USING GLOBAL LESSONS TO IMPLEMENT WATER SENSITIVE DESIGN INTO LOCAL NEIGHBOURHOODS

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ABSTRACT

New Zealand has been developing strategies for managing stormwater for a significant period of time with City and District Councils have been working in isolation to develop guidance for individual areas, often based on Auckland guidelines. Now a framework is being developed for the whole country, recently endorsed by the Minister for Water and Water Sensitive Design (WSD) beginning to take hold across the country. This is in part due to a response from local communities looking for a more sustainable and environmentally aware lifestyle. This is the perfect opportunity to learn from global projects to implement WSD successfully.

What's Stopping WSD Being Implemented?

The first lesson is education of those implementing these approaches. It is easier to continue with a business as usual approach rather than advocate best practice which might require additional learning, working with teams unknown to you and resulting in an unfamiliar outcome. The design and approval of WSD generally falls to engineering teams, both in the public and private sector. The Mannington City Council (2017) in Melbourne, Australia identified that their teams were unresponsive to implementing new practices because there was no explanation of the wider principles being applied and the approach the planning team was aiming for. They identified that their maintenance teams were concerned that the introduction of WSD would increase workload as there would be a series of unfamiliar systems which would require maintenance. To address this concern, they commenced a research project to develop WSD systems which had zero (or negligible) additional maintenance to that already undertaken.

Once the approach is generally accepted, funding is regularly used as an excuse to stick with a business as usual strategy. Wherever WSD approaches are implemented at some point the cost of implementation and maintenance becomes an issue. New Zealand is ideally placed to stop this happening by planning for this impact at the start. Looking from the outside there are a number of different approaches to releasing funding to address this concern outlined in the sections below.

Council and/or water authorities have the skillsets and the tools required to undertake WSD maintenance, it is often limited funding to carry out the maintenance which is the limiting factor here. Maintenance of WSD requires revenue rather than a one-off cash injection. New Zealand already sees stormwater as a water utility with its inclusion within three waters. By taking this philosophy a step further and implementing a stormwater charge (or tax) there is an opportunity to create a revenue stream to pay for the maintenance and upkeep of drainage assets. The implementation of a new charge should not be considered lightly and the experience of our global partners is invaluable in this respect. Lessons learnt in Charlotte, North Carolina (population ~840,000) included:

- Community engagement and support is priceless. Before the tax was introduced extensive community engagement was undertaken to identify the key stormwater concerns and what the community expected from the Council in return for the payment of the charge. This engagement continued throughout the business planning and implementation phase, identifying the price point the community placed on stormwater and what would be expected for this money.

- Listen to the community when pricing the service. Often this charge was a small amount per household (perhaps the price of a cup of coffee per month) but when multiplied by the number of households and considered as a regular income, even a small charge was sufficient to manage the needs of the city's stormwater network.

- Be seen to be maintaining the stormwater system. If a new charge specific to maintaining stormwater is commenced, the revenue generated must be used only for stormwater related activities. Before the implementation of Charlotte's stormwater tax, the city had in excess of 10,000 stormwater related complaints per year. Within a few years after the implementation of the tax the city had a surplus fund for stormwater management. This money was then used to convert drains into living streams and retrofit WSD into old systems.

- Address complaints quickly and efficiently. When a resident identifies a problem and reports it to the council where possible this problem is addressed within 24 hours and as a minimum the issue is logged and inspected. The council knows it needs to be seen to be addressing the resident's concerns.

- Excellent customer service goes a long way. If a community is paying additional money for something the level of service needs to be outstanding. This means the system of reporting issues to the council needs to be easy and manned by well-informed staff.

Maintenance costs can also be managed by careful management of asset handovers. Work undertaken by the Gold Coast City Council (cited in the City of Melbourne, no date) showed that maintenance costs significantly reduce when landscaping has established and construction is completed. Research undertaken in Australia (Taylor, 2005) and the United Kingdom (Environment Agency, 2015) has shown that after establishment of the systems (within the first 2-3 years) ongoing long term maintenance ranges between 0.5% and 10% of the establishment costs for most WSD features. Therefore if Councils only accept responsibility for assets after that initial period of high cost maintenance then the long term maintenance costs become more manageable.

Embracing WSD

Streamlining the implementation of WSD is only the start, education of the wider community is where WSD will truly be embraced. Government at all levels need to be engaging with local community action groups to help residents understand the benefits of WSD. It is only by arming residents, and potential home buyers, with the knowledge to assess the development 'extras' that demand will be created at a grass roots level for developers to really embrace WSD and the concepts of liveable communities.

Research has shown that people are willing to pay more to live in a WSD community when they are educated about the benefits of the development. Until the time when demand exceeds supply developers will be reluctant to embrace the slightly more expensive principles of WSD. This cycle needs to be broken for the market to move to a more sustainable community model.

Many of the ideas outlined above require community buy-in to be achieved. Community engagement in this topic is, however, limited to niche action groups and specific towns known to attract likeminded individuals. It is important that embracing WSD is not limited to government policies and implementation, by mandate, of best practice. Local residents need to want to live in WSD communities because they see the benefit to their lifestyle, health and wellbeing. Presently developments maximise yield and minimise public open space, incorporating WSD in a limited way mostly within active recreation spaces, if at all. This has led to developments with little green space and houses almost within touching distance of each other. This prioritisation of profit over community wellbeing has the potential to have long term financial impacts on the country with increased spending on mental health care in the future just one likely outcome. This is why community advocates and education are so important. This can take many different forms; from formal education within the school system; engaging local youth groups in water advocacy programmes or programmes aimed at knowledge sharing within development or community areas.

Geographe Catchment Council Inc. (GeoCatch) is an Australian local action group consisting of community representatives working with Government officers to advocate and educate the benefits of WSD. GeoCatch advocate the benefits of WSD through purposely locating projects in areas with high foot traffic so the local community can see for themselves the benefits of WSD. By installing and maintaining example WSD in areas highly visible to the community it allows the system to speak for itself. Through the provision of signage explaining the processes and the added benefits (in excess of the visual amenity) it enables the community to place added value on these systems and encourages a greater appreciation of the value to their local community.

By learning from the lessons of our global partners New Zealand has a great opportunity to succeed with fewer hurdles than many who came before us. Working collaboratively and by putting the principles of WSD at the heart of developments, the end results will not only manage stormwater but create liveable communities where residents can live happier and healthier lives. We might even achieve the Council's utopia; WSD that is maintained by the residents.

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KEYWORDS

WSD, education, change, sustainability