

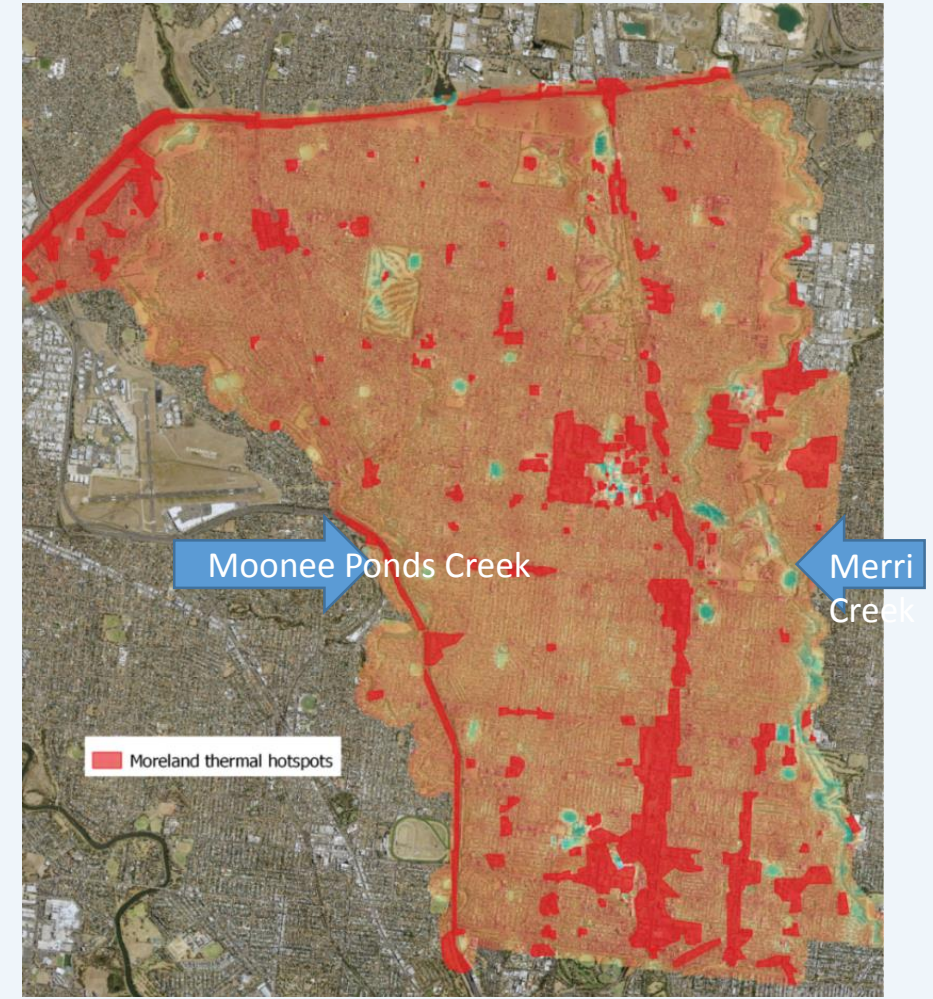
Leading by example on WSUD policy implementation

Vaughn Grey and Kathryn Skidmore



Who is Moreland City Council?

- Covers an area of 51 sqm kilometres
- Bordered by Merri Creek and Moonee Ponds Creek
- Population of 160,000 and growing
- Undergoing a 'development boom' - higher density apartments being built in Brunswick and Coburg, whilst townhouses/additional dwellings being built in the northern suburbs.



What are we doing WSUD wise on Council land?

- Stormwater harvesting + irrigation
- Raingardens
- Tree pits
- Public realm improvements
- Wetlands
- Revegetation works
- WSUD in road reconstructions



Stormwater harvesting – Mutton Reserve, Fawkner





Dunnes Lane, Coburg



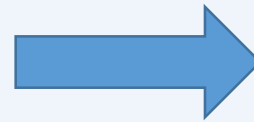
Wilson Avenue, Brunswick



Raingardens

So what about the private realm?

- Private land accounts for 60% of Moreland's municipal area (20% Council open space/assets and 20% roads)
- 1,784 new dwellings approved from July 2016 – March 2017
- 3,605 dwellings approved in 2015 - 2016 financial year



Environmentally Sustainable Design policy and WSUD

- Moreland planning policy as of November 2015
- Requires minimum ESD response, ranging from energy efficiency, waste management to stormwater
- Applies to 2+ dwellings and commercial 100sqm+
- Refers to the Melbourne Water *STORM* tool, the eWater *MUSIC* tool and the *2006 CSIRO Urban Stormwater Best Practice Guidelines*
- Advocacy at state level for greater WSUD policy (i.e. Water for Victoria actions, revised SEPP targets, state-wide ESD policy)

Water resources:

- *To improve water efficiency*
- *To reduce total operating potable water use*
- *To encourage the collection and reuse of stormwater*
- *To encourage the appropriate use of alternative water sources (e.g. greywater).*

Stormwater management:

- *To reduce the impact of stormwater run-off.*
- *To improve the water quality of stormwater run-off.*
- *To achieve best practice stormwater quality outcomes.*
- *To incorporate the use of water sensitive urban design, including stormwater re-use.*

Info for developers - what was the issue?

- Planning permit applicants often lack knowledge of what is best practice *water resources* and *stormwater management* objectives and how to demonstrate this + no single source of specific information for Moreland applicants
- Moreland therefore wanted to address this via compiling a set of guidelines for our development community to streamline the assessment of WSUD assessments, have greater assistance and guidance for our Urban Planners, provide clarity for all and ultimately achieve improved outcomes
- We specifically wanted to:
 - Define WSUD in a non-technical way for developers
 - Describe various WSUD treatments, their benefits and maintenance considerations
 - Create a hierarchy of preferred WSUD treatments
 - Provide practical examples for Moreland-type developments
 - Make this info publicly available online
 - Use this to educate our internal colleagues, external development community and Moreland residents



What have we done?

- We engaged the consultancy, *DesignFlow*, to help us do this
- Held a workshop with the Melbourne University *Waterway Ecosystem Research Group* (WERG), representatives from Melbourne Water's Living Rivers team and the Clearwater team and consultants
- Updated Moreland website
- Provided practical examples relevant to Moreland's development typologies
- Established a WSUD hierarchy
- Provided info about different WSUD treatments
- Provided improved training and education for our Urban Planners



Updated Moreland website



The screenshot displays the Moreland City Council website. At the top, there is a navigation bar with the council's logo and name, a search bar, and social media links. Below this is a main menu with categories like Home, About us, Events & recreation, Community & care, Parking & roads, Libraries, Planning & building (highlighted), Environment, trees & bins, and Business. A breadcrumb trail indicates the current location: Home > Planning & building > Environmentally sustainable design > Water sensitive urban design.

The 'Water sensitive urban design' page features a sidebar on the left with links to various planning documents and a main content area. The main content area includes a title, a brief definition of water sensitive urban design, a paragraph explaining its importance in Moreland, and a list of benefits. A 'I want to' section on the right provides quick links to various services like applying for permits and checking application status.

Planning & building

- Difference between planning and building >
- Planning permits >
- Moreland Development Contributions Plan (DCP) >
- Building renovations and extensions >
- Property information >
- Planning policy, projects and structure plans >
- Planning scheme amendments >
- Environmentally sustainable design ▾
- Sustainable design assessment in the planning process
- Moreland's Sustainable Design standards

Water sensitive urban design

What is water sensitive urban design?

Urban development impacts the natural water cycle by creating impervious surfaces that affect the quantity and quality of stormwater. This places a greater demand on potable water resources and creates artificial stormwater drains and by discharging wastewater.

In Moreland, stormwater runoff is discharged to the Port Phillip Bay via Merri Creek, Edgars Creek and Moonee Ponds Creek. Stormwater runoff and pollutants are detrimental to these waterways.

Water sensitive urban design mitigates these impacts while reducing water bills and creating greener urban areas.

[Clause 22.08 Environmentally Sustainable Development](#) of the Moreland Planning Scheme requires new development to satisfy best practice stormwater management objectives. This is done via adopting water sensitive urban design principles.

Benefits of water sensitive urban design

Water sensitive urban design also provides many social, economic and environmental benefits including:

- Minimising impact on receiving waters
- Reducing potable water use
- Recharging local groundwater through the infiltration of stormwater
- Creating greener urban environments with high visual amenity, and
- Passive cooling through increased vegetation cover.

I want to

- Apply for a building permit >
- Apply for a planning permit >
- Apply for property information >
- Apply for a road closure permit >
- Find the status of my planning application >
- Request a pre-application planning meeting >
- View current planning scheme amendments >
- Search advertised planning applications >

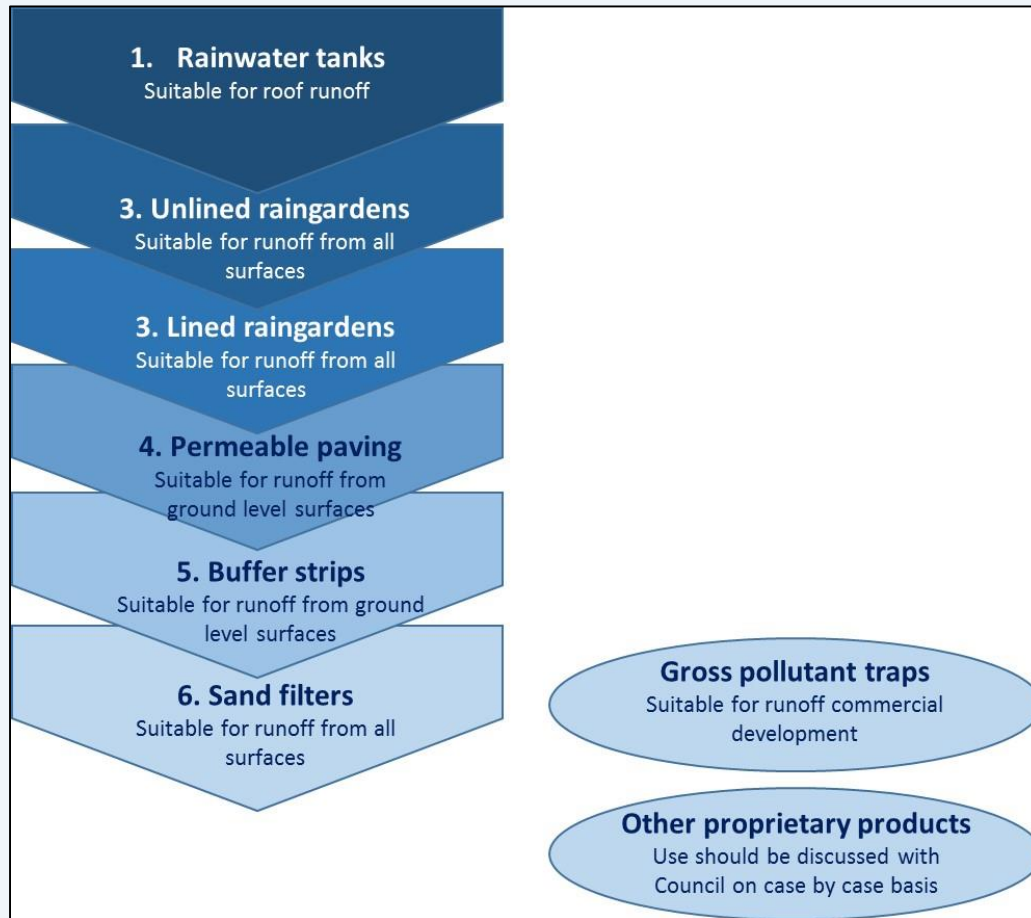
My Moreland

Tell us where you live so we can show you information on your local

- Defines WSUD in a non-tech way
- Explain why we do it
- Co-benefits of WSUD
- How to response to the planning requirements
- A checklist of info required for lodgement
- Examples of applications



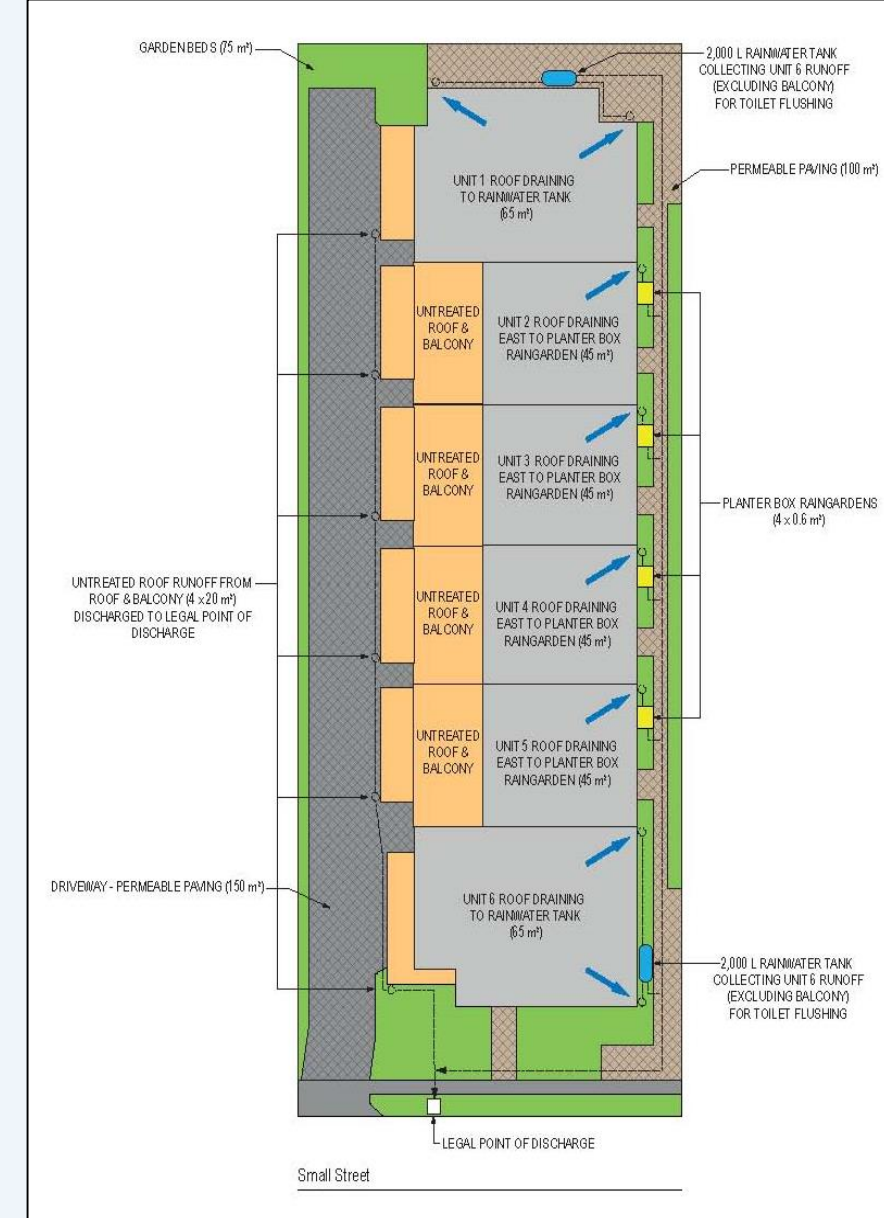
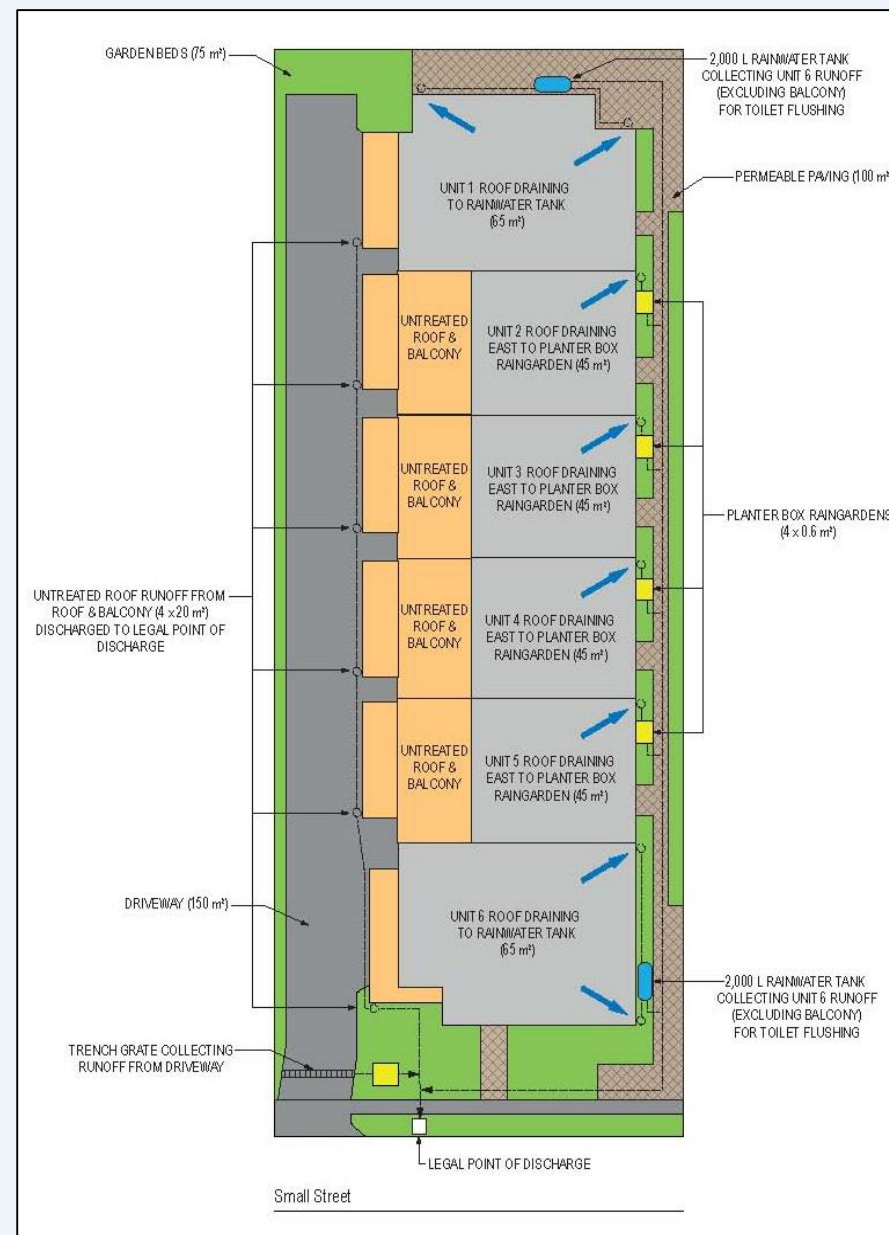
Creation of a WSUD intervention hierarchy for Moreland



Infrastructure type	Stormwater quality	Stormwater flow regime	Reduction in mains water use	Increased evapotranspiration
Rainwater tanks	√√	√√	√√	
Unlined raingardens	√√	√√		√√
Lined raingardens	√√	√		√
Permeable paving	√	√√		√√
Buffer strips	√	√		√
Sand filters	√			
Gross pollutant traps	√			
Other proprietary products	Depends on product			

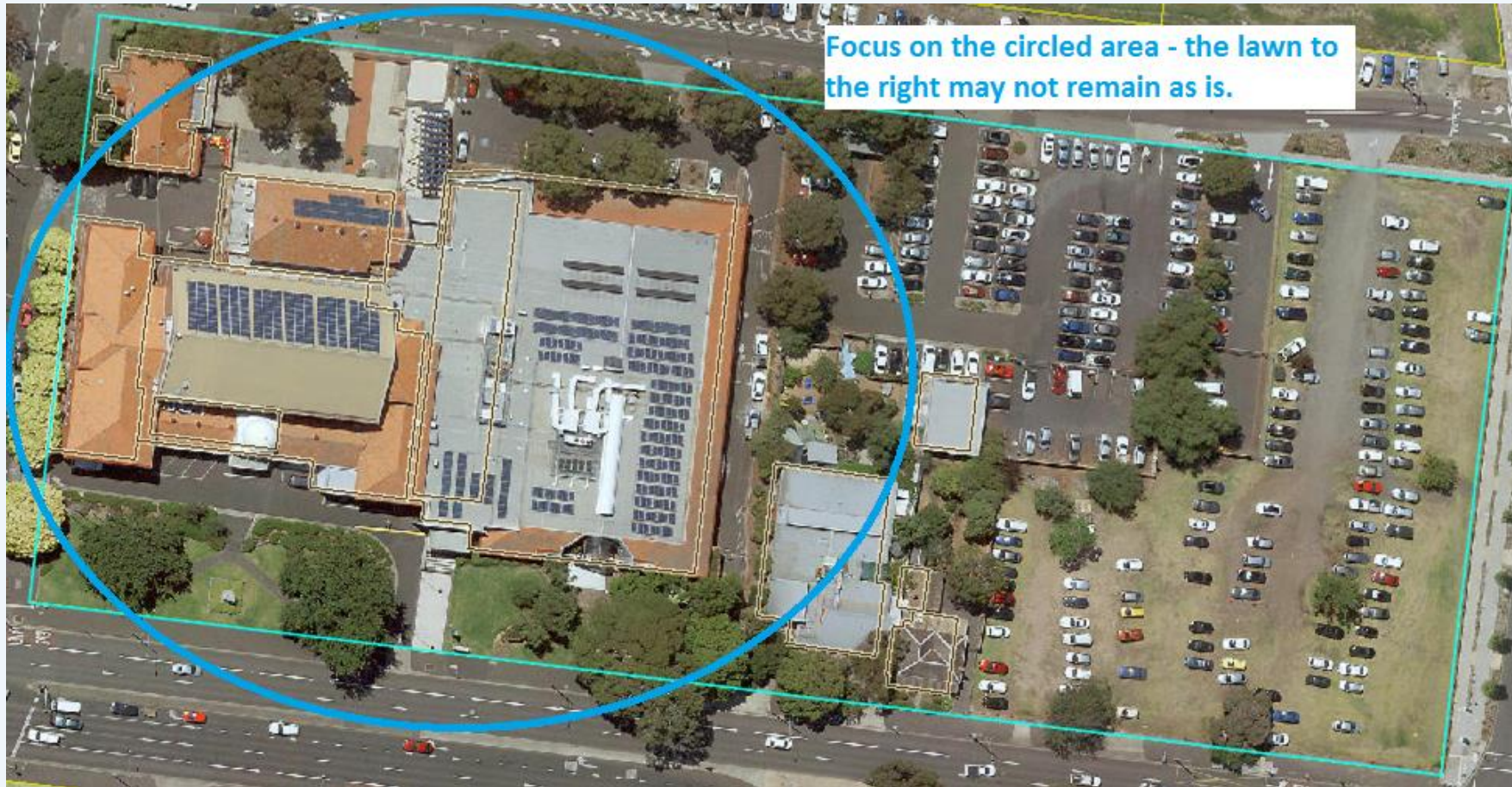
Examples

- Prioritise the WSUD treatments as per the hierarchy, so:
 - Rainwater tanks
 - Raingardens
 - Permeable paving
- Take into account the maintenance implications



Upgrades to our Coburg Civic Centre

- We wanted to *lead by example* and *preach what we practice*
- Facilitated via Melbourne Water's Living Rivers funding stream, we have started upgrading our civic centre



Our WSUD wish list was to achieve a STORM 100% score utilising a range of different WSUD interventions to show developers how raingardens work; benefits of rooftop gardens; how rainwater tanks can be designed to blend into landscapes, etc.

How we did this

Explored WSUD options including a demonstration green roof. ESD and Urban Design staff visited rooftop gardens around Melbourne. Unfortunately unfeasible due to the building not able to support the weight of the garden without significant structural works.



Moreland staff at the Westbury Street (St Kilda) rooftop garden



Moreland staff at the Melbourne Uni Burnley roof top garden

Demonstration raingardens



- To show our developers when we meet at Council
- To show our Urban Planners, Capital Works Team, drainage team, etc.
- Shows how to locate a raingarden with existing levels, different planting options, overflow mechanisms, etc.

Rainwater tanks

- 35,000L total tank capacity connected to staff toilets



Educating internal staff

- Educating our Urban Planners about WSUD (what is it; why do it; co-benefits; real-life examples)
- Different WSUD options and benefits of each
- Ultimately having better response to planning permit applications



Thank you...and questions?

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