

Splintering Urbanism and Sustainable Urban Water Management in Sydney and Melbourne

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Abstract

In Australia, examination of water problems has traditionally centred on the country's frequent droughts and their impact on agricultural communities. However, since the 1980s, weather patterns have shifted and urban water storages have reached the lowest levels on record. Further, pollution from industry, agriculture and urban regions into waterways, creeks and rivers is degrading entire ecosystems.

Studies have been carried out in the 1990s and early 2000s on the tools, techniques and policies to overcome these urban water problems. However, a major barrier to implementation is that the analyses remain largely situated in the fields of engineering, biology, and chemistry. Although some literature examines governance issues, it deals primarily with the professional water management sector, and the actions to be taken on a local scale (within Australia).

The goal of this thesis was to transcend this boundary and consider whether barriers to sustainability are a symptom of broader political, social and economic shifts occurring in urban infrastructure in industrialised countries. Accounting for these shifts would provide a comprehensive understanding of the context in which these barriers occur, and improve the implementation of sustainable urban water management.

Graham and Marvin's *Splintering Urbanism* (Graham & Marvin, 2001) provides this comprehensive framework. *Splintering Urbanism* is an exploration of how complex social and economic shifts such as globalisation and privatisation intersect with rapidly evolving technologies and transform urban infrastructure networks from a singular centralised, public network to a more fragmented, complex set of networks that are 'unbundled'.

This thesis applied components of the *Splintering Urbanism* framework related to unbundling in an Australian urban water context. Two case studies in Sydney and Melbourne were conducted. The case studies found that the trends identified in *Splintering Urbanism* may act as a barrier to sustainable urban water management.

However, it also found that the mere presence of these dynamics does not preclude the failure of sustainable urban water management. Rather, the effect depends on the context and institutional conditions. These conditions include: biophysical makeup of the region; the historical and contemporary culture of planning; political leadership; and the relationship between social and environmental advocates and the state and local water authorities.

In both case studies, environmental sustainability has not been achieved. In Melbourne, due to a strong social advocacy sector and culture of state-wide planning, the effect on social sustainability, at least, has been minimal. Sydney, in contrast, has experienced a greater impact due to the institutional conditions. These include a lesser degree of state-wide planning and a divided policy culture that make the city vulnerable to fragmentation and unbundling.

An additional finding showed that the environmental movement facilitates fragmentation and unbundling in Australia. It does so three ways. First, it advocates private sector participation, mechanisms, and ownership of urban water supply and treatment systems. Second, the “neoliberalisation” of environmental groups creates a philosophical division between environmental and social advocates in their solutions to water problems. Third, environmental advocates promote a decentralised approach to water supply and treatment. While decentralised systems may have environmental benefits, they also open institutional pathways to unbundling.

Though the findings are specific to these regions, they can be generalised to comment on the effect of unbundling and the privatisation of public infrastructure and services. That is, without leadership and planning, the processes driving splintering become barriers to sustainability. If institutions continue to follow the paths identified in this study, greater fragmentation and social unsustainability may occur, resulting in increased ecological unsustainability.