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# Green design for density

For many, apartments are seen as a step in the home ownership process. But when designed appropriately, living in them can be a life choice that ticks all the boxes.

WORDS Sarah Robertson



From the street, the Victoria Street Apartments look like one large home. Designer Luke Middleton from Eme Design based the roof's form on those of other houses in the area; it is also designed to let winter sun in, protect the homes from harsh summer sun and provide residents with entry protection.

## Victoria St apartments

PHOTOGRAPHY Scott Haskins

On first seeing the Victoria Street Apartments in Melbourne's eastern suburbs, you could be mistaken for thinking you are looking at one large home. But behind the façade on the 2000 square metre block sit nine modern and sustainably designed apartments. As designer Luke Middleton of Eme Design explains, the apartments are one approach to designing more intelligently for density, providing place-specific, spacious yet smaller footprint homes for "empty nesters".

Approaching the density problem, Luke's solution was not to maximise the number of apartments on the site, but to achieve

functional, energy- and water-efficient homes that fit somewhere between a townhouse and an apartment in the property spectrum. Located on a block in Melbourne's eastern suburb of Elsternwick, Luke says the apartments, at about 220 square metres each, roughly double the area's average density.

Luke explains his influences and approach to the block's design: "If you start to try and design even a courtyard house, it's not very functional because you get these bad spaces. So I said, let's forget about boundaries, which is what nature does, and look at the bigger urban picture." As he sketches the layout of the apartment

building, he explains that the design can be duplicated across a series of large urban blocks, without compromising each apartment's visual and space amenity or access to natural light and ventilating breezes.

All nine homes are oriented towards the north to maximise passive solar design. Carefully placed full-height, clerestory and louvred glazing brings natural light into the living areas and provides cross ventilation to reduce reliance on active cooling. Each apartment also has a generously-sized and north-oriented balcony, large enough for an outdoor setting, barbecue, ample room for plants and space to →

AS OUR CITIES FILL WITH MORE PEOPLE and as our city boundaries grow, designers, planners and more and more homeowners are realising that a house on a quarter-acre block can be unsustainable financially, geographically and environmentally. Despite this, for many Australians, apartment living is still a stage on the road towards the Australian dream of home ownership, not the final destination.

Apartments and other forms of multi-residential and medium-high density homes have often received a bad rap, perceived as lacking many of the positive attributes of a house – including a mix of generously sized public and private spaces, good views and aspects, and inbuilt diverse and flexible spaces. However, while they may still be the exception rather than the norm, some new multi-residential designs are seeking to show that apartment and other medium-density homes can offer the attributes of a house, with significant benefits for the environment.

Architect Stuart Harrison believes that

architects have a responsibility to demonstrate that denser housing is "rich with design opportunities, and more sustainable than bigger housing".

"People don't tend to think of apartments as homely for the reason that they lack certain things," he explains.

Space is obviously one issue, but it's not as simple as just wanting more of it – it's about how it's designed. "Even though lots of houses are too big, lots of apartments are too small," he says. This is particularly evident in many apartments' provision of outdoor space. "There's no sense that you could live outside as you could in a courtyard or garden in a house. I think that precludes a lot of modes of living."

A sense of place and community are other factors often seen to be lacking in medium-density living but important to building a home. "Sense of place is incredibly important," says Stuart. "I think that comes through design ... about specificity, about working with a particular place, acknowledging that not

everything's the same."

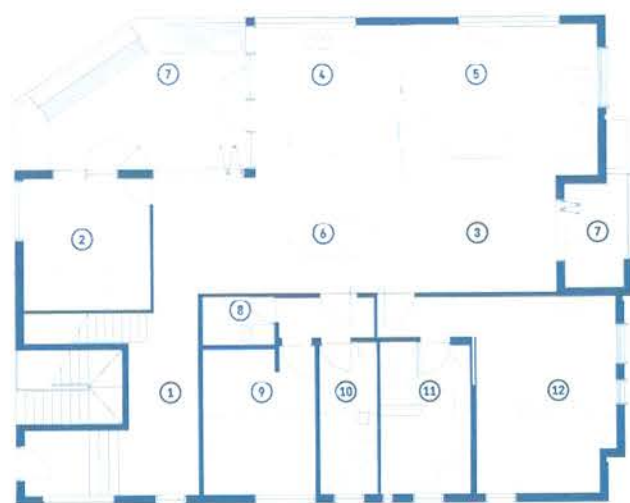
Neither are all apartment dwellers the same. Stuart notes the presumption by many developers of a mythical tenant: a certain type of person who lives in multi-residential housing. "In fact the living patterns are actually far more diverse," he says.

Despite these issues, there is great potential for apartments and other medium density living spaces to offer the flexible and diverse offerings of a house. If apartments and other forms of medium density housing are well designed, he says, they can provide spaces for neighbourly interaction as houses do; they can provide private outdoor living spaces that are a decent size; and they can provide a diversity of design types to accommodate varied lifestyles.

Projects by two of Melbourne's sustainable design firms are examples of what Stuart calls a "design-led" improvement of multi-residential housing. While only two projects among many, they illustrate the diverse ways the density question can be approached.



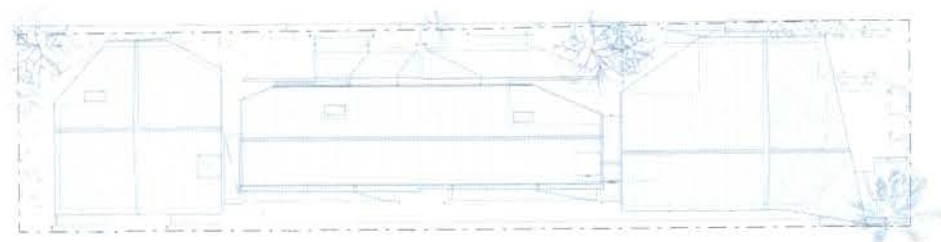
Small water-absorbing tiles line this compact yet efficient bathroom in the loft of one of the apartments.



LEGEND

- ① Entry
- ② Study/Bedroom
- ③ Gallery/Library
- ④ Kitchen
- ⑤ Living
- ⑥ Dining
- ⑦ Deck
- ⑧ Laundry
- ⑨ Bedroom
- ⑩ Bathroom
- ⑪ Ensuite
- ⑫ Master bedroom

A floor plan of one of the Victoria Street Apartments.



A plan of the Victoria Street Apartments site shows courtyards that separate each north-facing apartment.

VICTORIA STREET APARTMENTS – DEC 2010

— Kitchen — Kitchen Sill — External Balcony



Temperature monitoring graphs show one apartment's performance without air-conditioning assistance. Kitchen sill temperature shows heat transfer through aluminium window frames. Timber frames were specified in the design but aluminium were subsequently installed by the developer.



The spacious dining and living area can be zoned off from the entryway. Image courtesy dpi



Louvred windows to the east enable breezes to circulate air throughout the apartment, and are shaded by the roof overhang to prevent harsh morning summer sun. "All of the apartments are designed so that you can open them up and get ventilation without feeling exposed," says designer Luke.



A permaculture garden has been established on this north-facing balcony. All apartments in the building are oriented north, with spacious balconies to bring natural light into the home and provide a generous amount of private open space.

move around. Trees growing in courtyards between each set of balconies serve to split the block into three and act as protection against summer sun.

Inside, each apartment has been designed to marry sustainable design with functional and flexible spaces. Sleeping spaces and bathrooms can be zoned from the open plan living, dining and kitchen area. A large door acts either to link or separate the communal space from the entryway. "I think that these houses need to be built for the long-term and, considering the [carbon footprint of the] concrete that goes into building them, you want to make the design flexible," says Luke.

Reflecting his place-specific design approach, Luke says that maintaining

the character of the streetscape and neighbourhood was also an important consideration. The building itself sits fairly unobtrusively on the street, and the roof form blends with those of other houses in the area. "The roof form takes its cues from the neighbourhood's classic Edwardian homes with their gable endings," explains Luke, "but its shape, angle and projection have been derived from careful analysis of the streetscape, sightlines and seasonal sun paths." The roof is also a giant catchment area, harvesting rainwater which is transferred to a 36,000 litre water tank in the basement. Tank water supplies all garden irrigation, all toilets, and washdown space in the basement. →

New multi-residential designs are showing that apartments can offer the positive attributes of a house, with benefits for the environment.

Credits

**DESIGNER**  
Eme Design  
[www.emegroup.com.au](http://www.emegroup.com.au)

**PROJECT TYPE**  
New build

**PROJECT LOCATION**  
Elsternwick, VIC

**SIZE**  
Land 2000 sqm,  
apartments approx 220 sqm each



➤ An artist's impression of a Commons apartment kitchen and living area shows the recycled timber floors – just one of the range of recycled materials specified in the design.



➤ The Commons is a sustainable living project currently under development in an inner north suburb of Melbourne. The no-car development will include 24 apartments, artist studio spaces, a café, shared laundry facilities and a rooftop garden.

## The Commons

In Melbourne's inner northern suburb of Brunswick, The Commons is a sustainable living project currently under development. Pioneered by Jeremy McLeod of Breathe Architecture, the five-storey, car park free apartment building's design has achieved an 8 star energy rating and incorporates 24 one- and two-bedroom apartments, with artist studios on the ground floor and a café.

The design includes a raft of sustainable design features, including a 5.9 kilowatt solar photovoltaic system, solar water heating and natural ventilation. In terms of building materials, Jeremy has specified recycled timber floors; high embodied energy aluminium has been replaced with mild steel, and chrome replaced with brass and copper (the chroming process can be quite toxic).

But The Commons' approach to sustainable design is about more than materials and energy efficiency by design. It's about a sustainable and communal lifestyle, built for people who are looking for just that. "With this building we've

tried to step away from that idea that everything is privately owned," Jeremy explains. Instead of 24 private washing machines, eight are situated in a communal laundry overlooking the rooftop garden; instead of having 24 solar hot water units, one large unit services the building; and instead of having 24 heating systems, one system is shared between all the apartments.

Space was a key design element of The Commons. "We think that part of Melbourne's hesitation to enter into the apartment market is that the offerings in the medium density market are generally really small apartments. To downsize from your three-bedroom house in Coburg to a tiny 20 square metre apartment is not an option. Whereas if you can move into a 75 square metre two-bedroom apartment with two real-sized bedrooms, ample storage, a big deck and good outlook then it actually makes it worthwhile," he says. "Then you've got a big shared rooftop garden. It's more a European model of bigger apartments that are affordable and comfortable."

The design maximises the site's proximity to the city which is accessible via a nearby train station or on a bike via an established bike path that runs just outside the building. There are no car parks provided, but dwellers can access a carshare car. A yearly train ticket is also part of the package. "Instead of your body corporate fees going on gym fees and pool fees, they actually go on things that we think are important to make the building work," says Jeremy, listing the carshare membership, annual public transport ticket and payment for a gardener to ensure the rooftop garden continues to thrive.

Jeremy admits that The Commons concept is one designed specifically for the area, where a high percentage of residents have proven at the ballet box that they are committed to environmental sustainability. The building is yet to be completed, but this place-specific design is one approach to more sustainable design for denser cities. ➤



➤ The Commons rooftop garden will include a 5.9 kilowatt solar PV system and solar water heating system to service all apartments. All The Commons images courtesy Breathe Architecture