



Wetland Peninsular - wetland saviour or erosion point

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Biography:

Chris Beardshaw is the principal engineer and is passionate about stormwater management. Chris has over 15 years experience in the stormwater management industry and is considered a leader in his field. Chris has completed a BEnv Eng (Hons) a MEngSci and a Graduate Certificate in River health management. Chris has been a committee member on the Victorian Stormwater Industry Association for a number of years and continues to add to the discussion of best practice stormwater management.

As space for wetlands within the urban context becomes more compressed, and contemporary water quality guidelines increase the wetland footprint, the search for more efficient wetland designs has become a key part of our industry. Wetland peninsula's have become one of the tools to enable the designer to maximise the water surface area within a given space.

Recently Melbourne Water have recognised some of the drawbacks of this approach, reporting erosion points and failures associated with these types of designs. It is suspected that this is a result of both design failures and construction techniques including:

- high velocities and shear stress's as part of the geometric design
- preferential flow paths along the wetland and peninsular interface
- topsoil placement and soil stability during initiation phases

This hypothesis has been tested with Melbourne Water staff using detailed hydrodynamic models and an examination of a number of effected wetlands in Melbourne's South East. Wind shear and hydraulic forcing's have been tested to examine the if design recommendations can be made. An examination of the construction techniques, and in particular wetland initiation phases has also been undertaken.

A number of design recommendations for constructed wetlands are made from this investigation. It is hoped these can be used to further the wetland design industry within Victoria.