DENSITY BY DESIGN

by Josh Byrne, published in:

Drawing the Line

Deliberations on Density

URBAN DESIGN FORUM WA

The book includes some other wonderful articles and a number of thought providing discussions. The book can be bought at **Boffins Books**, 88 William Street, Perth and via **Amazon.com.au**, category Books / Urban & Land Use Planning.

Bowden 2
Image: Corey Roberts

Density by Design

Dr Josh Byrne is an environmental scientist, Research Fellow at Curtin University and the Cooperative Research Centre for Low Carbon Living, and Adjunct Associate Professor with the School of Civil and Environmental Engineering at the University of New South Wales. He is also Director of Josh Byrne & Associates – a design practice integrating landscape architecture, built environment sustainability, media and communications.

Image: Rob Firth

Our sprawling cities are reaching their limits. We find ourselves at a cultural crossroads as the 'Great Australian Dream' of owning a home adapts to a new era of a rapidly growing population. There is a movement away from big houses on big blocks, and an increased demand for multi-residential developments near our city hubs. But are we getting the outcome we want?

Density by Design seeks out the leading minds and groundbreaking ideas on sustainable higher density residential projects around Australia that are providing inspiration through demonstration. My journey as environmental scientist and Curtin University Research Fellow in this project is captured through a factual web series, as part of a broader research project on low-carbon residential precincts, undertaken by the Curtin University Sustainability Policy Institute and the Cooperative Research Centre for Low Carbon Living. This article profiles the projects documented in the series, which includes interviews with key participants and leading commentators. These pages can only provide a snapshot of the research. A wealth of information, including the documentaries and interview transcripts, is available on the ***Density by Design*** website.

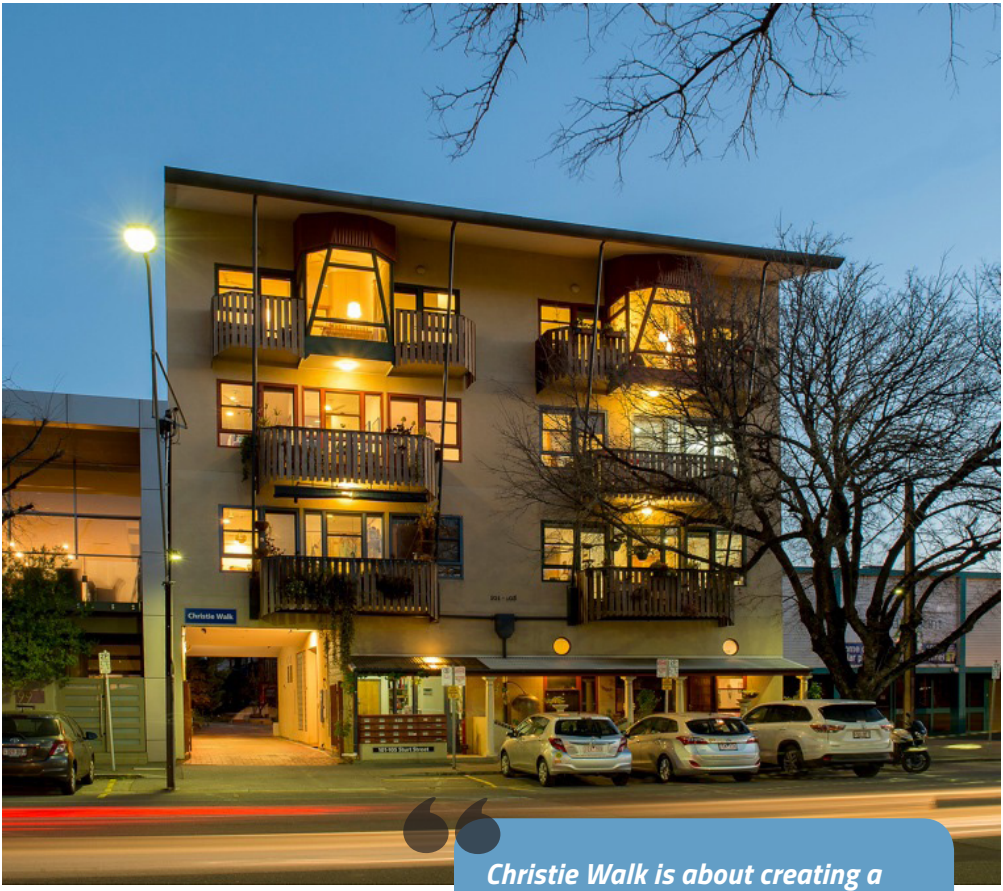
Christie Walk
Image: Iain Bond

Christie Walk

Christie Walk is a multi-residential infill development on the edge of the Adelaide CBD, accommodating 27 dwellings and approximately 40 residents on a 2,000m2 lot. Dwelling types include apartments, town house and detached cottages.

Kicking off in 1999, Christie Walk is a pioneering project that reflects the 'eco village' aspirations of the environmental movement of the day. This is expressed in the built form vernacular and community driven process underpinning the development. The project began as a development cooperative led by Urban Ecology Australia. Completed in 2006, the development is home to a mix of original and newer residents, but retains a strong focus on the importance of community.

In addition to solar passive design considerations across the project, buildings have been arranged to create green spaces for people, wildlife habitat and food growing. Car parking is located on the perimeter of the site. Shared facilities including bike storage, workshop, laundry and common room provide meeting opportunities and promote effective use of resources. Rainwater and stormwater are captured for landscape irrigation and solar energy systems contribute to power and hot water needs.



Christie Walk
Image: Iain Bond

> ***Christie Walk is about creating a community, and helping generate the culture needed in the community to drive ecological or sustainable development into the future, because it isn't going to be done by bits and pieces of technology, it's going to happen once there's a culture that says we want to do this. And I like to think that's beginning to happen now.***
>
> **Paul Downton - Christie Walk**
> **Architect, Urban Ecology Australia**

The Commons

Perched on the rail line in Brunswick, Melbourne, The Commons is a project that is sending ripples throughout the urban development industry. The five storey, 24 unit apartment building not only demonstrates design excellence and exceptional sustainability credentials, it's challenging the very core of how conventional multi-residential housing is being delivered.

The Commons' raw, stripped-back style speaks to its authenticity. The reductionist approach saves materials, maintenance and money. Absent ceilings create greater internal volume, and shared facilities mean more generous living areas. The design-led process translates to quality, simplicity and detail.

There is no car parking provided on account of the proximity to the train station, saving development costs. Space is allocated to a shared bike storage. The ground floor includes a café and a wine bar, while the roof top with stunning views is a communal area with a laundry, shaded deck and vegetable garden.

Led by Melbourne-based Breathe Architecture, and completed in 2013, The Commons is the prototype of the Nightingale model, which promotes design-led, rather than profit-led housing. The Nightingale model continues to draw attention from industry and the market, with a number of new projects in the pipeline and a growing list of future residents signing up to be part of it.

> *In the years leading up to The Commons, from 2000 through to 2007, I'd been working on a series of multi-residential projects. They were developer driven projects, designed to investor specifications, to be sold to investors and to rented back to my fellow citizens at the highest possible rent. At no point through that process did anyone care about the outcome of the people living in those apartments. So, when we started to talk to our developer clients about why aren't you delivering owner-occupier apartments, there was no appetite for them to do that. So we thought that we would build a precedent, Australia's flagship sustainable apartment building, that was simultaneously affordable, liveable, and sustainable.*
>
> *Jeremy McLeod – Director, Breathe Architecture*

The Commons
Images: Dianna Snape

Bowden

Located 2.5km from the Adelaide CBD on former industrial land, Bowden is one of the South Australian Government's development agency Renewal SA's most ambitious development projects. The 16ha mixed-use project commenced in 2008 and is forecast to be completed by 2026, targeting 2,500 residential dwellings, 10-12,000 square metres of retail space, and approximately 15-20,000 square metres of commercial office space.

Bowden demonstrates significant leadership in urban planning, with carefully considered design guidance and review processes. All buildings are required to achieve a 5 Star GBCA Green Star rating and must be assessed by an architectural review panel. The project has also been rated at a precinct level using the Green Star Communities tool.

As a project that is mid-way through development, it provides a good opportunity to see how considered planning and good design transfer into reality along a continuum spanning from planners, to developers, to architects and consultants, to builders, through to early residents.

Bowden
Image: Corey Roberts

"There are two trains of thought about how government can best provide leadership in this area (sustainability), ... one is the encouragement model... and there's the stick approach which is to legislate and to mandate. I think that Bowden is actually a really good mix of the two approaches. There are certainly incentives here, ...there's land available, government have invested public money into cleaning the site, bringing core central services like recycled water for developers to use (and public transport) so there's the incentive component. And then the legislative component which is to insist on mandated Green Star ratings, so that you know if you want to develop here, then you've got to accept the standard that we require. The two together have been a really powerful mix."

Paul Davey – GBCA Green Star Assessor and Project Consultant

Bowden 1
Image: Corey Roberts

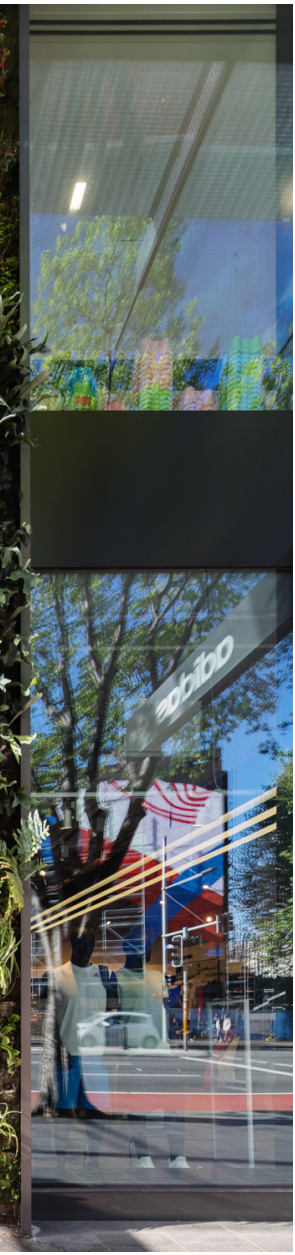
Central Park

Central Park in Sydney's CBD is a 5.8ha mixed-use precinct that gives us a glimpse of the 'city of the future'. One where exciting architecture and biophillic design justifiably earn their place in the heart of our cities. Once complete, the former industrial site will yield around 2,400 apartments, 400 hotel rooms, 1,000 student accommodation beds, 6,000 square metres of commercial space and 20,000 square metres of retail. One third of the 5.8 hectare site has been devoted to public open spaces.

The project incorporates the flagship One Central Park Tower, designed by French Architectural Firm Ateliers Jean Nouvel (with PTW Architects), featuring an iconic heliostat and extensive green walls. There is also cutting-edge precinct-scale utility infrastructure including a tri-generation plant which provides power, heating and cooling energy, and a wastewater treatment plant that processes sewerage and stormwater into high quality recycled water for local reuse.

Central Park blends modern high density development with adaptive use of historic buildings and provision of quality public amenity. It has opened an otherwise inaccessible part of the city and triggered the activation of the surrounding area.

Central Park
Images: Katherine Lu



Water and wastewater was (one of our) key initiatives here. We have established a private water utility on this site. It takes potable water from Sydney water... and collects the stormwater and sewerage that's generated on the project. The sewerage treatment plant (1,00 000 litres per day) distributes the recycled water and the potable water (separately) to all the residential and commercial tenants on this site. It's actually a private utility as a business in a major urban mixed-use environment, which is unique.

Mick Caddey - Project Director, Central Park, Frasers Property Australia

White Gum Valley

White Gum Vally (WGV) is a 2.2ha medium density, 80 dwelling residential infill development located in the City of Fremantle. Led by the Western Australian Government's land development agency LandCorp, WGV demonstrates design excellence on many levels by incorporating diverse building typologies (detached houses, town houses and apartments), climate sensitive considerations, solar energy generation and storage, innovative water management and creative urban greening strategies. The project has received international certification as a One Planet Living community.

As a LandCorp 'innovation through demonstration' project, WGV is being used as the basis for several concurrent research programs designed to explore novel approaches to urban densification, affordable housing and sustainable development in 'middle suburb' areas. These include a four year 'Living Lab' research project funded by the CRC for Low Carbon Living, an ARENA funded study into the application strata-body operated solar energy storage, and an industry-led initiative that will showcase urban water initiatives. WGV will also be home to Australia's first Baugruppen project, which itself is being run as an applied research project to test this model of affordable housing delivery under Australian conditions.

WGV is targeting ‘net zero energy’ status, meaning the precinct will generate as much energy as is used, balanced over the year. This will be achieved through a combination of energy efficient building design, coupled with rooftop solar energy generation. A number of the group housing and apartment sites are incorporating solar energy storage which will see grid energy reliance reduced by up to 80%.

Household mains water use is expected to be 70% less than the local average as the result of a suite of water efficiency and alternate water supply initiatives, including plumbed rainwater tanks and a community bore. Smart metering will capture water use data in real time to inform responsible water-use, supported by resident engagement programs.

More Information

Density by Design is produced by VAM Media in partnership with Josh Byrne & Associates, and funded by the Cooperative Research Centre for Low Carbon Living, an Australian Government Initiative. Watch the episodes and access the research materials at www.densitybydesign.com.au

WGV
Images: JBA

White Gum Valley
Image: Last Pixel

“WGV is a rare little jewel in that there's been a willingness to experiment, to innovate. To look at the road system and say, "How can we make it better? How could we retain those trees? How can we keep the wildlife in place? Let's try a few different housing types to attract a range of people... a good cross section of people from different walks of life, different age groups, kids, older people, etcetera. And White Gum Valley is offering that opportunity.”

Geoffrey London – Professor of Architecture University of Western Australia.

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