

structures). Might it not simply be sufficient and appropriate to rely on the water quality monitoring?

4. RESPONSE TO QUESTIONS RAISED BY COURT

4.1 As described in the rebuttal evidence of Mr Priestley, the existing Daldy St outfall discharges into what will become the Wynyard Wharf South Water Space. When the outfall discharges the state of the tide will determine whether any water from the discharge circulates through the Outer Viaduct Harbour into the Inner Viaduct Harbour. This occurs currently (pre-project) and will occur following the construction. The modelling undertaken of the potential changes in water circulation indicated a change in the length of time flushing will take within the Inner Viaduct Harbour. The modelling described in The America's Cup, Wynyard Hobson: Coastal Processes and Dredging Technical Report (CBD Vol A, CB17, page 913) Appendix C, described the predicted changes in flushing time. Although the time was longer, in my opinion the changes as they were likely to be reflected in water quality are acceptable.

4.2 Condition 119b requires that the IVHEMP take into account the extent to which there are any new untreated stormwater discharges from surrounding development into the Inner Viaduct Harbour and Wynyard Wharf South Water Space. I concur with the comment made by the Court that any new stormwater discharges will be controlled and I would have an expectation that any new discharge would be treated.

4.3 The monitoring programme developed within the IVHEMP was devised to provide as much information as possible to identify whether there were any environmental changes within the Inner Viaduct Harbour following the construction of the physical structures predicted to cause the predicted changes in flushing time. Although the predicted changes were not considered to result in changes in water quality I considered it appropriate that environmental monitoring should be carried out. Based on existing information I do not expect that there will be any significant changes to stormwater discharges arising within the Viaduct Basin catchment. There will be small changes in stormwater quality in the immediate Wynyard Wharf South Waterspace (arising from the treatment of local stormwater). Should there be any changes in water quality within the Inner Viaduct Harbour they will arise from the normal daily tidal waters and / or changes associated with stormwater influences (The Daldy and Halsey St discharges).

- 4.4** Water quality monitoring as described in the IVHEMP has commenced (being undertaken by the Alliance). As it takes some time before all of the structures (that are involved and may potentially increase the flushing time) are in place, monitoring will be carried out for a minimum of 12 months following the completion of construction (as required by condition 119A).
- 4.5** The IVHEMP contains three core monitoring components: water quality, sediment quality and ecological monitoring (benthic and ecology on structures). If the monitoring undertaken included only water quality, should a negative change be identified in two years' time, the first question that would have to be answered would be whether the change had any adverse effects on the ecological communities and well-being of the Inner Viaduct Harbour. Without any ecological information, reaching a conclusion would be harder. Ecological effects, should they occur, would be expected to be driven by either changes to the benthic (sediment) environment or water quality. Although the ecology of the Inner Viaduct Harbour is described as having limited value, the ecology contributes to the well-being of the Inner Harbour. Structures such as pontoons support communities containing a range of species.
- 4.6** Overall, I considered that the inclusion of an ecological component to the monitoring would provide a more robust programme. Should any questions arise in relation to changes in water quality and their consequent effects, sufficient information should be available to allow informed decisions to be made as re-engineering the physical environment will be a substantial task. Collecting ecological information just at the time of identifying a change to the quality of the Inner Viaduct Harbour environment may not be sufficient to determine whether there had been any adverse effects on the ecological environment.

5. CONCLUSION

- 5.1** I have provided clarification regarding a number of matters raised by the Court regarding the environmental monitoring included in the IVHEMP. Limiting the monitoring programme to water quality only, is likely in my opinion to limit any decision making process should changes in water quality be identified in the future. Minor changes in water quality may have no effects on the overall well-being of the Inner Viaduct Harbour.

Without any ecological information, making an informed decision about effects may not be possible.

Paul Kennedy

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