A leading edge water and energy efficient residential development
The drivers of change...

- Population Growth
- Urbanisation
- Climate Change

= demand on Melbourne’s drinking water supply

(Victoria in Future 2015 – Population and Household Projections to 2051, Department of Environment, Land, Water & Planning)
• Former Cranbourne Treatment Plant – land owned by SEW
• Villawood selected via tender to partner with South East Water
• Unique financial model, no risk to Government
• Commenced planning in 2014
• First Sales in late 2016
• Commenced construction in early 2017
• Approx. 50% of lots sold to date.
• First residents move in April 2019
A Developer With a Difference ...
The Aquarevo Difference
## Integrated water benefits at Aquarevo

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>70% reduction in potable supply</td>
<td>by use of rainwater and recycled water</td>
</tr>
<tr>
<td>75% reduction in wastewater discharged offsite</td>
<td>from estate water recycling plant</td>
</tr>
<tr>
<td>55% reduction annual stormwater discharge</td>
<td>by use of rainwater tanks</td>
</tr>
<tr>
<td>26% reduction to peak runoff events</td>
<td>from TankTalk® technology</td>
</tr>
<tr>
<td>35% reduction in stormwater nutrient loads beyond best practice</td>
<td>from rainwater harvesting</td>
</tr>
<tr>
<td>~55 ML/year of water infiltrated</td>
<td>to enhance soil moisture and support urban forest – via wetlands</td>
</tr>
</tbody>
</table>

* All figures are rounded ‘up to’.
Challenges

Validation (Microbial challenge testing, Controlled Test Rig, Live Test Houses)

Setting the Targets

Making it smart

Testing the solutions

Design/Refine the solution

Multiple-barrier (Filtration, UV, Heat Pump, Booster coils)

Remote monitoring and automated control (OneBox®+)

Fit-for-purpose rainwater hotwater supply into the home (QMRA - LRV >4, µDALY <1)
**Energy Saving Initiatives**

![Battery Image]

**Bonus 5kWh battery**

**Up to 60% Savings on Your Energy Bill**

<table>
<thead>
<tr>
<th>Panels kW Size</th>
<th>Battery kWh Size</th>
<th>Family</th>
<th>*Savings %</th>
</tr>
</thead>
<tbody>
<tr>
<td>3kW</td>
<td>5kWh</td>
<td>![Family Icon]</td>
<td>61%</td>
</tr>
<tr>
<td>5kW</td>
<td>5kWh</td>
<td>![Family Icon]</td>
<td>84%</td>
</tr>
<tr>
<td>5kW</td>
<td>7.5kWh</td>
<td>![Family Icon]</td>
<td>96%</td>
</tr>
<tr>
<td>5kW</td>
<td>7.5kWh</td>
<td>![Family Icon]</td>
<td>85%</td>
</tr>
</tbody>
</table>
Purchaser Education and the Sales Process

• Discovery Centre established to support the early sales process

• Prior to acquiring a lot purchasers received extensive briefing on all initiatives

• Unique and clever marketing and information packages created

• Due to the overwhelming demand a ballot system was adopted

• Education Events held at Builder/Purchaser Expos
Builder Education Process

• Homes built within Aquarevo are required to be Aquarevo compliant
• Builders were educated on the design changes required for a pre-approved design
• The pre-approval process was vital for the home builders to ensure ease of sales
• Regular meetings with SEW to ensure the initiatives are understood and adopted.
• Construction process meetings with SEW and builders to ensure the construction process works smoothly with the inclusion of the initiatives.
• Villawood held Builder Expos to allow builder representatives direct access to purchasers with land.
Demonstration House

• SEW, Villawood and Arden have joined together in partnership to create an eco-friendly, sustainable home – the ‘Empire 28’

• Demonstrates all the Aquarevo initiatives and a host of energy efficient solutions, enabling it to achieve an 8-star energy rating.

• The Empire 28 is ideally positioned so the living and entertaining areas are situated to the side of the home, maximising solar access, circulation and natural light.

• Landscaped to maximise cooling effect

• Important to be able to touch and feel!
Challenges

It hasn’t all been smooth sailing! It’s taken time and patience to get ensure Aquarevo initiatives meet regulatory requirements and have buy-in from key partners/suppliers.

- **Department of Health engagement** re the rain for hot water
- **EPA approvals** for the estate treatment plant
- **Builder house designs** – meeting Aquarevo specifications
- **Purchaser** education
- **Bringing Council** along for the journey

“Creating a joint venture between a Government organization (South East Water) and private enterprise - each organization has had to **adapt and be flexible** in the way we approach issues, and how planning/execution is handled.”
How it works...

At the centre of the partnership is a deep commitment to the overarching vision of Aquarevo.

Through open communication and collaboration, all parties have adapted to create an Aquarevo way of doing things, to bring the vision to life.
Thanks
Rainwater

Every home at Aquarevo will be fitted with a “Rain to Hot Water System” – including:
• Rainwater tank
• UV filtration
• High-tech hot water system

Treated rainwater will be provided to hot water taps in the shower, bath, laundry trough and washing machine.

*Potential for flood mitigation too....