Melbourne Cricket Ground’s Smart Stadium Strategy
Kyoto, Japan to Melbourne Cricket Ground, Melbourne, Australia

8,254 km
11 hours
MCG Overview

• The Melbourne Cricket Club (MCC) was established in 1838 and has 126,000 members and over 230,000 on the waiting list making it one of the largest sporting Clubs in the world.

• The MCC is responsible for managing one of the world’s largest sporting stadiums, the Melbourne Cricket Ground (MCG).

• The MCG was established in 1853 and attracts over 3.5 million patrons per year and has a capacity in excess of 100,000 patrons.

• The MCG is one of the busiest stadiums in the world with over 90 event days and 1,500 non-event day functions annually.

• The MCG is surrounded by Yarra Park, 32 hectares of park land which the MCC also manages.
Smart Stadium Strategy – why

- Theming and branding for home teams
- Fan engagement
- Operational efficiencies
- Commercial opportunities
Smart Stadium: Stage 1

- Australia's largest HD vision boards
- HD production facilities
- LED lighting to customise stadium
- LED perimeter ribbon boards
- High speed data network. 'The backbone'
- IPTV HD screen network
- WIFI network solution throughout the MCG
- Stadium wide DAS solution
Smart Stadium
Stage 2
Queue Management / Artificial Intelligence (AI)

• Turns crowds into queue science
• Fan visibility of wait times
• Empower fans to make decisions at a glance
• New directional information
• Even out the crowd, new operational data
New MCG App

- Research backed
- Do 5 things really well
- Remove pain / friction in the stadium
- Make the experience more seamless
- Focus on customer service
- Even out the crowd new operational data
Data/IT Security

- ISO27001 certified, framework to protect our information assets
- Protect fans information when they are connected here
- Data and privacy is important
- Sandbox emails
- VLANS, firewalls
- Physical security

**Key takeaway** – don’t forget to protect your fans data
Transformed ticketing

• Mobile only
• One touch SMS ticketing
• App Ticket Wallet
• Loaded value tickets
• Virtual reality seat view
• Reserved seat returns
• Concourse only tickets
• Biometric entry
• Microchip tickets
Cashless Stadium

- Eftpos Everywhere
- Tap & Go
- Mobile Payments
- Loaded Membership Cards
- Loaded value tickets
- New operational data
Over 3.5 million people passing through the Melbourne Cricket Club’s turnstiles last year, generating more than 2000 tonnes of refuse.

Over the past decade the Melbourne Cricket Club, has implemented a series of processes to increase the amount of waste it diverts from landfill to recycling.

Awards won:

- Green Sports Alliance – environmental innovator award
- Australian Organics Recycling Association – Outstanding contribution to industry development award
Waste streams and collection

- More than 20 waste streams in operation to achieve maximum recycling throughout the venue
- In 2016-17 the MCC diverted more than 3,200 tones of rubbish from landfill
- 2008 Overall Recycling – 22% with seating bowl at 0%
- 2017 Overall Recycling – 83%
Green Waste to Soil Food

- MCG is first sports venue in the world to close the loop on organics recycling

- Organic waste (turf and food materials) are processed in an onsite dehydrator and turned into a soil additive that is then distributed in Yarra Park and also donated to community groups

- More than 90 tonnes of organic waste has been processed from November 2017 to July 2018 – creating 25 tonnes of soil additive

- Nutrients from soil additive will sustain health of Yarra Park into future

- On-site treatment eliminates CO2 associated with waste transportation
Recycling Streams

25 unique waste streams at the MCG including:

- Light bulbs, Paper and liquid waste, Glass, Batteries, Paper and secure paper
- Hard plastics and repurposed old furniture
- Steel & metal, Organic, soil & turf, Timber pallets, Polystyrene, thundersticks
- Plastic/rubber gloves, Beard and hair nets, office stationery, e-waste, liquid waste, cooking oil, commingled, soft plastics etc.
Partnerships with Industry / Hirers

• MCC works closely with partners to ensure only recyclable materials are brought into the stadium. Examples include sourcing recyclable ‘cheer sticks’ for Melbourne Stars

• Procurement policy ensure all projects at MCC consider short and long-term environmental impact of materials

• Regularly conduct staff, contractor and partner education programs to improve awareness about sustainability initiatives

Current Projects

• Thin plastic to bollards

• Thunder sticks re-use
Smart Stadium: Water Catalyst for Change

- South-Eastern Australia- extreme drought (El Nino)
- MCG named as a Top 100 water user in Victoria
- MCC/MCG icon- Leadership role in community
Management of Yarra Park/Projects

- Undertake a Yarra Park Master Plan
- Undertake a $6M Landscape Upgrade
- Construct a Water Recycling Facility (WRF) and MCG Third Pipe project (Tenix)- $20M
Background to Water Recycling Facility

• Ensure the long-term health and wellbeing of Yarra Park’s 1,250 trees and parklands

• Increase park usage by local residents, national and international visitors and reduce the use of land for car parking during events

• Install an irrigation system to irrigate the 32Ha Yarra Park

• Not detract from Yarra Park visual amenity
Progress of Water Recycling Facilities
Water

The water recycling plant cost $20 million, the purpose of the project was to provide Class A water primarily for irrigation in Yarra Park and at the Punt Road Oval.

The water is also used in a third pipe recycling scheme throughout the MCG in toilets, amenities, and for washdown (cleaning and maintenance).

Build entirely underground to maintain visual amenity of the park.

The MCG’s water recycling plant produces over 600 kilolitres of recycled water per day for the use on Yarra Park, Punt Road oval and toilet-flushing at the MCG.

Since installing its own water recycling, the MCC has reduced its internal water consumption by 50 per cent. It produces 180 million litres of recycled water each year equivalent to 72 Olympic-sized swimming pools which is used to flush toilets and water the gardens.
Benefits to Melbourne

• Preservation of heritage-listed Yarra Park & iconic MCG

• 50% reduction in MCG’s overall water consumption, approximately 1000 Victorian households water use

• Parklands more attractive to families, community groups, cyclists & runners

• Built entirely underground to maintain visual amenity of the park

• Creates a cooling environment around the MCG
Success of Water Recycling Facility

November 2009 pre WRF

November 2014 post WRF
Smart Stadium: Energy

- Electricity – Over 20,000,000 kWh consumed in the last 12 months at the MCG
- Gas – Over 30,000 GJ consumed in the last 12 months at the MCG
- Highly variable load – seasonal/attendance/event duration/time of day
Rising Costs of Energy

The cost of energy at the MCG has risen significantly:

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Energy Efficiency Initiatives

Significant works completed:

• Energy Performance Contract
• Utility Monitoring and Visualisation System
• Optimised HVAC Scheduling
Energy Performance Contract (EPC)

- $8 million investment, with the savings from the reduced energy consumption forecast to offset the cost within 7 years.
- Reduced energy consumption by more than 23% and carbon emissions by 20%.
- Highlights included replacement of 12,000 lights with LED technology, new innovative Building Management System and new chillers in the Great Southern Stand.
Utility Monitoring and Visualisation System

• The Utilities Monitoring and Visualization System (UMVS) is cloud-hosted and allows operators to track live consumption of electricity, water and gas during an event, and when the stadium is not in use.

• With the comprehensive metering system (over 120 metering points), the UMVS system not only highlights the cost of running the facility, but also allows the MCC to track real-time cost savings when they are making operational changes.
Optimised HVAC Scheduling

- On event days prior to 2018, every room in use at the MCG would be turned on and off at a common time.

- Following works completed in 2018 to integrate Outlet Trading Sheets with the Building Management System, HVAC is now turned on and off in accordance with room and outlet operating times.

- The system has been optimised to be at the desired temperature prior to patrons arriving, without wasting energy unnecessarily.
Electricity – Future

- LED sports lighting

- EPC 2 – Northern stand air cooled chiller replacement, 12,000 new LED light fittings, put lighting controls onto BMS
Partnership with SEA

The Melbourne Cricket Club is proud to partner with The Sports Environment Alliance (SEA).

SEA is a global alliance that live by the mission of leading, educating, and inspiring our sport community members to live, work, play, and spectate more sustainably in Australasia.

Along with SEA we are committed to do more with less footprint so we can continue to have places to play.

We find value in sharing knowledge and building networks to enhance the industry’s engagement in the clean economy to more effectively manage the changes in our natural environment.
City of Melbourne
Municipal Emergency Relief Centre

In 2017 The City of Melbourne in conjunction with the MCC conducted the very first major emergency response training exercise "Off the Grid" Involving over 350 people. The event provided valuable leanings which ultimately enhance the emergency preparedness and organisation of victims seeking refuge and assistance at a relief centre set up at the MCG following a partial power and public transport shutdown in the CBD.
Thank you