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Platinum plating our stormwater industry - the unpaved road to adoption

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Abstract

It can be argued that parts of the NSW Stormwater Industry are guilty of platinum plating - this is worse than gold plating and it describes a situation where an asset is decommissioned not long after construction because it can't be maintained. We look for evidence to see how widespread this practice is. We look at practices overseas particularly to the UK where adoption guidelines and standards are key components of the stormwater asset creation pathways. We explore what it would take to develop a Statewide unified adoption guideline and what the benefits to our industry could be. We also look at what it could mean in terms of outsourcing/privatising maintenance and how this might affect aspects of Council operations.

Introduction

It has been nearly thirty years since the first trash racks were installed on new concrete lined channels and twenty since the first proprietary Gross Pollutant Traps (GPTs) were installed in the early 1990s. There was a Stormwater Forum in 1993 chaired by Sir Lawrence Street, the formation of the Blue Mountains Urban Runoff Control Programme occurred in 1996, and both Stormwater Treatment Techniques (EPA, 1997) and the Constructed Wetlands Manual (DLWC, 1997) were published in 1997. The NSW Environmental Protection Authority (EPA) issued its directive to all NSW Council's to produce a stormwater management plan in 1998 and the Stormwater Trust began administering the first of five stages of stormwater grants. The Stormwater Trust grants accelerated the evolution of the stormwater industry and a new term, Water Sensitive urban Design was coined in the early 1990s by a group of designers based in WA (Argue, 2004).

Since the 1990s the stormwater industry has evolved rapidly to manage stormwater and water quality in NSW and across Australia. Underpinned by excellence in research and science, Australia has emerged as a world leader in terms of water sensitive urban design. Despite our excellence in water sensitive urban design it is suggested that the creation, adoption and operation of successful stormwater assets or stormwater quality improvement devices (SQIDs) remains somewhat esoteric.

There is evidence that some SQIDs are commissioned and then decommissioned shortly thereafter for a variety of reasons but mainly due to either an inability (capacity or financial) or a lack of willingness to maintain the devices.

We term the process of creating and then decommissioning a stormwater asset as "platinum plating" because it describes a waste of scarce public or private funding. While there is no evidence to suggest this practice is widespread, it describes a gap that exists between designers and planners on one hand and those that are responsible for adoption and maintenance of assets on the other. There is also a gap between design and construction that equally does not appear to be narrowing. Here

we refer to the fact that designers are still not intimately involved during the construction process (to keep costs to a minimum) but this frequently has the effect that the devices fail or their performance is retarded. A prime example is the raingarden which goes into premature bypass because the builder never got the chance to speak to the designer.

Knowledge of this gap is not new however twenty years after the first round of Stormwater Trust Funding it is argued that in NSW the gap between design/planning and construction, adoption and operating is not closing. That designers and planners are often still not working cohesively with asset managers.

In this paper we look for examples of how adoption and asset management might occur and describe some of the benefits and potential costs of such an approach.

SUDS – National Standards and Adoption in the UK

In the UK the Flood Water and Management Act (2010) has created a single national Sustainable Urban Drainage systems (SUDS) performance standard. The Act sets out who will have responsibility for maintenance of SUDs and how they are to be adopted (Susdrain, 2013). Adoption in this context is the process of creating a stormwater asset with a view to the successful long term maintenance of that asset. Some features of the UK system are:

- All new developments must comply with the national standards if they have a drainage implication.
- Drainage plans must be prepared which comply with the National standard and local planning regulations.
- Designers must be involved during construction to ensure design outcomes are translated into built outcomes.
- The adoption authority is the approval authority.
- Construction must not commence until the adoption/approval authority is satisfied the drainage plan complies with the standard.
- A bond is taken to guarantee compliance.
- The approval authority must adopt the asset as long as it complies with the standard.
- The government has committed to provide funding to help with maintenance.

There is uncertainty with the current Tory government which so far has not brought the Act into force despite the fact it was approved in 2010.

The primary driver in the UK is flood prevention and water pollution. In the Standards, source controls are heavily relied upon as the first option and this allows for a sharing of public and private responsibility. Failing source controls, surface discharge options must be explored in a hierarchical approach. As a last resort, discharge to a piped drain and then a combined sewer is permitted. Adoption authorities maintain all SUDs which serve more than one property and include larger end of line and “regional” SUDs.

Examples of Good Practice Asset Management in Australia

Water by Design in Queensland (WBD, 2013) provides a number of guidelines and support documents for implementation of WSUD to aid in successful asset creation, adoption and management. These include, among others;

- Guidelines on preparing a **Business case** to determine costs and benefits,

- **Concept design guidelines** to aid early planning considerations and processes and to provide inspiration,
- **Construction and establishment guidelines** including sign-off forms and certification,
- **Asset transfer guidelines** for compliance and verification of constructed systems, and
- **Maintenance Guidelines** including checklists

These documents provide certainty and defined approach to asset creation and adoption.

Moonee Valley Council, the 2011 winner of SIA Victoria's Excellence in Asset Management Award, is one example where an asset owner (Council) have successfully integrated management of water assets throughout the organisation. That was done by adopting a strategic approach to asset management, including development of a Water Strategy and WSUD Guidelines. Keeping records of all WSUD assets is an important part of their work, including having access to good IT systems. Clear workflows for adopting WSUD projects were developed, specifying what part each Department within Council plays in the management of water assets. Staff engagement, through training and the development of a WSUD working group has played an important part, as well as community engagement (Slideshare.net, 2013).

Blacktown City Council (BCC) is a leading example from NSW where a Council has embarked on an ambitious path of improving the organisation's capacity in delivering and managing SQUIDs through the development of the BCC WSUD Capacity Building Program. This is aimed at a policy, operational and infrastructure level. The program includes assessing Council's institutional capacity and comparing against benchmarks, informing the selection of capacity building interventions to address identified needs against best practice. This was aimed at an individual, business unit and whole of Council level. The ultimate outcome of the BCC WSUD Capacity Building Program was the provision of a clear understanding of Council's institutional capacity needs and the development of associated whole of organisation activities or solutions to address these needs based on a priority selection matrix at an individual, business unit and whole of Council level. (Personal communication, BCC, August 2013).

Asset Creation in NSW

By comparison to the UK, Australia has no National WSUD Standards and NSW has no State wide design, construction or adoption standards either. Each LGA is responsible for determining its own performance, and approaches to water quality asset creation and adoption. While most Council's have resolved traditional piped drainage design and construction through reference to Aus-Spec or their own Specifications when it comes to water quality management there is still a significant difference in approaches and standards that can pose challenges for Developers, Consultants and by extension it must be costly for Council's too.

Industry Trends and Alternatives

Ashgrove Estate in the Auburn LGA is an estate developed in 2006. It has a state of the art centralised stormwater treatment, harvesting and reticulation system (Brown et al, 2008) and was awarded a Green Globe Award in 2008 from the NSW Premier. Uniquely its water management system is privately owned and managed by a body corporate rather than Auburn Council. The estate was strata titled and this included the stormwater assets and stormwater reticulation system. This approach may provide cash strapped Council's with a viable alternative to become asset owners and arguably it also empowers communities. In this case householders get access to about 10 ML of stormwater per year and share the maintenance costs of a single system through strata levies. A life

cycle analysis has shown this to be much cheaper than maintenance of a household rainwater tank. This is a win for all stakeholders.

Next to the Ashgrove Estate is a new industrial estate called Regency Green. Here a life cycle analysis (Storm Consulting, 2006) again showed that it was going to be cheaper for Council to become a regulator and enforce “best practice” source control on each lot than to own and operate a fairly large constructed wetland on land that could have been developed. This was a win for Council and the estate developer but comes at a higher cost to individual lot owners. It is not the lowest cost solution for society.

Blacktown Council has also come to realise that it is cheaper to regulate on site source controls than to continue to build end of line GPTs and wetlands or other devices that it can't afford to maintain in the long term (Personal Communication, BCC, May 2013).

Is there a case for a Unified Adoption guideline and a standard for NSW?

The UK has created a National SUDs Standard. This creates certainty for developers and lowers approval risks because they know what their obligations are and can allow for that in budgets. They (and their consultants) do not have to relearn every time they develop in a new Council. With asset creation to a specified standard and maintenance also specified to a common standard the opportunity for large economies of scale can be created which in turn creates opportunities for large, cost effective, privately owned, maintenance companies to take on maintenance across many LGAs. With a common standard, a common contract could be negotiated by the Regional Organisations of Councils (ROCs). This might turn SQID maintenance into a well honed operation that may one day be on par with road maintenance in terms of the asset management systems that can be applied.

In conclusion there may be significant opportunities created by a unified, state wide standard.

One problem with standards and guidelines is that they can stifle innovation and care would need to be taken to allow for any common standard and guideline to be flexible but still deliver benefits.

Conclusion

In conclusion there is a piecemeal fragmented approach to SQID asset creation and management in NSW. There is evidence of SQIDs being decommissioned not long after they have been commissioned though we do not think this practice is widespread. This however reflects a gap between design and asset creation and ownership. This gap has been present since the 90s.

At least Water by Design in Queensland, Moonee Valley in Victoria and Blacktown City Council in NSW are taking a lead and narrowing the gap and moving toward total SQID asset management frameworks and to be successful this involves whole of organisation change programs. Other Council's still have reactive maintenance approaches which can be a costly way to manage SQIDs.

In the UK and Queensland there are common standards and adoption guidelines and this will create the opportunity for economies of scale and more cost effective maintenance approaches.

References

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