Getting on the Green

Elegant Drainage Design Meets Eco-Friendly Technology

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Why Eco Design Matters – A Quick Guide for Architects, Specifiers & Builders

Today's customers are increasingly conscious of their eco footprint. Indeed, your clients appreciate that sustainable buildings have lower operating, maintenance and environmental costs, generate better long-term economic value, and offer superior levels of human satisfaction and productivity (Kibert 2012, p. ii).

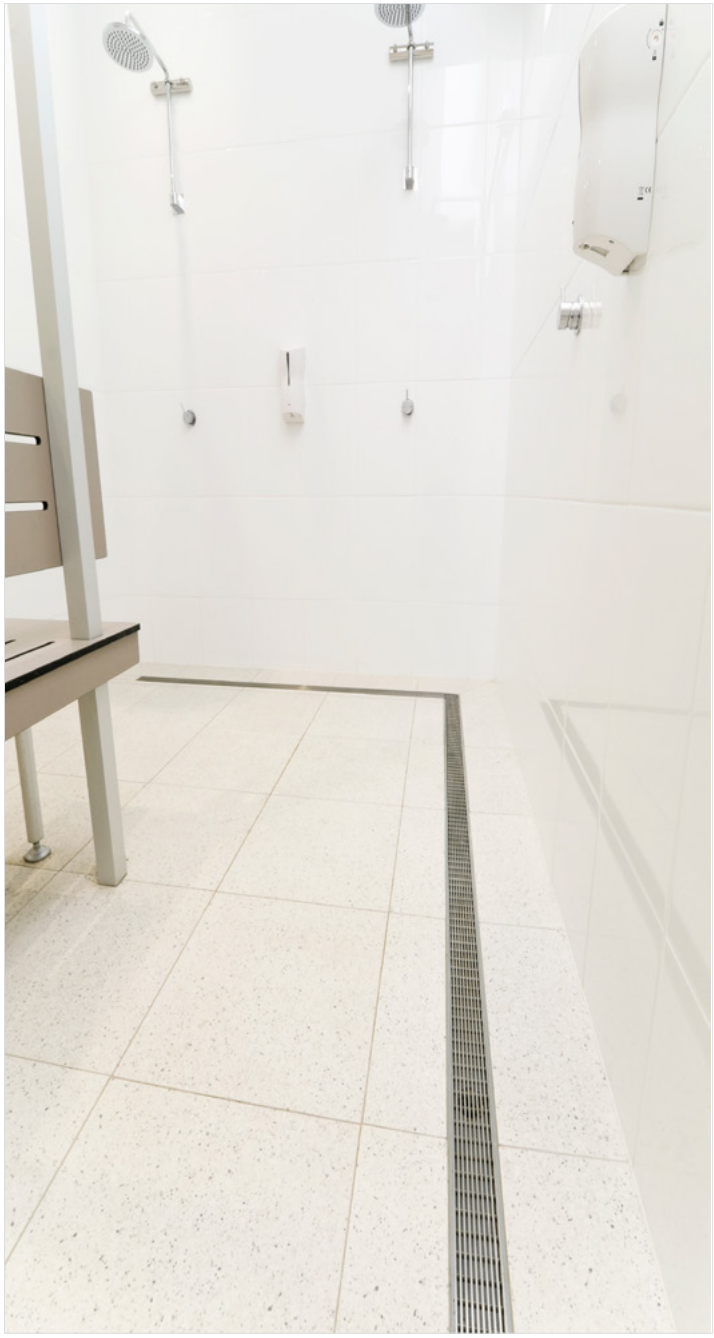
Australia's building industry has adapted rapidly to consumer demand, adopting rigorous standards set by the country's peak eco-building bodies.

As the foremost consultation and certification body for sustainable construction, The Green Building Council of Australia (GBCA) provides critical benchmarks for ecologically responsible building in Australia. The GBCA's renowned Green Star rating system offers the most reliable measure of operational performance for Australian buildings.

Compared to the average Australian construction, Green Star certified buildings consume (GBCA 2013, p.3):

- 66% less electricity
- 52% less potable water (the equivalent of 1,320 Olympic swimming pools)
- 45% fewer greenhouse gas emissions

"A high-quality drainage solution can greatly reduce one's negative impact on our waterways"



A Precious Resource Down the Drain

Australia's weather is extreme and unpredictable: plagued not only by crippling droughts, but periodic flash flooding. The capricious effects of climate change have thrust issues of water sustainability to a fore; as such, clean water remains a precious and progressively threatened commodity.

Sensitive to these threats, state governments around Australia have adopted measures to manage and protect local water resources, in accordance with the principles outlined in water-sensitive urban design (WSUD)[i].

WSUD aims to '[work] with communities to ensure planning, design, construction and retrofitting of urbanised landscapes are more sensitive to the natural water cycle' (WSUD 2014). Practically speaking, WSUD works to slow the discharge of stormwater runoff and enhance natural water infiltration; this allows water from urban environs to be filtered and cleaned naturally before reaching catchment areas (YourHome 2013, p. 426).

The Impact of Urban Runoff on Our Natural Waterways

Stormwater runoff is a major contributor to the degradation of Australia's catchments. The impact of unchecked urban sprawl has raised the stakes for architects, specifiers, builders and legislators to collectively improve the quality of urban drainage.

Urban runoff significantly alters the nutrient balance and the presence of pollutants in the natural water table (Erickson et al. 2013, p. 11). The inefficient carriage of water – transmitted via nutrient-rich or pollutant materials like soil, bitumen, oxidising metals and chemical waste – has severe consequences for waterways that sustain crucial natural ecosystems (including our own urban drinking supply) (Roy et al. 2008, p. 344; NSW Government, 2011).

"Water, Water Everywhere" – The Importance of Quality Drainage on Your Property

Quality drainage systems are key to ensuring water, once used, is conveyed efficiently, effectively and cleanly from the property.

Property owners will no doubt face a love-hate relationship with water; after all, there are a myriad of ways water can ruin or destroy property. Even small leaks can cause ceilings to chip away and pools of water to collect under floorboards and carpeting, causing severe outbreaks of mould.

Poor drainage can also have serious consequences outside the home. Excess water can saturate soil (resulting in plant death and disease), degrade landscaped areas and attract insects or rodents. Prolonged water exposure can even erode concrete and building foundations.

An effective WSUD solution, incorporating high-quality drainage, can greatly minimise the erosive effect of water flows around the property, mitigating common issues associated with excessive rainfall, soil erosion and flooding.

Australia's Polluted Waterways – Is Your Drain to Blame?

While blame often sits on the heads of industry, urban residences contribute significantly to the parlous condition of many Australian waterways. Over 70% of catchment areas run through impervious urban surface areas (such as roads, driveways, car parks and residential greenspaces); urban runoff carries with it polluting trace metals, PAHs[ii] and nutrients that upset the delicate balance of catchment ecosystems (Wong et al. 2000, p. 38).

Because stormwater in Australia generally goes untreated, poor local drainage will greatly affect the quality and consistency of outflowing water (EPA 2003, p.1).

A high-quality drainage solution can greatly reduce one's negative impact on our waterways. Consistent drain flow will ensure material debris and pollutants are not collected, absorbed and conveyed during heavy downpours. Nevertheless, drainage positioning, installation and build quality all significantly impact on the quality of outflows.

Best Practices for Environmentally Sustainable Drainage (Inspired by WSUD)[iii]

- Ensure impervious surfaces (e.g. paved areas) are graded during construction to drain to vegetated areas.
- Detain stormwater on your block where practicable; use permeable paving, pebble paths, infiltration trenches, soakwells, lawns and garden areas to soak up excess water flows.
- Be extremely judicious in your use of fertilisers, pesticides, herbicides.
- To prevent land erosion and dispersal of soils, position drains on slight gradients.
- Look for quality drainage products; ensure non-toxic, non-oxidising and durable constructions (preferably stainless steel) that won't leach harmful chemicals into the environment.

The Stormtech Solution – Eco-Friendly Elegance for Your Drainage Needs

Since 1989, Stormtech has delivered the highest quality eco-friendly solutions for residential and commercial drainage systems.

Stormtech boasts a proud reputation as the **only** drainage manufacturer with **Level A GreenTag™** certification – the most respected third-party certification body in Australia for eco-friendly products. The **GreenTag™** is recognised as the foremost rating system for top quality green-certified building products, and is the **only** product rating certification approved by the **Green Building Council of Australia**.

GreenTag™ certification positions a building product at the top end of the green market, ensuring consistent and high-quality design and manufacturing standards combined with sound ecological credentials.

Stormtech takes a boldly holistic approach to their designs; the WSUD standard is a guiding philosophy in the design, manufacture and installation of all Stormtech products. This ensures not only the highest standards in workmanship, but a commitment to maximising the quality of water discharged via their drainage systems.

For site-specific needs, Stormtech can deliver made-to-measure drainage solutions for any home or any commercial space.

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[i]N.B: The Federal, State and Territory Governments have established an intergovernmental agreement – the National Water Initiative (NWI) – which provides a comprehensive policy to improve water management across the country and recognise the integrated design of WSUD in the urban water cycle.
[ii]Polycyclic aromatic hydrocarbons (PAHs); PAHs occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning (whether fossil fuel or biomass).
[iii]Refer to: Australian Government (YourHome) 2013, 'Stormwater', http://yourhome.gov.au/water/stormwater