

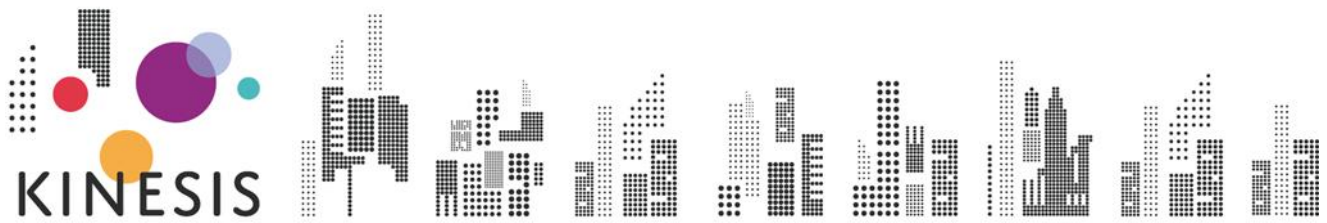
To	Ben McCarthy Senior Project Manager Wave Park Group
Date	11th April 2017
Topic	Urbn Surf (Sydney) Wave Park Proposal

Dear Ben,

Further to our recent discussions, we have documented our independent analysis on the energy and water impacts of the proposed wave park to assist you in your discussions with the Sydney Olympic Park Authority (SOPA).

Our findings and advice are fourfold:

1. Firstly, our independent modelling showed that the findings of your technical reports appeared consistent with our understanding of the expected energy and water demands.
2. A foundation of our analysis was to separate the on-site facilities (building structure, etc.) from the wave park itself to better understand their relative impact. The key findings here were:
  - The resource demands of the on-site facilities make up a small fraction of the whole wave park; 11% of energy demand and 17% of water demand.
  - We also identified efficiency improvements that we think could be specified in the design and construction of those on-site facilities that would lead to a further 15% reduction in energy demand.
  - The proposed installation of a 100 kW solar array would supply 35% of the on-site facilities energy demand. In our opinion, this is a best in class outcome for facilities of this type and scale.
  - The optimised use of rainwater and recycled water for irrigation and toilet flushing means that potable water is only used for less than a quarter of the on-site facilities demand.
3. With respect to the wave park itself we identified our analysis found:
  - The electricity demand for filtration and wave generation is approximately equivalent to the electricity consumption of 600 dwellings in the adjacent local government area. It ends up being equivalent to the energy demands of a typical aquatic centre for filtration and heating.
  - The water demand of the wave park itself is largely driven by evaporation losses and is the approximate equivalent of the water consumption of about 200 dwellings in the adjacent local government area. In comparison to other recreational pursuits, it uses less than a third of what would be required to irrigate a typical golf course within the local climate zone.
4. Our recommendations can be summarised as:
  - Urbn Surf (Sydney) can set itself as the global benchmark in the development of wave parks by becoming completely carbon neutral by 2025. This can be achieved by exploring and committing to a staged green power/power purchase agreement to meet all the parks energy needs. This would match the commitments made by some of Australia's leading property companies.



- Beyond this individual wave park proposal for SOPA, the Wave Park Group should engage with a water utility service provider to explore, plan and expand the use of recycled water for recreational uses to replace reliance on potable water sources.
- Whilst there is no “fit for purpose” rating tool to benchmark the environmental performance of a wave park it may be desirable for Urbn Surf (Sydney) to explore the use of one of the recognised industry rating tools. Our review of the available industry rating tools suggest that the “Green Star Design & as Built” would be an appropriate rating system to recognise the benefits of the sustainability initiatives Urbn Surf (Sydney) is proposing. Furthermore, it would provide a broader framework for Urbn Surf (Sydney) to address other environmental and sustainability outcomes in the design and construction of the on-site facilities.

Please get in touch if you have any further questions.

Regards,

A handwritten signature in black ink, appearing to read "Bruce Taper".

Bruce Taper  
**Director**