Planning for the design of green and cool cities

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26 March 2019
Quick stats on the power of green + blue

- **Microclimate** – Irrigated grass can be up to 15°C cooler than unwatered grass during the day.
- **Tree health and lifespan** - Access to good soil and water can increase the life expectancy of an urban tree from 13 to 50 years.
- **Great landscapes** - Increases in property prices ranging from 1-15% have been observed in areas with tree lined streets or views of green space or water.
What’s wrong with this picture?

Conventional drainage =
missed opportunity for
passive irrigation and
stormwater treatment

Constrained tree pit
and sealed surface =
unhealthy tree and limited
canopy
Our existing urban planning and design paradigm isn’t working.

Bringing together urban forest (green) and stormwater management (blue) thinking could help to solve the problems of both.
Mind the gap......

Landscape Planning
- Open Space Strategy
- Urban Forest Strategy
- Biodiversity Strategy
- Environmental Strategy

Water Planning
- Sustainable Water Use Plan
- Integrated Water Management Strategy
- Flood Studies
- Stormwater Management Plan

Green-Blue Infrastructure Planning
The journey so far

2012 – 2015 – Urban Forests

2015 – Green Infrastructure

2016-2017 – Blue-Green Cities
City of Ballarat was the first council to explicitly develop a strategy to implement green-blue solutions:

- A plan to reduce, slow down and treat stormwater runoff as part of an urban water catchment approach

and

- support the implementation of an urban forestry and living corridors approach in Ballarat.

Our Vision

A green-blue city of Ballarat has healthy trees, parks and gardens supported by sustainable water supplies and the city utilises natural assets to slow, treat and store stormwater runoff.
### 3.3.2 Streets, Squares and Carparks

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<tr>
<th>Streets, squares and carparks</th>
<th>Passive irrigation of trees and gardens</th>
<th>Rain gardens</th>
<th>Rain garden tree pits</th>
<th>Tree-lined roadside swales</th>
<th>Permeable paving supporting trees</th>
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<td>Stormwater treatment</td>
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<td>Alternative water supply</td>
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Case study – urban streets

Limited soil volume restricting tree growth

‘Island’ around tree prevents entry of water from the adjoining road, restricting passive irrigation and limiting soil moisture

Clash of tree canopy with powerlines resulting in substantial cut back of canopy and an unbalanced tree

Difficulties in managing leaf litter as street sweepers cannot access gap between tree ‘island’ and kerb
Blue-green proposal

Stormwater channelled from kerb into infiltration well within expanded soil area

✓ Creates a larger soil area for the tree, preventing pavement uplift
✓ Could create additional parking
✓ Provides irrigation water to support the new tree
✓ Intercepts stormwater runoff and meets best practice stormwater treatment standards
✓ Moves tree away from kerb to aid street sweeping
✓ Reduces clash of tree canopy with power lines
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Top 5 Actions

**Commit**
- 5-year capital investment plan ($1 million+) in key public areas, including roads, open space and carparks
- Commitment to 50% of new trees provided with passive irrigation
- Amendment of planning scheme to broaden water management requirements for new development

**Connect**
- Instalment of a new council staff member to drive new approach

**Create**
- Develop practice notes for new standard designs for public and approved works.
Planning Blue Green Infrastructure

Planning a Green-Blue City
Department of Environment, Land, Water and Planning

- How-to guide to planning green-blue cities for regional cities in Victoria
- Equally applicable to metro areas
- Includes case studies from Ballarat and elsewhere

1. Set the scene
   - Context review
   - Identify your local drivers
   - Set a vision

2. Scope the possibilities
   - Map the data
   - Explore the options
   - Identify a selection of typologies
   - Test the selected typologies

3. Plan delivery
   - Prioritise green-blue infrastructure projects
   - Review delivery factors
   - Set actions
   - Monitor success
Embedding Blue-Green Infrastructure

Embedding Green Infrastructure Toolkit for Local Government

City of Yarra

- Guidance for Councils to integrate blue-green infrastructure into day to day practices
- Self assessment tool – is council well placed to deliver blue-green infrastructure?
- Economic framework – can we justify the project?
- Design guidelines – planning, design and construction advice including worked examples and technical drawings
The key to ‘selling’ water management may be greening: Greening and urban canopy targets provides clear and tangible outcomes that communities respond to.

Integration pays: Often green-blue solutions can not only unlock enhanced benefits but make a lot of economic sense too.

Council leadership: The key champions for green-blue thinking are within and between local government.
Thanks for listening

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