



Luma Village: Introduction

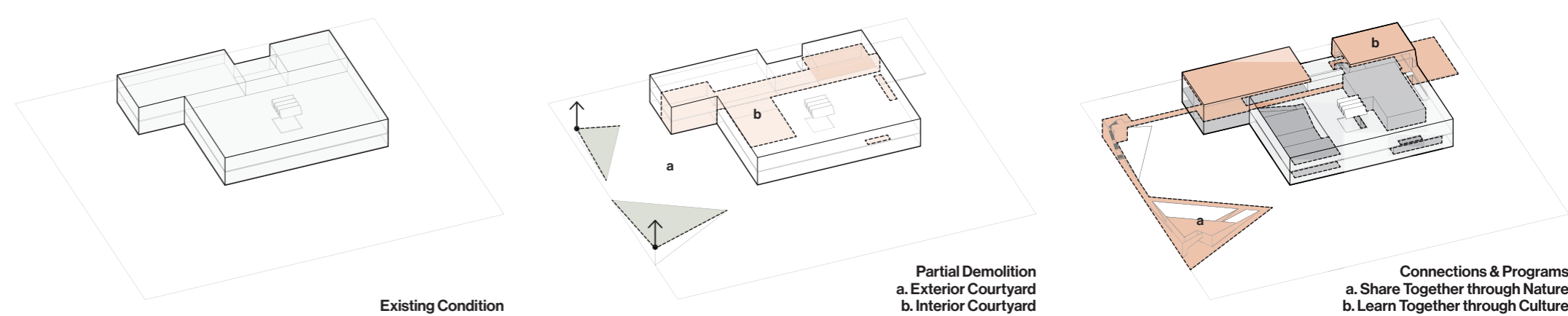
Luma Village's design and operation plan is crafted with a strong outward focus, considering how its influence can permeate the surrounding community. We believe the project should not be approached as a standalone entity but rather as a living organism that breathes and interacts with the fabric of the wider development context.

Luma Village serves to inspire and enable a broader community culture that resonates with LBC principles, encouraging voluntary participation towards environmentally and socially conscious ways of living. The project zooms in on providing practical tools and programs that make it easier to implement a regenerative lifestyle by removing everyday obstacles for residents. It breaks through the cultural inertia of the 'average' Australian lifestyle, creating cultural momentum towards a socially just, culturally vibrant, and ecologically restorative community. We trust that this cultural momentum will continue to grow, with the transformation seen at Luma inspiring the establishment of many more restorative communities across Australia and beyond.

Project Summary

Typology:	Existing Building	Final Project Calculation: (EDGE Assessment)
Transect:	L4. General Urban Zone	Annual Energy Use: 445,428 kWh/year (50.8% reduction)
Project Information:		Annual Water Use: 780 m ³ /year (72.2% reduction)
Total Project Area:	11,309.8m ²	Embodied Carbon: 265 Kg CO ₂ e/m ² (47.2% reduction)
Gross Building Area:	5,237.34m ²	Operational CO ₂ Emissions: 195.2 tCO ₂ /Year (48.3% reduction)
Total Project Internal Floor Area:	4,563.8m ²	Annual Rainwater Collection: 1,500m ³ /year (First flush not accounted for)
Aggregate Roof Area:	2,315m ²	Annual Solar Energy Production: 476,809 kWh (107% of Annual Energy Use)
Operational Days:	6 days/week	Urban Agricultural Area: 565.5m ² (5% of TPA)
Hours of Operation:	Mon-Fri: 8am-8pm Sat: 9am-6pm	
Baseline Calculation: (EDGE Assessment)		
Annual Energy Use:	905,341 kWh/year	
Annual Water Use:	2,810 m ³ /year	
Embodied Carbon:	562 Kg CO ₂ e/m ²	
Operational CO ₂ Emissions:	377.4 tCO ₂ /Year	

Design Response



Adaptive Reuse: Architecture and Heritage

1 'Emptying' to 'Fill':

A key limitation of the existing building was its horizontal layout, its low ceilings, poor interfloor connectivity, and insufficient natural light which made it unsuitable for public and creative programs. Our design response is to 'empty' out carefully selected volumes, allowing each of these new open voids to be 're-filled' with a dynamic interplay between people and colourful activities. This act of architectural 'emptying' embodies a vision where the occupants, their activities, and the natural elements of light, sound, and air are given precedence as the protagonists of the space.

2 Connecting to a New Context:

Our second design response is blurring the demarcation between the front and rear of the current building, allowing for a multidimensional frontage towards the community. We created multiple entry points, expanding the utility of the site and existing structure. Transforming the rear section into vibrant new frontage by introducing a new community library and recycling hub along the North-Eastern road and South-Eastern roundabout allows us to tap into the projected increase in foot traffic along these routes.

3 Indoor and Outdoor Courtyard Interplay:

By 'emptying' the central volume, we introduce an internal courtyard alongside a visually connected external courtyard. Seamlessly interconnected, they facilitate a spectrum of events, activities, and programs, creating multi-layered experiences that flow between interior and exterior scenes. A new entryway on the northern facade allows effortless circulation, enhancing the fluidity and functionality of the design.

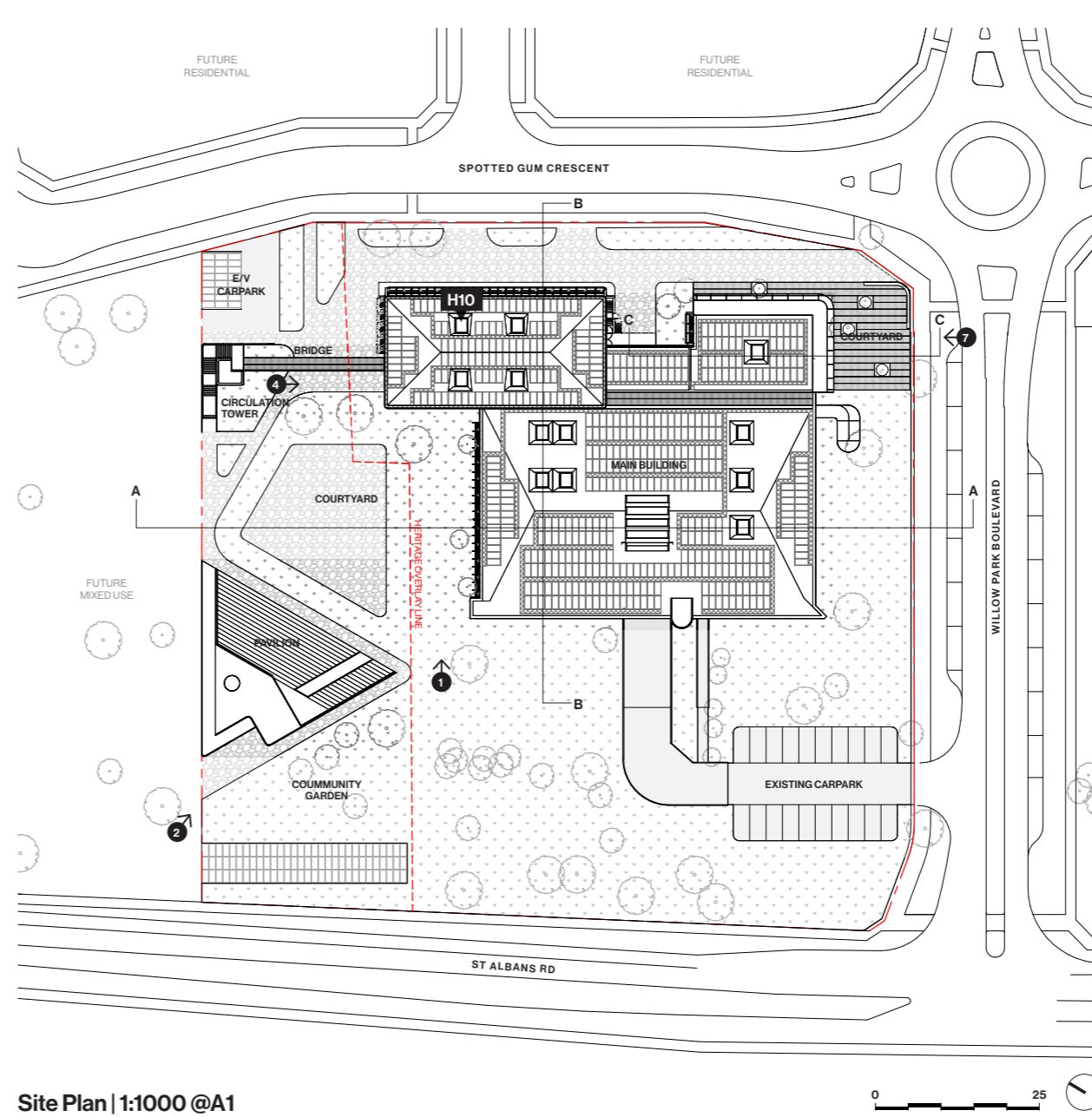
4 Framing the Outdoor Courtyard:

We chose to preserve the open outdoor space of the Supplementary Area for local residents. The expanse is delineated with subtle design gestures; light architectural elements, such as the bridge and vertical hydroponic farm, frame the main courtyard, acting to guide the intuitive flow of movement and activities. The tiered seating, emerging from the courtyard's Western edge, allows the area to host community and cultural performances. Below the seating is a modest pavilion café and space for local art displays.

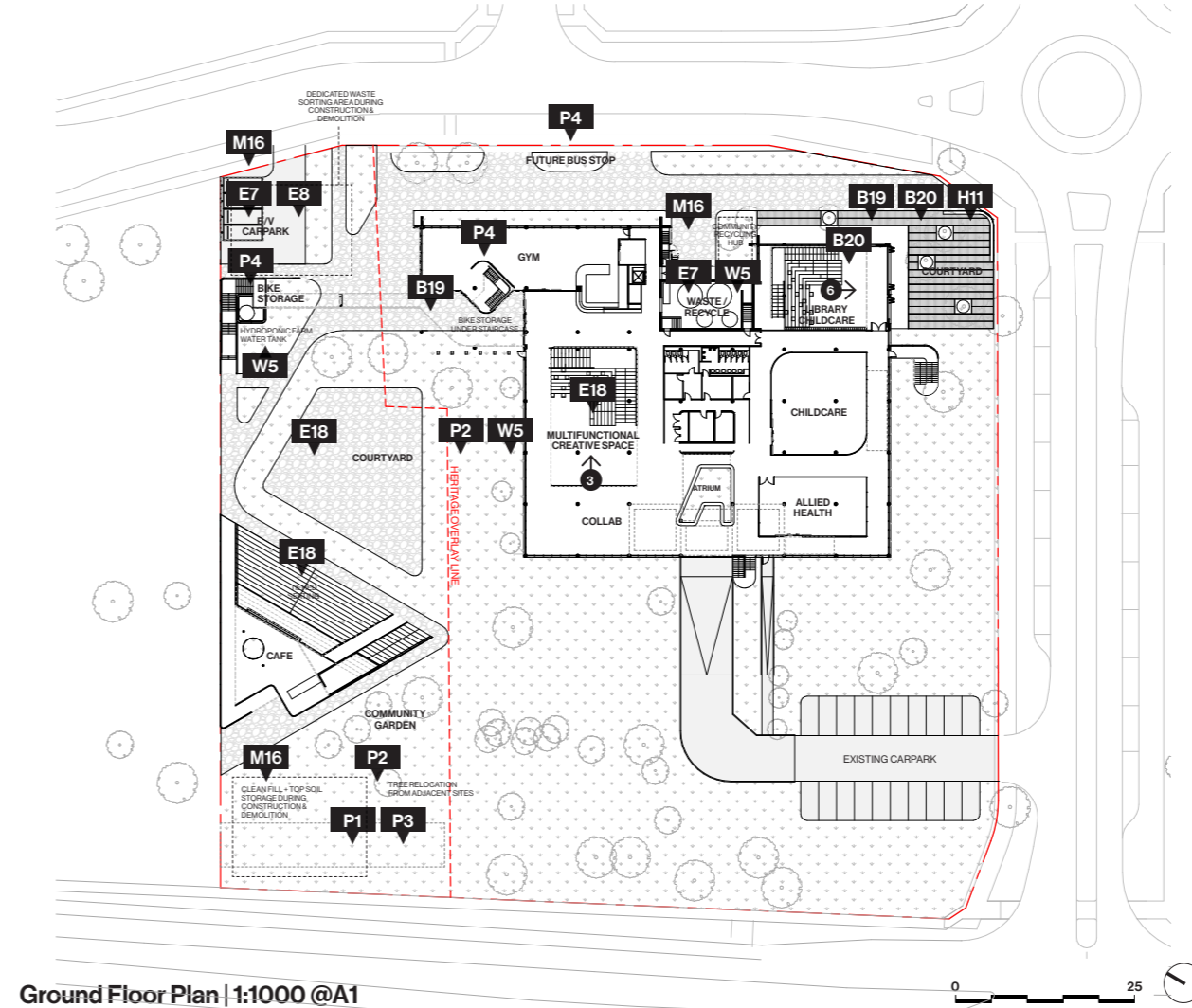
5 Brutalism and Materiality:

Honouring the "as found" brutalist approach to materiality, the raw, milled copper panel dialogues with the weathered concrete of the existing building, embodying the movement's celebration of natural textures and industrial authenticity. The copper panels also introduce warmth to the austere and dominant grey facade, adding a welcoming, contemporary aesthetic. Crafted from 100% recycled raw materials in a closed-loop production line, the chosen copper panels are fully recyclable at the end of their life cycle.

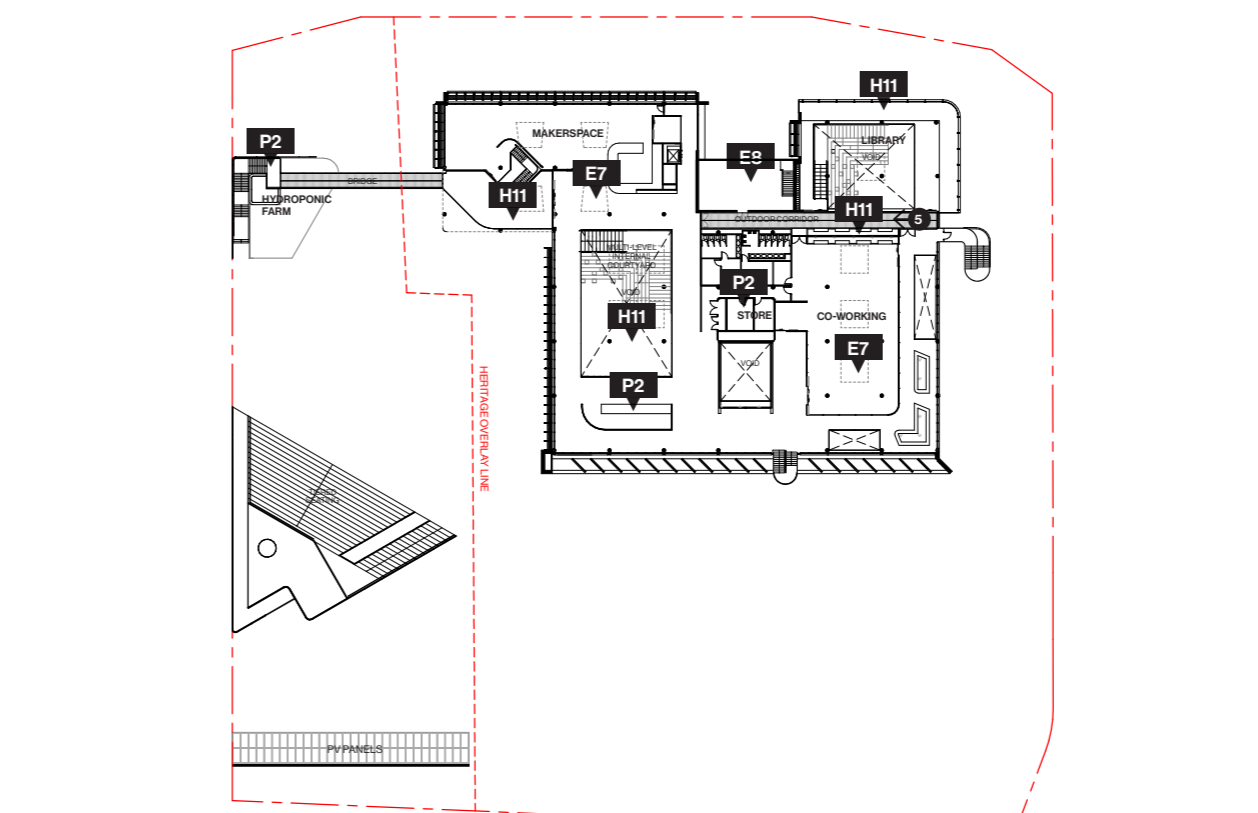
Drawings: Plans, Sections & Elevation



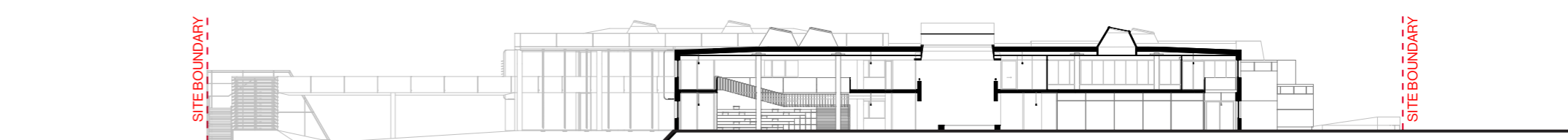
Site Plan | 1:1000 @A1



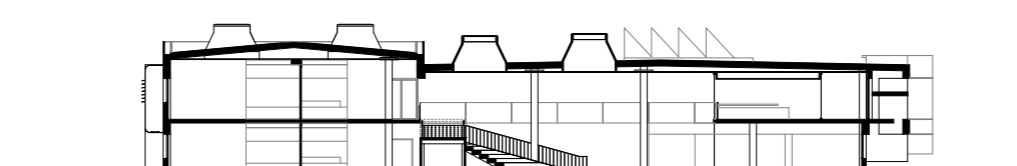
Ground Floor Plan | 1:1000 @A1



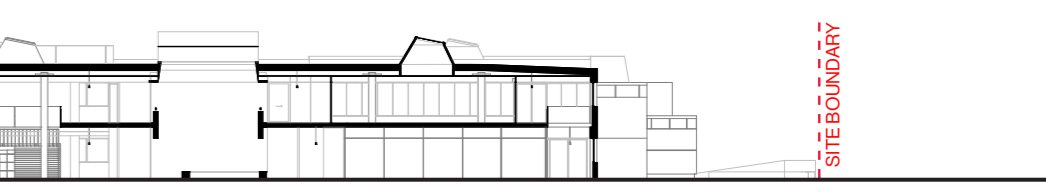
Level 1 Plan | 1:1000 @A1



Section A
Through Multifunctional Creative Space, Atrium, Allied Health, Co-working | 1:500 @A1



Section B
Through Gym, Makerspace, Multifunctional Creative Space | 1:500 @A1



Section C
Through Cultural Library (Education & Training) | 1:500 @A1

North Elevation
Circulation Tower, Staircase, Hydroponic Farm, Courtyard, Pavilion, Cafe, Community Garden | 1:500 @A1

Legend: Application of LBC 4.0 Imperatives

- P1** Place | I-1 | Ecology of Place
 - Intentional mix of edible plants commonly consumed by different cultural groups to create opportunity for conversations and a culinary approach to cultural exchange.
- P2** Place | I-2 | Urban Agriculture
 - A cumulative total of 5% of the project area (593.2m²) has been allocated for urban agricultural use.
 - On-site dry storage of emergency food supply for 45 FTE. Blankets, defibrillators, medical kits and such are also kept on hand.
 - Coffee grounds are used as fertiliser in the community garden and produce from the community garden will be used by the Pavilion and Atrium Cafés, demonstrating farm-to-table connections.
- P3** Place | I-3 | Habitat Exchange
 - Replant trees facing removal from adjacent development sites to maximally preserve local flora and fauna in the immediate vicinity. Mark with tags with information on tree species and original location.
- P4** Place | I-4 | Human Scaled Living
 - Bike storage, e-bike charging, free provision of lockers, and showers inside the building.
 - Public bus stop suggested to encourage green transport options. Charging port made available for e-buses.
- W5** Water | I-5 | Responsible Water Use
- W6** Water | I-6 | Net Positive Water
- E7** Energy | I-7 | Energy + Carbon Reduction
 - HVAC: Submetered water-cooled VRF system with heat recovery for simultaneous cooling & heating in different zones throughout building.
 - All internal lighting is LED with inbuilt reflectors (Luminous efficacy 300L/W). Lights are on timer control with continuous dimming. Variable light temperature controls available for alignment to human circadian rhythms.
- E8** Energy | I-8 | Energy + Carbon Reduction
 - Zero-ready: Sufficient wiring and connections for installation of extra EV charging units and renewable energy generation.
 - Solar battery array of minimum 8,565kWh capacity.
- H10** Health + Happiness | I-10 | Healthy Interior Performance
 - 12 south tilted skylights (2.19m x 1.83m) provide daylighting for 1,651m² of regularly occupied areas through multiple double height spaces allowing occupants to track the time of day, weather, and the changing sky at all times.
- H11** Health + Happiness | I-11 | Access to Nature
 - The library balcony allows seamless indoor-outdoor flow with perforated panels allowing glimpses into the green foliage of existing trees, giving the illusion of being up in the dappled foliage of an urban forest.
 - Green spaces are interspersed throughout the building with flexible seating and table arrangements, particularly in daylight areas to encourage occupants to reside near and around nature.
 - Lines of sight toward the greenspace of the main courtyard are extended deep into the building through the double-height atrium space.
- M16** Materials | I-16 | Net Positive Waste
 - Dedicated area for sorting of recyclables and waste during construction. Minimal distance from major demolition works and easy road access for collection.
 - Clean fill and top soil pile location to prevent contamination during demolition and construction.
 - Large community recycling station for cardboard, plastic bags, batteries, e-waste, textiles, metals etc. and any other items that are too big for residential recycling bins and/or require special collection. Made accessible 24/7.
- E18** Equity | I-18 | Inclusion
 - Flexible creative space for celebration and exchange of culture.
 - Large open-air courtyard space with tiered seating for community performances, workshops, events, farmers markets, and maker's fairs. Events celebrating Wurundjeri culture are highlighted, becoming a potential venue for Djirri Djirri Dance performances and large community dance workshops for increased awareness and appreciation of Wurundjeri culture and art.
 - Cultural Hub: Intimate gallery space and café displaying artwork and poems by local artists from diverse cultural backgrounds (Wurundjeri, Vietnamese, Maltese, Chinese, Australian) and age groups (children, adults, elderly).
- B19** Beauty | I-19 | Beauty + Biophilia
 - The architectural form of the pavilion and stairwell frames the heritage building, creating visual dialogue between the project site and adjacent future mixed use development. It also acts as a symbolic gate towards the shared courtyard inviting people to gather, participate, and observe.
- B20** Beauty | I-20 | Education + Inspiration
 - Shared community library and toy bin program.

