW	03 or 04
External shading system	Aluminium frame	Tenacoste cladding	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	Stone cladding	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	Pre-cast concrete	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	Timber	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	Glass (opaque)	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Aluminium frame	Steel	-	m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
External shading system	Other (Please describe >>)	Perforated Aluminium	-	2,228 m ²	Please enter as m ² of shaded area = linear metres * (width in mm / 1000)	06_EW	03 or 04
Roller doors	Steel profile	-	-	m ²	Please note unit is square metres, not quantity	06_ED	03 or 04
Roller doors	Hardwood over steel	-	-	m ²	Please note unit is square metres, not quantity	06_ED	03 or 04
Roller doors	Softwood over steel	-	-	m ²	Please note unit is square metres, not quantity	06_ED	03 or 04
Revolving doors	Glass/aluminium/steel	-	-	no.		06_ED	03 or 04
Fire-rated doors	Engineered timber	-	-	no.	Please enter as single-leaf equivalent. For double-leaf doors, multiply the quantity by 2.	06_ED	03 or 04
Fire-rated doors	Steel	-	-	no.	Please enter as single-leaf equivalent. For double-leaf doors, multiply the quantity by 2.	06_ED	03 or 04
Fire-rated doors	Aluminium/glass	-	-	no.	Please enter as single-leaf equivalent. For double-leaf doors, multiply the quantity by 2.	06_ED	03 or 04
Insulation	Glass wool / fibreglass	-	-	3,614.0 m ³	Please include both wall and ceiling insulation	05_RF or 06_EW	03 or 04
Insulation	Stone wool	-	-	m ³	Please include both wall and ceiling insulation	05_RF or 06_EW	03 or 04
Insulation	Polystyrene	-	-	m ³	Please include both wall and ceiling insulation	05_RF or 06_EW	03 or 04
Insulation	Expanded polystyrene	-	-	m ³	Please include both wall and ceiling insulation	05_RF or 06_EW	03 or 04
Insulation	Other (Please describe >>)			m ³	Please include both wall and ceiling insulation	05_RF or 06_EW	03 or 04
Other (Please describe and add unit >>)	Plaster	-	-	456.0 m ²	Please enter a description for any envelope material that does not fit a predefined classification		
Other (Please describe and add unit >>)	Cooper	-	-	35.0 m ²	Please enter a description for any envelope material that does not fit a predefined classification		
Other (Please describe and add unit >>)	Sandstone	-	-	80.0 m ²	Please enter a description for any envelope material that does not fit a predefined classification		
Other (Please describe and add unit >>)	Aluminium balustrades	-	-	9.0 m ²	Please enter a description for any envelope material that does not fit a predefined classification		
Other (Please describe and add unit >>)	Rammed Earth	-	-	242.0 m ²			

Services				Unit of measure			
Building services included within the main building contract. If the building components that are the subject of the development application or the construction certificate are base building only, then only enter these items. If you cannot split services by type, please enter them all in the "Other services" category at the bottom. Enter all values as material costs in dollars.							
Mechanical services	-	-	-	AUD excl. GST	Where possible, enter material costs excluding labour, plant, equipment, margins and taxes	28_SS	05
Vertical transportation	-	-	-	4 no.	Where possible, enter material costs excluding labour, plant, equipment, margins and taxes	28_SS	05
Electrical services	-	-	-	AUD excl. GST	Electrical services including the main power supply, backup generators, security and communications. Excluding solar installations.	26_LP	05
Solar photovoltaic installations	-	-	-	AUD excl. GST	Where possible, enter material costs excluding labour, plant, equipment, margins and taxes.	26_LP_LPGP	05
Plumbing/hydraulic services	-	-	-	AUD excl. GST	Where possible, enter material costs excluding labour, plant, equipment, margins and taxes	18_PD and 19_SS	05 or 06
Fire services	-	-	-	AUD excl. GST	Where possible, enter material costs excluding labour, plant, equipment, margins and taxes	25_FPS504 or 39_KAWW_03 or 41_XF	05
Other services (Please describe)		-	-	AUD excl. GST	Please group all other services here, meaning that coverage will always be 100% for services. Enter only the material costs (excluding labour, plant, equipment, margins and taxes).	29_SS or multiple	

External works							
The materials associated with hard landscaping and outbuildings on the site but outside the building envelope. This includes handstands, carparks, driveways, covered walkways, decks, patios, awnings, fences, gates, etc. Soft landscaping should be excluded.							
Coverage of spend on external works	-	-	-	80	%	Required. Coverage of spend for external works (excluding soft landscaping) entered below. Minimum requirement = 80%. Exclude head contractor preliminaries and margins.	
Asphalt	-	-	-		t		33_XR 07
Concrete in-situ	≤10 MPa	-	-	1.0	m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Concrete in-situ	>10 MPa to ≤20 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Concrete in-situ	>20 MPa to ≤32 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Concrete in-situ	>32 MPa to ≤40 MPa	-	-	1,501.0	m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Concrete in-situ	>40 MPa to ≤50 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Concrete in-situ	>50 MPa	-	-		m³	Please enter reinforcing steel as part of "Reinforcing steel" below	33_XR or 34_XN or 35_XB or 36_XL 07
Pavers, bricks and blocks	Concrete	-	-	904.0	m²	stone	33_XR 07
Pavers, bricks and blocks	Clay	-	-		m²		33_XR 07
Reinforcing steel	Bar & mesh	-	-	225,116	kg	Include all reinforcing steel bar/mesh in the external works in this row. Usually this is calculated as kg/m² per concrete element and then summed. Example: 10 m² of 40 MPa concrete @ 100 kg/m² + 5 m³ of 50 MPa concrete @ 150 kg/m³ = 1,750 kg reinforcing steel.	33_XR or 34_XN or 35_XB or 36_XL 07
Reinforcing steel	Fibre & strand	-	-		kg	Include all steel fibre reinforcing and steel strand in the external works in this row.	33_XR or 34_XN or 35_XB or 36_XL 07
Structural steel	-	-	-		t		02_11 07
Structural aluminium	-	-	-		t	Includes structures, louvre systems, etc.	35_XB 07
External roofwall cladding	Polycarbonate	-	-		m²	Enter as profiled polycarbonate sheet that would ordered, including allowance for overlap	35_XB 07
External roofwall cladding	PVC	-	-		m²	Enter as aluminium sheet that would ordered, including allowance for overlap	35_XB 07
External roofwall cladding	Blumen sheet	-	-		m²	Enter as aluminium sheet that would ordered, including allowance for overlap	35_XB 07
External roofwall cladding	Steel profile	-	-		t	Enter as profiled steel sheet that would ordered, including allowance for overlap	35_XB 07
Fill	-	-	-		t	Include purchased material only. Exclude site-won material.	33_XR or 34_XN or 35_XB or 36_XL 07
Sand & gravel	-	-	-		t	Include purchased material only. Exclude site-won material and sand/gravel in concrete.	33_XR or 34_XN or 35_XB or 36_XL 07
Timber (solid)	Sawn softwood	-	-	14.0	m³		33_XR or 34_XN or 35_XB or 36_XL 07
Timber (solid)	Sawn hardwood	-	-		m³		33_XR or 34_XN or 35_XB or 36_XL 07
Timber (engineered)	CLT	-	-		m³		33_XR or 34_XN or 35_XB or 36_XL 07
Timber (engineered)	Glulam	-	-		m³		33_XR or 34_XN or 35_XB or 36_XL 07
Timber (engineered)	LVL	-	-		m³		33_XR or 34_XN or 35_XB or 36_XL 07
Timber (engineered)	OSB	-	-		m³		33_XR or 34_XN or 35_XB or 36_XL 07
Fabric (awning/sunshade)	-	-	-		m²		35_XB or 36_XL 07
Other (Please describe and add unit >>)	perforated alum mesh	-	-	227.0	m²	Please enter a description for any external works that does not fit a predefined classification	
Other (Please describe and add unit >>)	rammed earth	-	-	1,421.0	m²	Please enter a description for any external works that does not fit a predefined classification	
Other (Please describe and add unit >>)	cooper sheet	-	-	197.0	m²	Please enter a description for any external works that does not fit a predefined classification	



NABERS Embodied emissions materials form (in print Format)

Step 3: Certifier details

Fill out blue cells

The material quantities must be determined through an itemised list of building materials (such as a bill of quantities) and certified by a quantity surveyor, designer, engineer or NABERS Assessor.

Person that completed this form	Value	Note
Name	Laura Pachon Colorado	Required
Company	ADP CONSULTING PTY LTD	Required
ABN	81139719529	
Profession	Designer and Senior Sustainability Consultant	Required
Qualification or registration	B.Des / M.Arch (Environmental Design), Certified in One Click LCA	Required

Person that certified the details in this form	Value	Note
Name	Jacob Delailoa	Required
Company	ADP CONSULTING PTY LTD	Required
ABN	81139719529	
Profession	Engineer and Sustainability Consultant	Required
Qualification or registration	NABERS Assessor	Required

Confirmation of certification	Value	Note
Are 80% of material costs captured for the building's structure, envelope and external works?	Yes	Required
If no - why not?		

Additional comments from data provider
Material Take off from the BIM model provided at the time has been included in the Quantities Tab

Additional comments of certifier

Attach this Excel spreadsheet to your development application or construction certificate application.



Material Take-off Quantification

Material Take off from BIM Model 20250807								TOTAL	Included
River Suites Building		Class	Unit	Quantity from Model					
Charcoal (assumes concrete)	Structure beams	m3	1.6	2.8	0	5.58	3.42	13.4	
Charcoal 2 (assumes 200mm concrete)	Internal walls (structural)	m2	5.24	9,983.66				9988.9	
Ceramic Tile	Finishes	m2	19.68					19.68	
Clusters Charred Timber	External walls (envelope)	m2	4.8					4.8	
Cluster Timber	Door/external walls (envelope)	m2	211.84	1,023.60	40.81			1276.25	
Clusters Cooper	Door/screens? (envelope)	m2	4.39	72.47	201.36			278.22	
Glass Clear	Door (envelope)	m2	7.3					7.3	
Insulation	Envelope	m2	2.24					2.24	
Paint white	Finishes	m2	85.82					85.82	
Aluminium Powdercoat	External walls (envelope)	m2	1,998.97					1998.97	
Aluminium Powdercoat frame	windows (envelope)	m2	4.26	5.49				9.75	
Charcoal (assumes alum)	windows (envelope)	m2	340.03					340.03	
Clear Glass	Envelope ext. walls	m2	626.93	1,234.96				1861.89	
Cluster Perforated Mesh (alum)	Envelope	m2	2,227.61					2227.61	
Cluster Rammed Earth	External walls (envelope)	m2	3,420.46					3420.46	
Concrete/ white	External Walls Envelope (structure?)	m2	413.96	460.14				874.1	
Plaster White	Envelope	m2	168.58					168.58	
Sandstone	Envelope ext. walls	m2	89.17					89.17	
Charcoal (Other) assumes concrete	Generic models (potentially slabs TBC)	m3	882.6	1.4	882.6			1766.6	
Cluster Charred Timber /charred	Generic models (potentially structure TBC)	m3	135.69	102.88				238.57	
Clusters Copper	found in: Generic model (Envelope?)	m3	13.94					13.94	
Charcoal (alum)	Stairs (balustrades)	m3	5.58					5.58	
Concrete stairs	Stairs landings and steps	m3	1.84					1.84	
Charcoal (Assumes Alum)	Vertical finish	m3	3.42					3.42	
Clusters Copper	Vertical finish	m3	7.14					7.14	
Glass Clear	Vertical finish / windows	m3	2.51					2.51	
Lift	Vertical Transport	unit	2					2	

Goal		Class	Unit	Quantity from Model					
Clusters Timber	Door/ window	m2	129.46	35.91				165.37	
Clear Glass	Door/windows	m2	47.14	1,929.82	669.6	207.43		2853.99	
Timber Frame (assumes structural)	Door/ external walls/ windows	m2	18.55	490.33	427.76			936.64	
Aluminium Powdercoat	External wall (Envelope)	m2	3.51					3.51	
Brickwork	External wall (Envelope)	m2	48					48	
Charcoal	External wall (Envelope) assumes 200mm conc	m2	1,146.92					1146.92	
Cluster Copper	Envelope	m2	327.38					327.38	
Cluster Timber	External envelope	m2	1,917.74					1917.74	
concrete (assumes 100mm)	External envelope	m2	6049					6049	
Plaster	External envelope	m2	287.82					287.82	
Steel	External envelope	m2	91.38					91.38	
Zinc	External envelope	m2	16.98					16.98	
Internal floor finish (assumes polished conc)	Floor Finish	m3	202.07					202.07	
Steel	roof	m2	522.57					522.57	
sandstone	External envelope	m2	714.96					714.96	
Lift	vertical transport	Unit	2					2	
white assumes external rainscreen cladding	External wall / windowTBC	m2	6,050	34.92				6085	
External Works									
Concrete	Structure / column/ other	m3	221.19	21.28	333.04			575.51	
Stone/ Sandstone	external works	m3	15.74	686.58	202.13			904.45	
Charcoal (assumes aluminium)	doors	m2	1.5					1.5	
Clusters Copper		m2	114.44	45.27	20.38	16.76		196.85	
Perforated Mesh		m2	44.06	165.14				209.2	
Clusters Timber		m2	30.3	11.56				41.86	
epoxy		m2	17.03					17.03	
Glass Clear		m2	6.38	352.75	81.5			440.63	
Insulation		m2	58.71					58.71	
Charcoal (Assumes 100mm Concrete walls)	external walls	m2	680.51					680.51	
Rammed earth	walls (might be conc walls TBC)	m2	1,421.48					1421.48	
Concrete walls		m2	169.94	3,775.85				3945.79	
Plaster White		m2	4,851.08					4851.08	
Cluster Timber		m3	10.07					10.07	
Charcoal assumes concrete for stairs	stairs	m3	2.23	0.7				2.93	
Charcoal (assumes aluminium)	windows and other	m2	16.77					16.77	

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