



Environmental Sustainability

Who is Aventuur?

[Aventuur, Inc.](#) is a global surf park developer and investor, with its APAC head office located in Perth, Western Australia and its American offices in Los Angeles, CA.

Aventuur holds the exclusive rights to the market-leading Wavegarden 'Cove' surf park technology for Australia (excluding Melbourne and Sydney metro areas), New Zealand, Singapore and Fiji, and is Wavegarden's largest partner globally.

Introduction

Set out below is key messaging we can refer to in explaining the environmental sustainability objectives of our company and how they apply to our surf park projects.

Background

- Environmental sustainability is incredibly important to Aventuur, and to surfers generally. This is why it is one of our company's core values.
- We recognise that surfers, and the vast majority of our guests and other stakeholders, have an interest in ensuring that we take steps to minimise harm to the planet.
- Aventuur recognises that in the 21st century in order to maintain your social licence to operate, you must focus on sustainability matters.
- In terms of environmental and social responsibility, Aventuur aims to lead the market as a responsible and conscious surf park developer.
- Aventuur believes in achieving a triple-bottom-line result from its operations, where we place "people and planet alongside profits".
- Aventuur aims to lead the market in the development of the most environmentally sustainable surf facilities and systems in the world.
- Environmental sustainability lives in our DNA - it is something we reflect on in all design, development and operational decision making.
- This is evidenced by our decision to work with our various architectural partners, each of whom are focused on environmentally sustainable design outcomes.
- We will engage with our environmental advisers in a collaborative way to achieve better environmental outcomes than might otherwise have been the case through the full life-cycle of the project, from design to planning, construction and the operations phase of any project.

To achieve the goals and ambitions described above, we intend to focus on the following six core areas:

1. Energy

- Physics dictates that a certain amount of power is required to displace a large enough volume of water to create surfing waves.



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- Fortunately, our technology partner, Wavegarden, has developed the most energy efficient wave generating system in the world.
- This fact was a point of importance for us when undertaking due diligence and selecting our technology partner.
- The Wavegarden 'Cove' only loses a few percent of efficiency throughout the entire process of converting electrical energy into the mechanical force that pushes out swells.
- The 'Cove' has the lowest energy requirement of any commercially available surf park wave generating technology, when comparing wave height and number of waves produced per hour across technologies.
- The electrical energy required by the 'Cove' to produce a 2m high, 16 sec long surfing wave is approx. 0.85kW per wave produced, being the lowest energy consumption of any wave generating technology currently available in the market.
- This result is achieved in part by virtue of the fact that the wave generating system is able to capture and use energy from the lagoon, in a manner akin to regenerative braking in an electric car.
- The energy per wave produced that is required by a 'Cove' is up to 10x less than other pneumatic based wave generating systems in the market.
- When in commercial operation, approximately 500 surfing waves are produced per hour. This gives a total energy requirement of approx. 400kW per hour of lagoon operation.
- The electrical energy consumed by the 'Cove' in one hour of operation is equivalent to one hour of operation of a quad-seat chairlift in a ski resort.
- When accounting for heating systems, a Wavegarden 'Cove' based surf park development has approximately half the annual energy needs of a typical regional aquatic centre.
- Aventura will use hi-tech, LED sports lighting systems that are highly energy efficient when compared to older halogen luminaire style systems.
- Aventura is committed to the use of low energy fittings and fixtures within facilities it develops.
- Where possible, all habitable structures associated with our developments will be designed with passive ventilation and solar orientation in mind.
- Aventura is acutely aware that our customers will demand that we responsibly source energy for the facility.
- As such, Aventura's goal is to ensure that all of the power we use at our facilities comes from 100% renewable sources within the first few years of commencing operations.
- Depending upon the location, there is also the potential for complete energy self-sufficiency through the use of photovoltaics and batteries.
- Aventura is aiming to install solar PV array on top of all large span buildings, likely to generate over 100kW power (subject to location and climate).

2. Transport



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- Aventuur will create systems to encourage the use of public transport and shared car transport options to access its developments.
- Aventuur will encourage the use of bicycles by guests and staff to access the site, by providing incentives, such as bike parking areas adjacent to the entrance and end of trip facilities.
- The provision of high-quality hire equipment will reduce the need for guests to bring their own surfboards, better enabling the use of public transport and cycling options.
- Aventuur is also aiming to install electric car recharging stations and to have dedicated bays for electric vehicles within the carparking areas of facilities it develops.

3. Water

- We are now experiencing a drying climate in each of the markets Aventuur is operating within.
- We believe climate change is real, and we therefore need to be very mindful of both the sourcing and nature of our water use within our development.
- Dependent upon the climate and evaporation rates, we will require approx. 30ML to 50ML of water annually to replenish the lagoon.
- This may sound like a lot, but consider the following examples:
 - Horse racing courses in warm climates use up to 80ML of water a week to irrigate their tracks in the summer (vs 1.5ML/wk to maintain an equivalent surf park lagoon).
 - The 'Cove's' annual water requirement is equivalent to about 8% (<2 holes) of what is typically used annually to irrigate an 18 hole golf course. However, we note that a 'Cove' attracts 3 to 5x as many guests per annum, and serves the recreation needs of a much broader cross section of the community.
 - The 'Cove's' total annual water requirement is similar to that for an Olympic sized public swimming pool.
- Where possible, Aventuur will seek to use the lowest impact source of water for its developments.
- Aventuur will investigate water harvesting and rainwater catchment for use in irrigation and for other non-potable water uses.
- We will also investigate the use of grey water within the facility for irrigation and other suitable purposes.
- Aventuur is committed to using high efficiency, water saving fittings and fixtures within every facility it develops.
- Wavegarden's supplied water treatment system minimises energy consumption associated with filter pumps and UV treatment systems.
- The closed loop recirculating filtration system minimises water loss from backwashing and the like, which typically occurs in aquatic centres and is a large source of water loss.
- Minimal amount of chemicals are required to maintain high quality water due to the extremely low bather load on the water body.



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4. Habitat

- Aventura will as a preference, seek to develop sites that are already disturbed and are either fully, or partially, urbanised rather than clearing natural, undisturbed habitats.
- We will seek to preserve as far as possible existing flora and fauna communities that are of importance.
- We will use native and endemic plant species in the design of the soft landscaping elements of the facility so as to attract insects, birds and other small wildlife.
- Recognising that we are in a drying climate, Aventura will incorporate best practice Water Sensitive Urban Design principles into the design of the landscaped realms within its developments.

5. Recycling/ReUse/Waste

- The materials used in the construction of our lagoons are non-toxic and can be recycled in the future, as required.
- Where possible, we will work with the assistance of our engineers to use recycled concrete for the construction of the lagoon structures, the lagoon floor, service roads and hard stand areas around our facilities.
- Where it is necessary to clear part of a site to accommodate the development, we will aim to retain the trees felled to use them ultimately as part of the landscaping features around the park.
- We will bring in local wood carvers who can use the retained logs to create seats, bike racks, and climbing features for our children's playground areas.
- Boulders and rocks excavated from site, will be retained on site to be used within the landscaping design.
- Minimising food waste and the local, ethical sourcing of food is very important to us from the perspective of conducting environmentally sustainable hospitality operations on site.
- Aventura has adopted a policy to discourage the use of any single use plastics within developments we are associated with, largely in recognition of the devastating effect plastics have on our ocean environments.
- We will aim to sell water that can be bought in recyclable paper cartons (www.justwater.com) which can then be refilled at free hydrations stations which will be located in the park.
- Residue captured by the filtration system is to be treated on site to create a spadeable waste, which will then be used to fertilise vegetation within the surf park facility.

6. Construction / Carbon Neutrality / Certification

- The CO² footprint generated by driving 4km to a beach is greater than that of surfing 1 hour in a Wavegarden 'Cove'.
- In a climate constrained world, Environmentally Sustainable Design (ESD) should no longer be considered an added extra.



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- Aventura see it as a critical part of designing high performance, energy and resource efficient buildings associated with our developments that will meet the needs of owners, occupants, and the environment.
 - Aventura will aim to achieve suitable ESD certification (e.g. Green Star, LEED, NABERS, Section J, Carbon Neutrality) of its built forms within jurisdictions in which it operates.
 - Audit and certification processes are to be commenced once our facilities are fully commissioned and have been operational for at least 24 months.
 - Aventura projects will aim to be carbon neutral within 5 years of opening. Building operations within 3 years of opening, and lagoon within 5 years of opening.
 - Through the construction of our developments, we will source materials from suppliers located as close to the relevant site as possible so as to minimise our carbon footprint from transport activities.
 - Aventura will also aim to achieve third party sustainability certification for its surf park operations via the “STOKE certified” audit process (www.stokecertified.com).
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