MECLA

COLLABORATION FOR CHANGE

Case Study:
54 Wellington Street

Embodied CO2e reduction (tCO2e)

47,400

CATEGORY

PRODUCT	SYSTEM	**PROJECT**	CONCEPT

SUPPLY CHAIN

MANUFACTURING	PROCESSING	TRANSPORTATION	**CONSTRUCTION**

REGION

WA	NT	SA	QLD
NSW	ACT	**VIC**	TAS

Profile

Organisation: Aurecon
Website:
https://www.aurecongroup.com/
About: Aurecon is an engineering, design, and advisory company, voted by AFR as Australasia's most innovative company.

aurecon

Section 1: Opportunity

This development embodies character and sustainability with recycled construction materials and timber construction. The 15 000 square-metre precinct is in the hip inner-city suburb of Collingwood and is part of a broader trend towards developing institutional-grade assets on the outer fridge of cities. Aurecon applied its structural and environmentally sustainable design skills, to reduce carbon emissions through a different approach to traditional structural engineering, designing an aggregation of buildings that celebrates the precinct's industrial past and modern future.

Section 2: Solution

Inspired by the environmental benefits and versatility of timber, the companion building de-scales the entire precinct and was constructed using glulam (glue laminated timber) beams and cross-laminated timber (CLT) flooring. The engineered timber has a lower carbon footprint than traditional building materials and is sourced from certified sustainably managed forests. It also allowed for precise offsite prefabrication and safer, cleaner and quieter onsite construction.

Section 3: Lessons

By using a fully composite approach to the timber design, Aurecon was able to design typically larger column free spaces compared to a typical engineered timber office, to create a more open and welcoming interior aesthetic with abundant natural light. Floor to ceiling timber and glass façade maximises the connection between the indoor space and the outdoor laneway that weaves around the corner of the precinct. The laneway incorporates bricks recycled from the demolition of some of the existing structures, highlighting environmental design principles.

Section 4 : Impact measurement

The impact was calculated using a lifecycle assessment (LCA) comparative study completed in line with ISO 14040:2006, ISO 14044: 2006 and EN15978:2011, for the purpose of Green Star. It is calculated that the project has saved 47,400 tonnes of embodied carbon. A lifecycle assessment study has demonstrated a 33 per cent reduction of CO2 equivalents via the decisions made as part of the design process. This is equivalent to taking approximately 10,300 cars off the road for a year, or alternatively the annual emissions of 2,800 typical Australian households.