



WGV Waterwise Development Exemplar 2015/16 Partner Update





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LANDSCAPED STORMWATER
INFILTRATION BASIN
(IMAGE COURTESY JBA)



ARTIST IMPRESSION OF WGV
(IMAGE COURTESY LANDCORP)

WGV by LandCorp

A Waterwise exemplar

WGV by LandCorp is a 2.1ha infill development in the Fremantle suburb of White Gum Valley. As an 'Innovation through Demonstration' project, WGV showcases precinct-scale design excellence on a number of levels by incorporating a range of diverse building types, climate sensitive considerations, creative urban greening and leading edge water management strategies.

The innovations at WGV are being captured via series of research programs in partnership with Curtin University, the CRC for Low Carbon Living and ARENA amongst others. The WGV Waterwise Development Exemplar (WDE) is an initiative conceived by Josh Byrne & Associates for the purpose of showcasing the industry leading approach to urban water management and scheme water optimisation that has been adopted throughout the precinct.

WGV is targeting a 60% - 70% reduction in mains water consumption across the various typologies. This equates to 30kl - 40kl per person per year, in contrast to the Perth average of 106kl per person per year. Key water saving initiatives include a community bore irrigation supply for use in both public and private gardens, as well as lot-scale rainwater harvesting systems for toilets and washing machines. There will be advanced water efficiency measures in the homes and a range of water sensitive landscaping features integrated across the development site.

Over the next three years key learnings relating to the water initiatives will be communicated to industry, local government and the broader community. Performance data will be used to verify if the water use targets were achieved, and design, governance and operational experiences will be shared via case studies and events delivered in association with project partners.

WGV Vision

“To create a high quality infill development that is site responsive and is built upon the context of the locality, seeking to leverage the site’s strong attributes to enable the development to benefit future residents as well as the existing community that surrounds it.”

WGV Development Site Update

General

- Civil works and Stage 1 landscaping is now complete. Stage 2 landscaping works will be undertaken over the next two years in line with development build out.
- Construction is well advanced on LandCorp's Gen Y Demonstration Housing project. It will be the first building to be occupied at WGV, anticipated later this year.
- Work on the SHAC building (affordable housing for artists and creatives by Access Housing) is underway and construction of the two other multi-residential buildings is expected to start later this year.
- The single residential lot sales have been positive, with over half the lots sold and design approvals on many of the sites well advanced.

Water Infrastructure

- The conversion of the original stormwater sump into a revegetated basin that is accessible as urban green space is now completed.
- The community bore is currently being commissioned. The distribution pipework (the 'purple pipe'), the lot connections, the pump shed, main irrigation meters and sensors are all installed.
- The underground shared (strata owned) rainwater tank at the Gen Y Demonstration Housing Project has been installed and will eventually be used to supply non-potable water to the toilets and washing machines of the three apartments in that building.
- Discussions are continuing with one of the developers of the larger multi-residential sites regarding the incorporation of rainwater harvesting into that project as well. This will compliment the developer funded incentive scheme which is providing rainwater tanks, pumps and controls to all single residential lots.

What's ahead?

- Over the next three months JBA will continue to work with contractors and the City of Fremantle to complete the commissioning of the community bore and precinct irrigation system.
- As buildings are completed each lot will be provided with dual metering – one for mains water and one purple meter for the community bore connection. This approach will demonstrate mains water use and savings and provide prompt notification of any leaks or water supply issues.
- JBA and LandCorp are currently investigating the opportunity to use the community bore infrastructure to supply a non-potable source of water for construction purposes. This approach has the potential to displace valuable scheme water and further demonstrate industry-leading practice at WGV. The Department of Water, Water Corporation and City of Fremantle have all indicated in principle support for this initiative.

WGV PUBLIC OPEN SPACE
IMAGE COURTESY LANDCORP



Research Activities

Central to the WGV Waterwise Development Exemplar project is a three year program of research activities that will address the following aims:

- To quantify the scheme water savings across a range of residential typologies.
- To monitor the performance of the various water-based initiatives (technical, operational and behavioral) deployed at WGV.
- To critically assess the performance of the stormwater drainage design requirements for the site via real-time data capture.
- To analyse data and report on the performance findings to a broad audience that includes industry, local government and the community.

To address the above, a series of meters and sensors will be data logged with data hosted on a server with web-based interface. The information will be accessible to residents (via a real-time user feedback system) and authorised personnel for research, billing and management purposes. An important milestone recently achieved has been the placing of the order for data logging equipment supported by the Water Corporation as part of their smart meter trial program. The company Outpost Central have been engaged to provide this equipment in addition to the development of the dash boarding and data hosting platform.

Important industry capacity development opportunities that are particularly relevant to Perth have already been identified from the activities at WGV, specifically the need for support materials for local government in the implementation and on-

going successful operation and management of community bores. A project proposal to address this has been put up to the CRC for Water Sensitive Cities next round of funding (Tranche 2) for consideration.

Under the supervision of Josh Byrne and Stewart Dallas from JBA, final year Murdoch University Environmental Engineering student Ashwin Nayak recently completed his honours project titled “Outdoor water use efficiency and performance verification in sustainable landscapes” using WGV as his case study. It is envisaged that Ashwin’s work can provide the architecture for an innovative irrigation decision support tool which will have application in the broader land development industry. The tool will be used to inform irrigation scheduling at WGV as it undergoes further assessment and refinement.



LANDSCAPED STORMWATER
INFILTRATION BASIN
(IMAGE COURTESY LANDCORP)



August 2015

All Stakeholders sign the Partnership Agreement agreeing to 'establish(ing) a mutually supportive process to produce and share new information that relates to the WGV Waterwise Exemplar and (we) will work towards maximising coverage of this project and our Partners'.

Communication Activities

- **July 2015** – WGV is [officially launched](#) at the Fibonacci Centre in Fremantle and its media campaign commences
- **August 2015** – WGV WDE Stakeholder Briefing
- **September 2015** – WDE presentation to Darwin Power and Water's Living Water Smart team
- **September 2015** – [WGV Waterwise Development Exemplar Project](#) article published in Irrigation Australia's Spring edition of the Overflow (irrigation industry magazine article)
- **October 2015** – Over 70 people from partner and stakeholder organisations, developers and architectural companies, attended the WGV WDE [launch event](#) at Perth City Farm. WGV officially receives Waterwise Development accreditation from Water Corporation
- **October 2015** – WDE presentation at the New Water Ways Water Industry night
- **October 2015** – WGV focused Master Class on Sustainable Water as part of the City of Fremantle's Fest-a-con event
- **November 2015** – WGV by LandCorp announced as West Australia's first international One Planet Community, which includes recognition of WGV's water innovation initiatives.
- **December 2015** – WGV and WDE presentation to the Kalumunda Shire Council

WATERWISE
DEVELOPMENT
LAUNCH
(IMAGE COURTESY
LANDCORP)

INNOVATION
THROUGH
DEMONSTRATION



- **March 2016** - WGV Residential Lot Purchasers – Sustainability and Design Workshop
- **April 2016** - ARENA solar storage funding announced
- **April 2016** - WDE presentation to the Rainwater Harvesting Association of Australia
- **May 2016** - Integrating Water & Energy Innovations at the Precinct Scale - The WGV Story keynote presentation at OzWater 2016 and WA's Best of OzWater event
- **May 2016** - [Perth, Australia Shares Drought Lessons](#), article published in Water Deeply, American independent digital media organisation
- **June 2016** - Innovation Presentation and Community BBQ event at WGV's Sullivan Hall held by LandCorp, the City of Fremantle and JBA.

October 2015

WGV achieved Water Corporation Waterwise Development status in recognition of its water saving initiatives. WGV was the first development in the state to receive this certification under the new UDIA EnviroDevelopment water element certification process.



WGV PUBLIC OPEN SPACE
(IMAGE COURTESY JBA)