

An aerial photograph of Marina Bay Sands in Singapore at sunset. The three towers of the hotel are prominent in the center, with the Esplanade - Theatres on the Bay and the Singapore Sports Hub visible nearby. The city skyline extends into the distance under a golden sky with scattered clouds.

MARINA BAY SANDS®

# 2014 Sustainability Highlights

**Sands**  
ECO 360°

MARINA BAY **Sands**  
SINGAPORE



# Sands ECO360

Our ECO360 strategy is determined at a global level by Las Vegas Sands. The strategy is based on the issues identified as most important to our business, to stakeholders and society. The issues pertaining to our Sands ECO360 strategy are monitored through regular interaction with internal and external stakeholders across the business globally.

## Our Company Goals for 2014

*"Here at Marina Bay Sands, we are committed to protecting the environment for the long term. Pursuing the reduction of our environmental impact is integrated into our core business strategy. We are dedicated to continually educing our energy use and increasing property-wide waste diversion while engaging stakeholders throughout the supply chain.*

*We will continue to deepen our outreach and spread the message of environmental conservation through working with like-minded people, organisations, and the sustainability community."*

### Mr. Kevin Teng

Executive Director,  
Sustainability



## 2014 Sustainability Goals



1. Improve property recycling rate by 10% from 2011 baseline by end of 2015
2. Reduce our energy consumption by 12% from 2012 baseline
3. Increase impact and awareness of Corporate Social Responsibility activities
4. Increase awareness and understanding of sustainability among Team Members
5. Provide a fair and rewarding environment for Team Members
6. Increase supply chain sustainability
7. Excel in health and safety across the property
8. Increase our use of sustainable food on property
9. Increase client awareness of sustainable meeting package

# Overview

Ensuring sustainability in every aspect of Marina Bay Sands' business is innate to the Integrated Resort's DNA. Through Sands ECO360, Marina Bay Sands is able to integrate best practices, technologies and methodologies in the area of sustainability across all properties and in its meetings.

In 2014, a total of 117 sustainability projects were implemented. These include resource conservation, waste management, ECO360 Meetings, Team Member engagement and training, and sustainable procurement.

**↓5.2%**  
Reduction In  
Carbon Footprint  
since 2012

Sands SkyPark Infinity Pool

## Our Key Guiding Principles

### *Resource Management and Conservation*

Dedication to the preservation of the environment and conservation of natural resources.

### *Business Integration*

Integrating environmentally sustainable and socially responsible practices into our daily business activities and with our supply chain.

### *Community Engagement*

Commitment to actively participating in community and government sustainability initiatives, including supporting local employment and procuring local products and services.

### *Team Members*

Dedication to providing a safe, healthy and environmentally-friendly workplace that promotes diverse recruiting, and developing of individuals of all ages, cultural and racial backgrounds, and religious beliefs.

### *Reporting and Inclusivity*

Continuously striving to improve the measurement and transparent reporting of our sustainability performance, and create an inclusive dialogue with our stakeholders to consider their input.

### *Compliance*

Promoting responsible business conduct that upholds regulatory requirements and values cultural differences, and demonstrates best practices where formal legislation is not in place.

## Our Governance Structure

Las Vegas Sands President  
& Chief Operating Officer



Las Vegas Sands  
Sr. Vice President &  
Sustainability Officer



Global Sustainability  
Department



Property Sustainability  
Department



**Marina Bay Sands  
Green Council**

Facilities  
Hotel Operations  
Food & Beverage  
Casino Operations  
Purchasing  
Sales  
Convention & Catering  
Human Resources  
Marketing  
Communications  
Information Technology



# Green Buildings

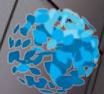
At Marina Bay Sands, we incorporate our global best practices such as comprehensive lighting standards, advanced waste management provisions, as well as back-of-house and front-of-house upstream recycling guidelines. All components of our designs are considered, from energy efficient light bulbs and cooling systems, to low Volatile Organic Compound paints and integrated room controls in our property.

## Sustainable Development Standards

The LVS Global Sustainable Development Standards were launched in 2013 to provide sustainable project requirements for the development of new resorts and the renovation of existing properties. The standards are based on Leadership in Energy and Environmental Design (LEED) and Green Mark (GM) principles, including energy and water efficiency, indoor environmental quality, sustainable materials, and waste management.



Clockwise from top left: Premier Garden View Room, environmental card, the linen change request card, and in-room recycle bins.



EARTHCHECK

EarthCheck\*

2014: Silver Benchmarked



BCA GREEN MARK

Singapore Building  
Construction Authority\*\*

2012: Green Mark Gold



## Water Conservation

Following the results of the property water consumption in 2012 we identified over 80 conservation opportunities, to date we have completed 85% of our rectification plans. As the number of visitations increased by 250% compared to 2012, the total water consumption this year only grew by 5%. Displaying a 57% reduction in water per visitation. We face the challenge of reducing our water consumption further as most plumbing fixtures are already “low flow” – over 90.7% of our plumbing fixtures are high efficiency (3- or 4-tick) under the Singapore Green Labelling Scheme. Through on property engagement projects we encourage our team members to reduce their water consumption in operations to help achieve our goals.

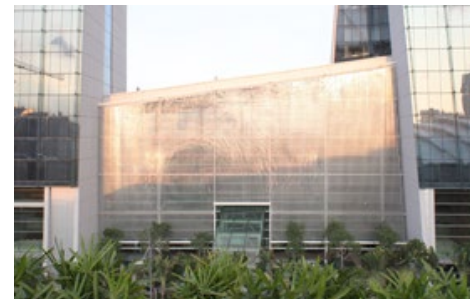
## Green Technologies on Property



Elevators use up to 70% less energy by using LED lights and electricity regenerating drives. Excess electricity generated is also diverted to other parts of the property. This saves more than 16000kWh annually per elevator.



Escalators are installed with a Variable Frequency Control System and Contact Mat that detects the traffic flow to fluctuate the speed of the belt. This significantly reduces running cost, allowing the escalator to consume 45% less energy than conventional escalators.



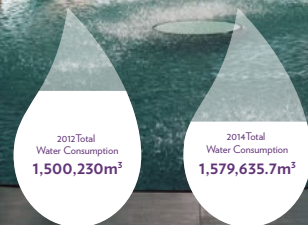
The large art installation Wind Arbor by Ned Khan acts as a shield from the sunlight, shading the glass façade of the atrium from the hot sun and prevents the building's temperature from rising too rapidly. Hence, saving energy used for cooling the interiors.



500m<sup>3</sup> of rainwater is collected on the lotus flower shaped roof of ArtScience Museum per year and cascades into the pool below. It is then filtered and recycled for use in the flush water toilet systems. 500m<sup>3</sup> is equivalent to two years' supply for a 4-room flat.

**57.4%**  
Water Reduction

Water consumption per visitor decreased by 57.4% from 2012.



38,553,427  
Total Visitation

95,243,348  
Total Visitation



# Understanding Energy Use

At the end of 2012, we developed an understanding of the energy usage in our operations. In 2013, our goal was to establish and implement a 3-year energy improvement plan (2013-2015) to reduce energy consumption through 140 facility improvement measures.

The 3-year energy improvement plan is an ongoing effort and we will continue to reduce our energy consumption to achieve our target of a 12% reduction by the end of 2015.

2012

Total Energy Consumption  
**313,607MWh**  
Total Visitation  
**38,553,427**

2013

Total Energy Consumption  
**277,964MWh**  
Total Visitation  
**40,310,055**

2014

Total Energy Consumption  
**266,293MWh**  
Total Visitation  
**39,437,660**

## 66%

**Property-wide reduction**  
Energy consumption per visitor decreased by two-thirds (66%) from 2012 to 2014.

Wind Arbor 2010—Ned Kahn

## CCMS & EBMS

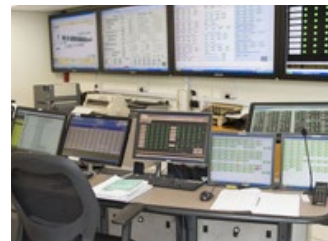
### Case Study in MICE\*

The Sands Expo and Convention Center concentrated on energy conservation as its primary Key Performance Indicator for its Sustainability Targets in 2014. In an effort to achieve the target we introduced an interface project between our event booking system and building management system that contributed to a 29% reduction in MICE Chilled Water Energy (kWh) consumption compared to our 2012 baseline data.

### EBMS

This system is the main control for all event operations. All event orders including food and beverage, room sets and technical orders, are managed by the team of 70 managers. EBMS manages space utilisation for all events in the Sands Convention and Expo Centre by requiring Event managers to input all event data into the program (meeting location, banquet event orders, event schedule) to avoid double blocking.

### CCMS



Our \$25 million Building Management System that consists of over 80,000 points that control and monitor ACMV, mechanical and lighting throughout the property from one centralised location. The system is operated by a dedicated CCMS team as part of the Facilities Department. The booking AC interface project required us to connect the EBMS system and CCMS systems through an iFacility interfacing server. This allowed the two separate systems to communicate automatically.

## Air Conditioning in MICE

In January 2014, we implemented an automatic scheduling of our meeting spaces through the interface between our Central Control Management System (CCMS) and our Electronic Booking Management System (EBMS), allowing air-conditioning to automatically turn on two hours prior and off one hour following events. The shift from a manual operating procedure to the new system for managing the air-conditioning reduced our MICE space chilled water consumption by 29% in 2014.

## 29%

**Property-wide reduction**  
The CCMS Project contributed to a 29% reduction in Chilled Water Energy (kWh) consumption in MICE compared to our 2012 baseline data.

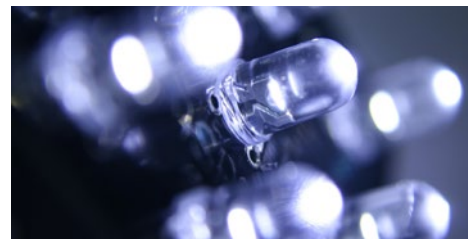
\*MICE is the acronym used to define the operation of Meetings, Incentives, Conventions and Exhibitions



# The Bottom Line on Energy

**66,150,000**  
Total kWh saved since 2012

## Energy Reducing Initiatives



90% of Marina Bay Sands' property lighting, or over 60,000 lights, use energy efficient lighting. Dimmable LEDs are also installed in our Expo halls and our 2,561 hotel rooms, which allow our guests to adjust the intensity of lights based on requirements. This initiative has resulted in an annual energy saving of 5,500,000kWh.



To encourage our guests to do their part to protect the environment, each hotel room is also equipped with an advanced eco-mode system. The "Eco" button found on the remote control gives guests the option to increase the room temperature to the optimum level.



In 2014, motion sensors were installed in 250 meeting rooms at Marina Bay Sands. Lights in these meeting rooms are automatically switched off after 15 minutes if no movement is detected.



Marina Bay Sands is connected to a District Cooling System for better energy efficiency. Our air-conditioning makes use of water-cooled chillers, which are nearly 80% more efficient than air-cooled models.



Photo sensors are also installed across property to detect the brightness of the sunlight so as to optimally adjust the intensity of lights installed in the public spaces at Marina Bay Sands.



# Management & Diversion

Over 60 projects were implemented that saw us more than double our average monthly waste diversion rate from 8% to over 20% in one year. This equates to 2800 metric tonnes of waste; aluminium, plastic, paper, cardboard, glass, and food waste—recycled or diverted annually.



More than 2,800 metric tonnes of waste recycled annually

## Waste Management

In 2014 Marina Bay Sands increased the on property food waste digesters from 2 to 5 in a project to further increase our food waste diversion. These machines convert leftover food waste into waste water that is entered into the city waste water system. The digesters operate by speeding up decomposition through providing optimal levels of temperature, aeration and moisture. Apart from reducing food waste, the digesters have built in scales that allow us to better record and manage our food waste. Two are located in the hotel, one at the Sands Expo Convention Centre and two in the retail docks. The introduction of the waste machines to the waste docks was a key component in our tenant engagement program.



One of the food digesters on property

For 2014 as part of our waste management program we concentrated on working with our Retail Mall tenants and how we could partner to reduce their waste generation. Increasing our capacity of our digesters increased the accessibility to our Food and Beverage tenants. Through training and technical support our tenants began to utilize the machines on a regular basis contributing to an average of 55 tonnes of food waste per month being digested.

*“The implementation of the food waste has benefited us in many ways. With the recycling of food waste, tenants are now aware of the amount of food waste they generated and hence able to better control the amount of food they prepare, reduce waste and its related cost, leading to less wastage and cost incurred. The waste digester has also helped to enhance our sustainability efforts by recycling wastage. MBS has provided us with the necessary training required for the usage of the waste digester thus our staff is equipped with the right knowledge as to operate the machine.”*

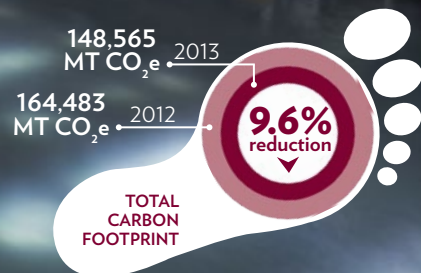
**Chin Wui-Hsen, Noel**  
Senior Food Court Manager





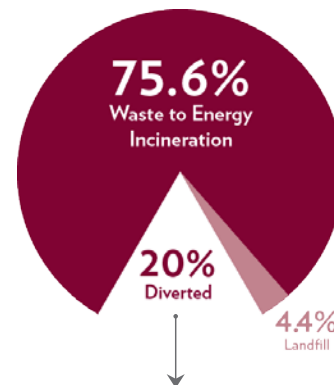
### Total Emissions

Our total emissions figure was derived using the GHG protocol, which classifies emissions by source and verified by Trucost, and independent third party.



We have included scope 1 and 2 emissions.

Rain Oculus 2012 — Ned Kahn



#### REUSE 0.7%

Food, soap, and other donations

#### RECYCLE 86.5%

Cooking oil, linen, bulbs, glass, wood, paper, cardboard, metal, plastic, playing cards, and horticulture

#### RECOVER 11.7% (Food digesters)

Food

#### DISTRIBUTION 1.1%

Assets re-distributed within MBS or given to Team Members

*The above graph reflects data from August - December 2013.*



Approximately 2.2 tonnes of cooking oil is collected and converted to biofuel per month.



Property wide linen recycling programme resulted in an increased in our average monthly linen recycling amount to 8.8 tonnes.



Over 2,700 recycling bins located across the property in both public spaces and hotel rooms

### Team Member Engagement Case Study

World Hunger Week was observed by a series of week-long events to celebrate sustainable solutions to ending extreme hunger and poverty. The event comprises of our annual bake sale to raise funds for a local food donation charity, Food From the Heart, a Canned Food Collection drive and a Clean Plate Challenge. During the Clean Plate Challenge, Marina Bay Sands pledged to donate \$1 for every Team Member who did not waste food in the Team Member Dining Room. 71% of TMs cleaned their plates and \$1580 donated. Team Members also baked goods to sell during the Annual Bake Sale, with all \$13,163 in proceeds going to charity. 27 cartons of canned food were also collected from the Canned Food Collection Drive.

All funds raised and items collected were donated to Food From the Heart, a local non-profit organization that provides food and toys to the less fortunate.



# Sustainable Purchasing

Since opening in 2010, Marina Bay Sands continuously strives to achieve excellence in our procurement procedures with our pool of over 2000+ suppliers. The integrated resort's sustainable purchasing policy provides guidelines to our vendors, encouraging them to provide solutions, materials, and goods that are eco-friendly. Sourcing from sustainable food sources and procuring of earth friendly packaging materials are also recommendations included in our sustainable purchasing policy, and are key elements of our Sands ECO360 strategy. Our sustainable procurement policy is based on the LEED (Leadership in Engineering and Environmental Design) rating standards and also complies with the SGLS (Singapore Green Labelling Standards).

We currently procure 90% of products within Singapore, contributing to over US\$500 million in revenue for the local companies.

## US\$500M

in revenue for local companies

## Global Oceanlink

### Vendor Case Study

Global Oceanlink has been providing sustainable live, chilled, frozen and other processed seafood to Marina Bay Sands since 2010. The company supplies seafood products, mainly from fish farms, that are certified as sustainable by the Marine Stewardship Council and Aquaculture Stewardship Council. Procuring from sustainable companies such as Global Oceanlink allows us to maintain or increase supply while minimizing the impact to the natural ecosystems from which these products are obtained.



Harvest from the RISE Herb Garden

## Food & Beverage

### RISE Herb Garden

At our RISE Herb Garden here at Marina Bay Sands, kitchen staff harvest an average of 600 grams of herbs a day. In line with our Sands ECO360 global sustainability strategy, RISE Herb Garden allows us to provide our guests with the freshest ingredients in our dishes. By using ingredients grown in-house, we reduce our 'Food Miles' – the size of our carbon footprint based on the distance your food travels from where it's produced to your plate.

### Features of the Garden:

No chemical fertilisers or pesticides are used in the Herb Garden. Instead, natural predators such as ladybugs are introduced to create a balanced ecosystem and naturally prevent pest infestations.

Our gardens are also planted as close to natural growth patterns as possible, with mutually benefitting plants grouped together to improve plant health. For example, our fruit trees are planted with Pandan to provide shade, and with the Indian Borage, which protects the soil.

### Grow Your Own Herb Garden at Epicurean Market

Guests at the Epicurean market brought home chilli seeds with instructions to grow them into their own herb garden. A simple chilli dip recipe was also included to enjoy the crop when ripe.



# Green Meetings

At Marina Bay Sands, every meeting is a green meeting. Launched in 2013, our ECO360 Meetings programme allows us to provide clients with responsible meeting practices as a commitment to minimizing our carbon footprint in accordance with our own global best practices and the Singapore Sustainable Meeting standards. With the ECO360 Meetings programme, we are able to provide clients with responsible meeting practices as part of our standard services at no additional cost.

## 57 EVENTS

took Harvest Menus in 2014

North Crystal Pavillion

## ITB Asia

### A Case Study in MICE

Marina Bay Sands hosted ITB Asia, Asia's premier travel trade show in both 2012 and 2014. Under our new green meetings initiative, ITB Asia 2014 sought to host a carbon neutral event. Our integrated resort's team helped ITB Asia achieve their goal of event carbon neutrality through a combination of efforts spanning the entire property. Reduction in emissions took place in a number of ways, from locally sourced food to the donation of booths from the event. Remaining emissions were offset by carbon credits, of which the proceeds went towards renewable energy projects in Indonesia and Malaysia and unused booth giveaways were donated to MBS' partner charity, Food from the Heart. ITB 2014 saw 8,000 participants with 1,800 hotel nights over a 5 day event.

With the introduction of new sustainable systems implemented within the 2 year gap, we managed to reduce our carbon footprint from 399 tonnes in 2012 to 262 tonnes, a 34.5% reduction. Some of these operational changes include a new interface system, lighting sensors in meeting rooms and the new Harvest menu.



Sustainable Meetings set-up



Chicken Tochon & Liver Pate from our Harvest Menu

*"With its all-in-one value proposition, including luxurious accommodation for attendees, world-class conferencing facilities and unparalleled leisure offerings, Marina Bay Sands is undoubtedly the ideal location for ITB Asia. The venue has provided us with an optimal business environment for our delegates and the team has been very efficient, responsive and accommodating with our requests. We have forged a great working relationship comprising a winning team, show format and location. It has certainly been a wonderful experience working with the Marina Bay Sands team this year, and we look forward to more years of excellence ahead."*

**Katrina Leung**

Executive Director, ITB Asia  
2014 29-30 October 2014



# ECO360 Meetings Programme

The Sands ECO360 Meetings Programme is a holistic approach to providing sustainable options to our meeting planners and clients. Our customisable programme offers options which can help our clients meet their sustainability priorities.



**1** Waste minimisation efforts offered including a zero waste component to your event. Recycling opportunities offered where possible.

**2** Our Green Harvest Menus offer sustainable food and beverage options sourced locally or regionally to reduce food miles and lower the emission of greenhouse gases during transportation.

**3** A dedicated service Team Member who helps clients coordinate all aspects of their sustainable meeting.

**4** Sub-metering of MICE floors allows organisers to effectively track energy usage across specific event spaces.

**5** Meeting room set-ups that help to reduce the impact of your event while communicating the sustainable goals of your event.

**6** The Event Impact Statement provides a comprehensive report covering energy and water consumption, recycling rate, carbon emissions and the highlights of sustainable initiatives. A credible tool to report the results to event attendees and other stakeholder groups.



# Earth Hour 2014

## Team Member Engagement Case Study:

This year's Earth Hour saw the highest levels of staff participation in any Team Member Engagement activity held at Marina Bay Sands. Team Member understanding of the importance of these events and the impact that their participation can have is growing each and every year. As Marina Bay Sands leads the market in sustainability efforts year round, Earth Hour has become the principle participation event in our annual calendar.

This year, Spiderman was our guest for the launch of Earth Hour to inspire our Team Members and remind us all that "with great power, comes great responsibility."



### I Will if You Will

This year, Team Members challenged 16 members of our senior management team to use their power to support Earth Hour.

Their pledges were decided by popular vote amongst Team Members. Team Members were only able to vote if they pledged to use their power too.

#### Senior Management Challenges:

I will "USE MY POWER" to...

- Turn off the air con in my office for one week
- Go vegetarian every Monday for 6 months
- Crush 1,000 plastic bottles
- Walk 1m for every 10 sheets of paper printed by my department in March
- Volunteer 10 hours at a local green event

#### Team Member Pledges:

I will "USE MY POWER" to...

- Use reusable bags for grocery shopping for a month
- Take 5 minute showers for a month
- Install at least 1 LED light bulb at home
- Sleep without air con for a week
- Participate in Earth Hour Walk in the Dark Event!

#### Participation

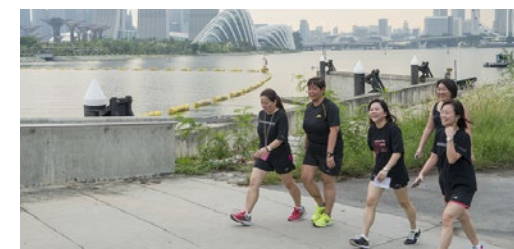
- 9,495 activities were recorded in total including multiple participation
- 44% of all Marina Bay Sands Team Members took part in at least one activity
- Unique participation of 4,127 Team Members

#### Team Member Walk In The Dark

A new initiative, Team Members walked 3.5km around Marina Bay on 29th March while experiencing the iLight festival. The walk ended at the floating platform, just in time to witness the switch off for Earth Hour.



Team Members Participate in Walk In the Dark 2014



Management participates in the Paper Walk Challenge

More information about Earth Hour is attached and can be found at:

<http://www.wwf.sg/?216904/Spider-Man-and-stars-to-lead-WWFs-largest-Earth-Hour-event-from-Singapore#>



# We Value Certification

At Marina Bay Sands we continuously strive to meet the highest standards of sustainable development and operational practices.

To provide a confidence to our stakeholders, including our internal Team Members and our guests that results we are producing meeting these standards we strive to achieve the highest level of third party certification available to our industry.

## Event Sustainability Management & Global Standards

February 2014: Marina Bay Sands is the first MICE facility in South East Asia to obtain the ISO 20121 Sustainable Events Management System certification. This certification is a testament to Marina Bay Sands' long-term commitment to environmental protection and sustainable event planning and puts Marina Bay Sands at the forefront in the MICE industry.

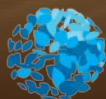
In 2013, we were the first building outside of the United States to achieve the APEX/ASTM Venue Level One certification. The APEX/ASTM is a standard for environmentally sustainable meetings created through a partnership of the Convention Industry Council's APEX initiative and ASTM international.

## EarthCheck Silver

In 2014, the entire operations at Marina Bay Sands was certified silver after passing stringent benchmarking of its sustainability practices. We are the first integrated resort of this scale and complexity to be benchmarked and audited by EarthCheck, the world's leading sustainability and benchmarking organisation with members across more than 70 countries. Ensuring sustainability is an integral part of the daily operations here at Marina Bay Sands and we take an active and long term approach towards reducing our impact on the environment. Achieving the EarthCheck Silver Certification speaks volumes of our commitment towards building a green culture at Marina Bay Sands and influencing our partners and visitors to do the same.

## Public Utilities Board Certified

In 2011, the Public Utilities Board (PUB) certified Marina Bay Sands with "Water Efficient Building (Basic)" for our water conservation efforts. We aim to achieve "Water Efficient Building (Gold)" certification by 2015.



EARTHCHECK



BCA GREEN MARK




SEMS 607590



*\*EarthCheck is an internationally recognised environmental management system that evaluates economic, social and environmental impact. It uses internationally recognised criteria to report on management performance covering a wide range of areas including environment, risk and quality management.*

*\*\*The BCA Green Mark Scheme was launched in January 2005 by Singapore's Building Construction Authority (BCA) as a programme to drive the nation towards more environment-friendly buildings through internationally recognised best practices in environmental design and performance.*





## Contact Us

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Online: [www.marinabaysands.com/sustainability](http://www.marinabaysands.com/sustainability)

or for more details, download our annual sustainability report  
at [sands.com/sands-eco-360/our-strategy.html](http://sands.com/sands-eco-360/our-strategy.html)

Global Reporting Initiative: Sands ECO360 2014 report  
[sands.com/css/sands-eco-360/pdf/2014-GRI-Index.pdf](http://sands.com/css/sands-eco-360/pdf/2014-GRI-Index.pdf)

**Sands**  
ECO 360°

MARINA BAY **Sands**  
SINGAPORE