

Midtown Centre, Brisbane QLD



A rare and visionary NABERS-rated building in Brisbane shows how adaptive reuse can save money and time, cut carbon and create a world-class workplace.



Look at Midtown Centre and marvel. It's hard to believe this modern vertical village was once a pair of identical 20-storey office towers that stood 13 metres apart.

But when Health House and Forestry House went on the market in 2017, Sydney-based financial house Ashe Morgan and DMANN Corporation saw the potential to combine two 1980s buildings to create a 21st century workplace.

In an architectural first, the façades of the two buildings were removed and the building stripped back to a raw concrete shell. Each floor slab was stitched together. Extra storeys were added, bringing the height to 26 floors and yielding an additional 70% net lettable area.

“Traditionally, we would have knocked down both buildings and started again. But by retaining over 50,000 tonnes of concrete and 3,600 tonnes of steel, we could save around 25% on construction costs, while also capturing lifecycle benefits,” Michael says.

“We saved about \$2 million in the social cost of carbon because we kept the building’s structure. The 11K tonnes of CO₂ saved is the equivalent to removing 2.5K cars from the road for a year or around 4 years of carbon neutrality.”

— Michael Bruderlin, Managing Director, InDeMa Properties

FAST FACTS

- The two buildings at 155 Charlotte Street and 150 Mary Street in Brisbane’s CBD are now one 44,000 sqm, 26-storey vertical village
- With 5 Star NABERS Energy and 4 Star NABERS Water ratings, Midtown Centre is:

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| 30% more energy efficient | 35% more water efficient | 36% reduction in carbon emissions |
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| 99.7% reduction in bacteria and air contaminants using UV filters | 50% additional fresh air supply |
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| 90% construction waste was recycled | Covid-responsive 1.5 m social distancing easily achievable with a density of one person per 12 sqm |
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| 49% savings on embodied carbon due to the innovative re-use and re-purpose strategies | 246% more eco friendly vs demolition and new builds |
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NABERS as a proof point

The Midtown Centre project was signed up for a [NABERS Commitment Agreement](#) in 2017, at the design stage, which put on paper a promise to achieve a 5 Star NABERS Energy rating. The visionary design and environmental credentials attracted widespread support from the local community and were central to Brisbane City Council's approval of the development in 2018.

Brisbane City Council is determined to create a world-class, design led city, and at the centrepiece of this vision are the [Buildings that Breathe guidelines](#) and [Brisbane Green Building Incentives Policy](#).

Midtown Centre embraces and enhances its natural environment with outdoor spaces that give back to the city and align with the planning aspirations of Brisbane City Council's Buildings that Breathe philosophy.

NABERS undoubtedly steps into the spotlight when developers are in conversation with potential tenants, Michael said.

"When I'm marketing to tenants, I always bring it back to the financial metrics by comparing a standard building that doesn't have a 5 Star NABERS Energy rating to one that does."

"The 30% energy & 35% water savings at Midtown Centre have a true, tangible benefit for tenants. With a NABERS rating it's easy to quantify these outgoings."

— Michael Bruderlin, Managing Director, InDeMa Properties

Why embodied carbon emissions loom large

NABERS Energy measures – and then helps building owners manage – operational emissions. But the sum of greenhouse gas emissions released during a building's lifecycle has been, until now, a hidden issue.

The term 'embodied carbon emissions' refers to those generated from raw materials extraction right through to demolition and disposal. Most of these emissions are locked in before a building is occupied. [The World Green Building Council](#) estimates that embodied emissions are responsible for 11% of the built environment's global carbon footprint.

As building operations become more efficient, embodied emissions loom larger. The [Green Building Council of Australia](#) has found that embodied carbon was responsible for 16% of the nation's built environment emissions in 2019. But we can expect this share to hit 85% by 2050.

NABERS is currently working in partnership with industry and governments across Australia to develop a framework for embodied carbon that will help project teams to measure, set targets, compare and verify upfront emissions of new buildings.

The next step on the road to net zero

Many tenants have publicly declared their net zero ambitions – and a natural next step is to scrutinise the footprints of their buildings.

"We are entering this new phase where net zero operational emissions can be achieved through good design, smart operations and with the purchase of offsets and green power. But a significant contributor to lifecycle emissions is the embodied carbon, which is why the adaptive re-use of Midtown Centre is such a great sustainable story," Michael says.

"The Midtown Centre project was 25% more cost effective and 30% more time efficient because we didn't have to demolish the existing building."

— Michael Bruderlin, Managing Director, InDeMa Properties

A reimagining at the scale of Midtown Centre depends on 'good bones' – something that not every building can boast. "Adaptive reuse is limited by the physical constraints," Michael says. But when the formula is right, the rewards are spectacular.

Concrete and steel – which generate around 8% of global construction emissions apiece – are carbon-intensive materials. But Midtown Centre has retained more than 50,000 tonnes of concrete and 3,600 tonnes of steel from the two old towers, which reduced its carbon footprint by 11,000 tonnes of emissions.

Not every building is ripe for reimagining and encouraging more adaptive reuse will require fresh thinking from planners, regulators and industry, Michael adds.

"Because you are retaining the structure, it should inherently be 20%-25% more cost effective to readapt an existing building. But in a 'hyper-escalated' contracting market the numbers become more challenging," he says.

Michael has an acronym for what has been achieved at the Midtown Centre – PER, or "purposeful, enriched re-creations".

"Purposeful, because we must think carefully about what we are doing. Enriched, because the process adds quality and value. And re-creation because we are re-imagining the entire proposition of what a building could be."

