



MARINA BAY *Sands*[®]
SINGAPORE



Best Measurement Tool for Effective Results
Sands Expo and Convention Centre at Marina Bay Sands, Singapore

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Marina Bay Sands is Asia's leading destination for business, leisure and entertainment.

Home to Singapore's largest meeting and convention space.

Over 2,500 breathtaking rooms and suites and world class shops, dining and entertainment all under on roof.

Introduction

Voted Best Business City and Top Meeting City in Asia.

The following places can be reached within minutes of driving from Marina Bay Sands.

With over 5,000 flights weekly, connecting to over 200 cities worldwide

Marina Bay Sands is a 20-minute drive from Changi International Airport and minutes from Central Business District, in addition to popular cultural spots like Chinatown, Little India and the Merlion.

TOURIST ATTRACTIONS

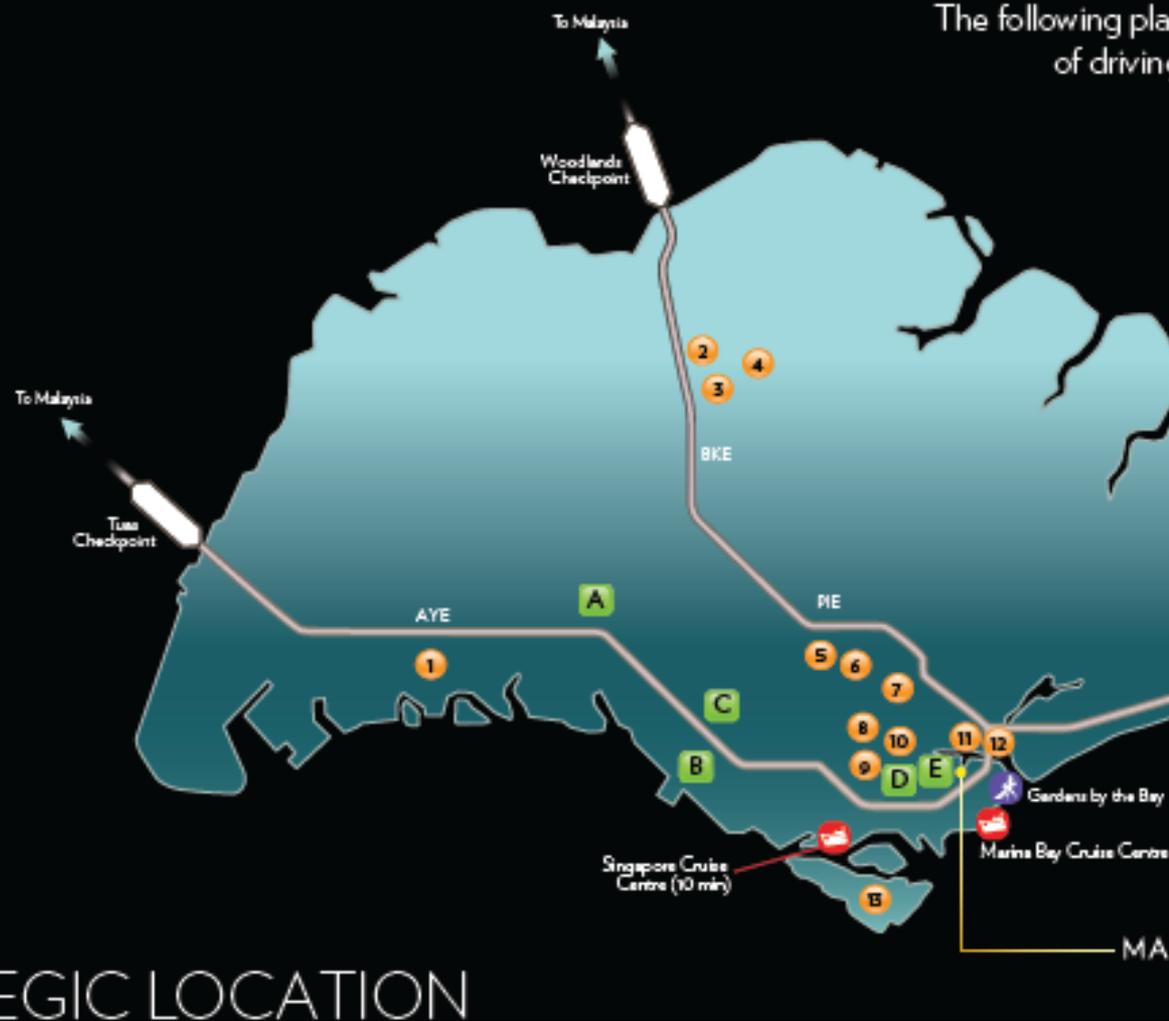
- 1 Jurong Bird Park (20 min)
- 2 Mandai Orchid Garden (30 min)
- 3 Singapore Zoological Gardens (10 min)
- 4 Night Safari (30 min)
- 5 Singapore Botanic Gardens (15 min)
- 6 Orchard Road (10 min)
- 7 Little India (10 min)
- 8 Clarke Quay (5 min)
- 9 Chinatown (5 min)
- 10 Boat Quay (5 min)
- 11 The Merlion (5 min)
- 12 Singapore Flyer (10 min)
- 13 Sentosa (15 min)

BUSINESS HUBS

- A International Business Park (20 min)
- B Singapore Science Park (10 min)
- C One North (15 min)
- D Central Business District (5 min)
- E Marina Bay Financial Centre (5 min)
- F Changi Business Park (20 min)

- AYE Ayer Rajah Expressway
- BKE Bukit Timah Expressway
- PE Pan Island Expressway
- ECF East Coast Parkway Expressway

Map is not drawn to scale



A STRATEGIC LOCATION

HEART OF SINGAPORE

BUSINESS AS YOU LIKE IT





Sands Expo and Convention Centre is Singapore's largest and most versatile exhibition and meeting space.

Featuring 250 meeting rooms, Southeast Asia's largest ballroom and the capacity for 2,000 exhibition booths.

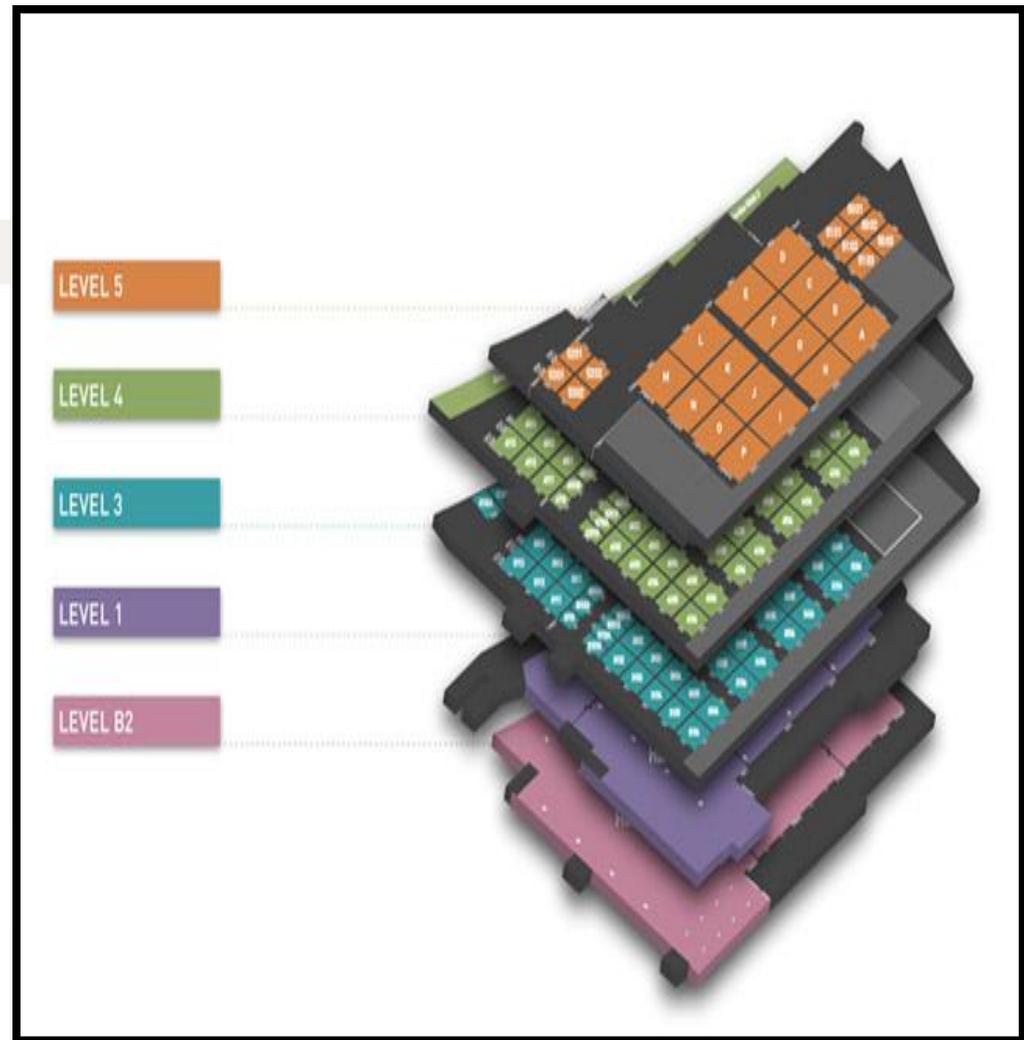
BUILT FOR MICE

SAND EXPO AND CONVENTION CENTER

The rooms are spread over 5 levels:

- 250 meeting rooms
- 2,000 exhibition-booth capacity
- Able to accommodate 45,000 delegates

It has the largest ballroom in Southeast Asia which is able to accommodate 11,000 attendees or 6,000 in a banquet



MARINA BAY SANDS GREEN ACCOLADES



- First property in Asia to achieve Level One of the ASTM Standard pertaining to the Evaluation and Selection of Venues for Environmentally Sustainable Meetings, Events, Trade Shows, and Conferences in June 2013 (GMIC and iCompli verified)
- First MICE facility in South East Asia to obtain the ISO 20121 Sustainable Events Management System certification in February 2014
- Single largest building in Singapore to be conferred the Green Mark Gold Award by the Building and Construction Authority (BCA) in 2012
- Achieved EarthCheck Bronze award in August 2011

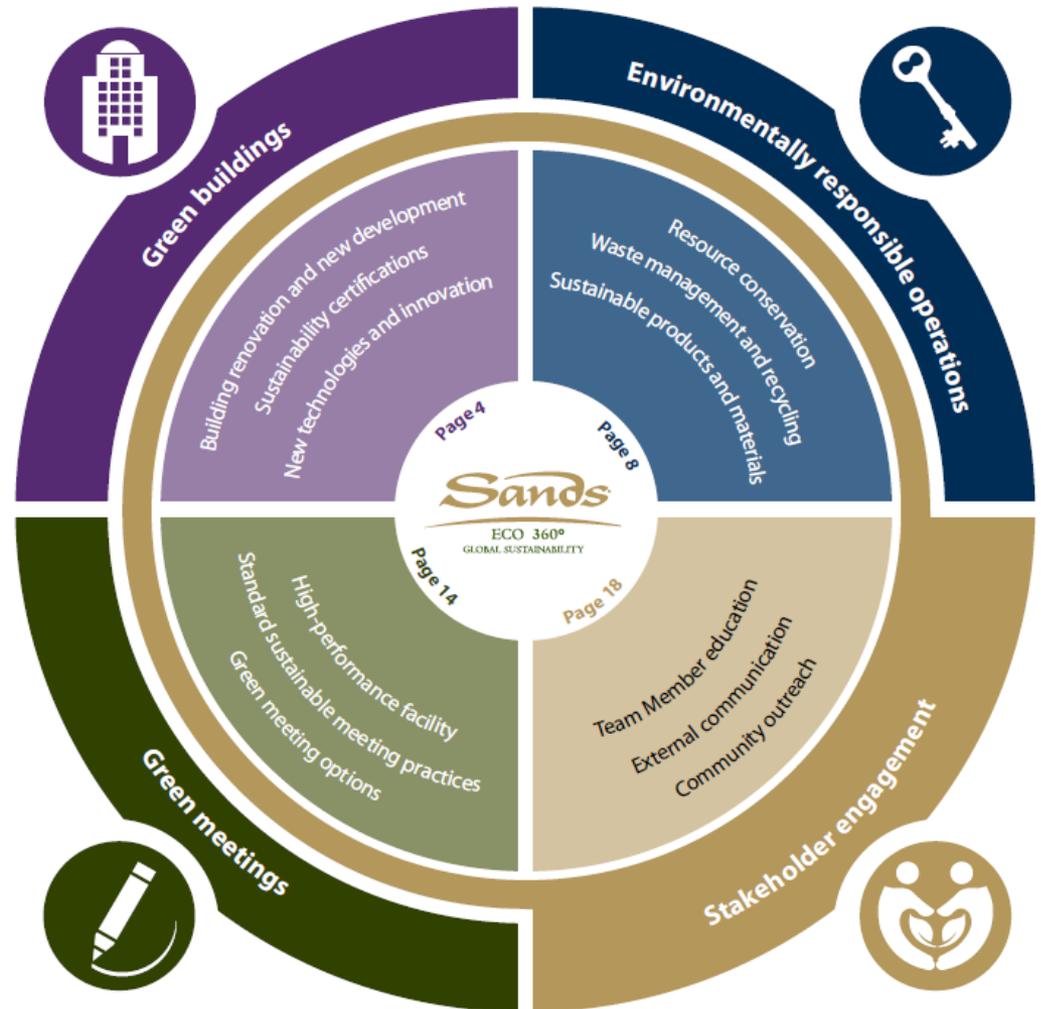
SANDS ECO360 PROGRAM HAS 4 PILLARS

Sustainability is drive through our **Sands ECO360 program** - a global sustainability strategy that includes all of Las Vegas Sands' businesses.

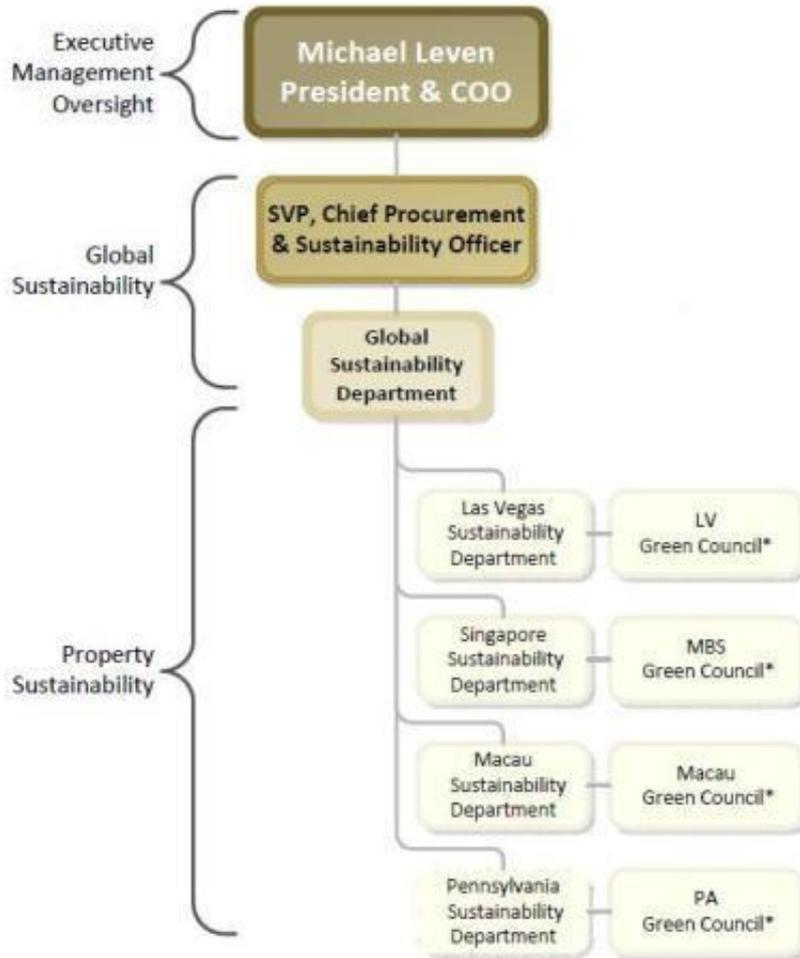
The program integrates the company's best practices, technologies and methodologies in sustainability across all properties.

4 Pillars:

- **Green Buildings**
- **Green meetings**
- **Environmentally responsible operations**
- **Stakeholder engagement**



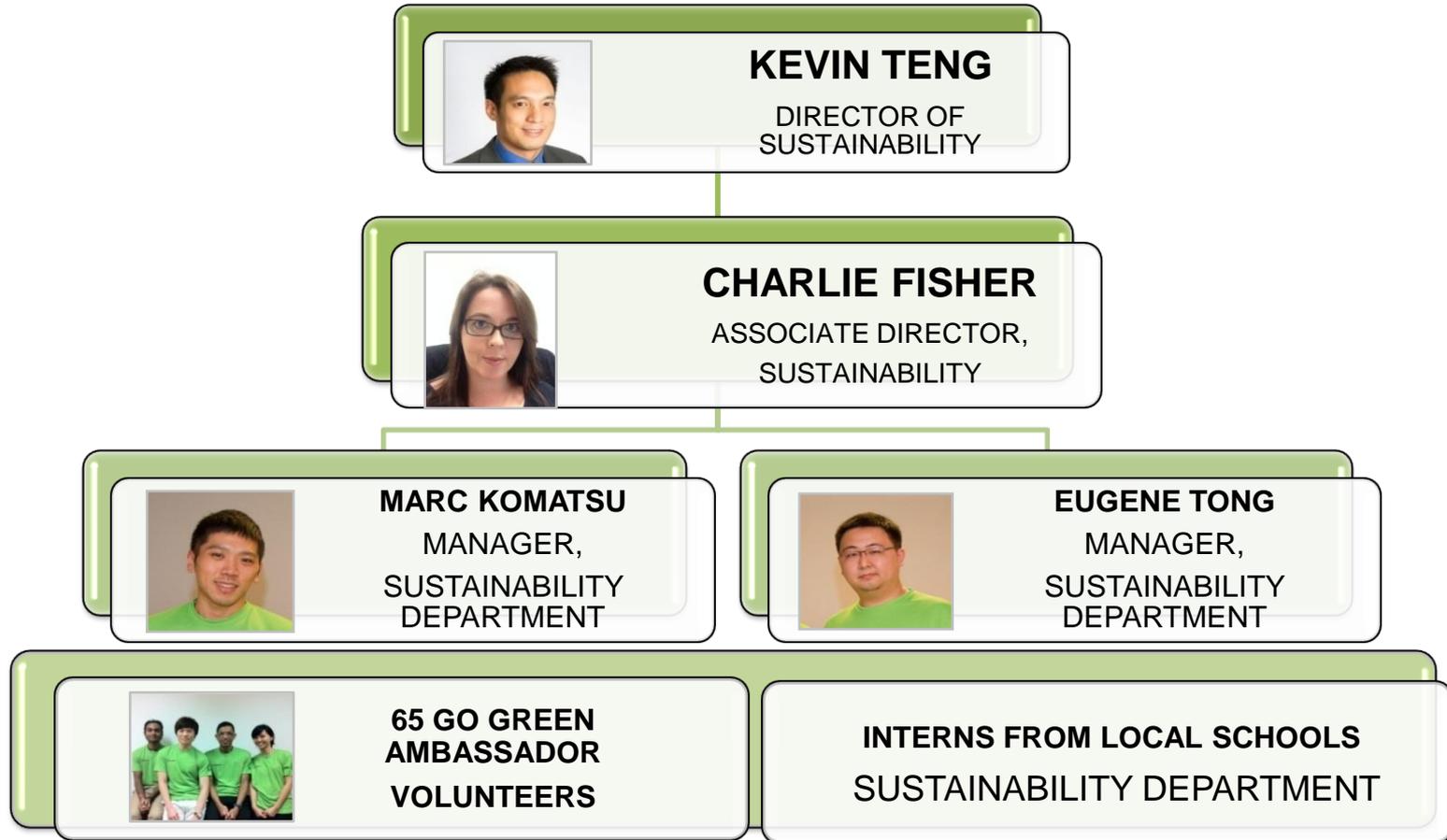
SANDS ECO360°: EXECUTIVE INVOLVEMENT



- President and Chief Operating Officer drives the overall strategy for Sands ECO360°
- Senior Vice President, Chief Procurement & Sustainability Officer leads the Global Sustainability Department, which develops and implements the strategy.
- Property Sustainability departments execute the sustainability strategy and identify future opportunities.

ECO360 Leadership Structure

Marina Bay Sands has a dedicated Sustainability team that reports weekly to the Chief Operating Officer and is governed by a Steering Committee that is chaired monthly by the Senior Vice President of Operations.



SANDS ECO 360 GREEN MEETINGS



348,000

cubic metres of water are saved each year by using low-flow sinks and dual-flush toilets across the property

RAINWATER

is collected on the roof of our ArtScience Museum for use as flush water in the building

60,000+

control points are used to manage building operations

2,000

tonnes of aluminium, plastic, paper, cardboard and glass are recycled each year

EARTHCHECK

Marina Bay Sands is the largest EarthCheck bronze benchmarked building in Asia

250

trees planted on Marina Bay Sands' green roof at Sands SkyPark®

GREEN MARK GOLD

Marina Bay Sands is the largest Green Mark Gold building in Singapore

50%+

of lighting in our Meetings, Incentives, Conferences and Exhibitions (MICE) space uses the latest LED technology

Green Meetings

As an environmentally responsible venue, Marina Bay Sands provides meeting organisers with sustainable options to achieve their green meeting goals.

Sustainable practices offered through Sands Eco360 include:

- **Green Meeting Concierge**, a dedicated service personnel who will help clients craft sustainable meetings using the **Sands ECO360 Meetings Planning Tool**.
- **Sands ECO360 Event Impact Statement** provides a post-event sustainability report that captures an event's sustainability highlights and provides a comprehensive summary of energy and water consumption at a glance.
- **Green Harvest Menu** offers sustainable food and beverage options for meeting organisers.

SANDS ECO360 GREEN MEETINGS



Program structure

Green meeting options:

- Menu of additional green meeting options for clients who want to go above and beyond in hosting a green conference.
- Understand clients' sustainability goals and develop a customized implementation plan for their event.

Standard sustainable practices: All meeting clients benefit from our standard sustainable practices, which are seamlessly incorporated into our operations.

High performance facility: Our buildings have received third-party environmental certifications which demonstrate our focus on conservation of natural resources and improvement of occupants' health and comfort. High-performance facilities provide a foundation for a successful green meetings program.

Let's all do our part for a greener Earth!

Sands

ECO 360°
GLOBAL SUSTAINABILITY



BCA GREEN MARK



SINGAPORE
GREEN
BUILDING
COUNCIL



EARTHCHECK

SANDS ECO 360 GREEN MEETINGS

Standard sustainable practices

All meeting clients benefit from our standard sustainable practices, which are seamlessly incorporated into our operations.

These practices include:

- ✓ resource conservation procedures (e.g. equipment and lighting shutdown in unoccupied spaces)
- ✓ waste diversion (e.g. recycling, composting, donation programme, partnership with Food From The Heart)
- ✓ indoor air quality management (e.g. green cleaning, CO² monitoring)
- ✓ responsible purchasing (e.g. reduced packaging, office supplies with recycled content)
- ✓ sustainable banquet practices (e.g. reusable china and silver ware, compostable service ware)

Green meeting options

Additional green meeting options to help clients go above and beyond when hosting a green conference.

These additional options include:

- post-event Impact Statement with carbon footprint calculation
- community volunteering programmes
- post-event donation programme to local charities
- Sands ECO360° property tours
- carbon offsets
- sustainable food options (e.g. sustainable seafood, local and/or organic food, Fair Trade certified coffee, water stations).



RESPONSIBLE
BUSINESS





**Best Measurement
Tool for Effective
Results**

**Sands Expo and
Convention Centre
at Marina Bay
Sands, Singapore**

Issue Identification and Strategic Philosophy

HOW THE ISSUE WAS IDENTIFIED

Two convergent strategies were highlighted to senior management as energy consumption at Sands Expo and Convention Center (SECC) became an opportunity for competitors:

1. The Sustainability team conducted an extensive stakeholder engagement exercise during our ISO20121 certification process
 - Energy conservation was highlighted as a core issue at SECC due to its large footprint and variable load
 - Stakeholders often noted that Singapore lacks natural resources and has a challenging climate
 - Lack of detailed data for team members to solve the issue
2. SECC conducted an energy benchmarking exercise through Earthcheck certification
 - Discovered that our energy benchmark was slightly over average by about 20% worse when compared to best practice competitors



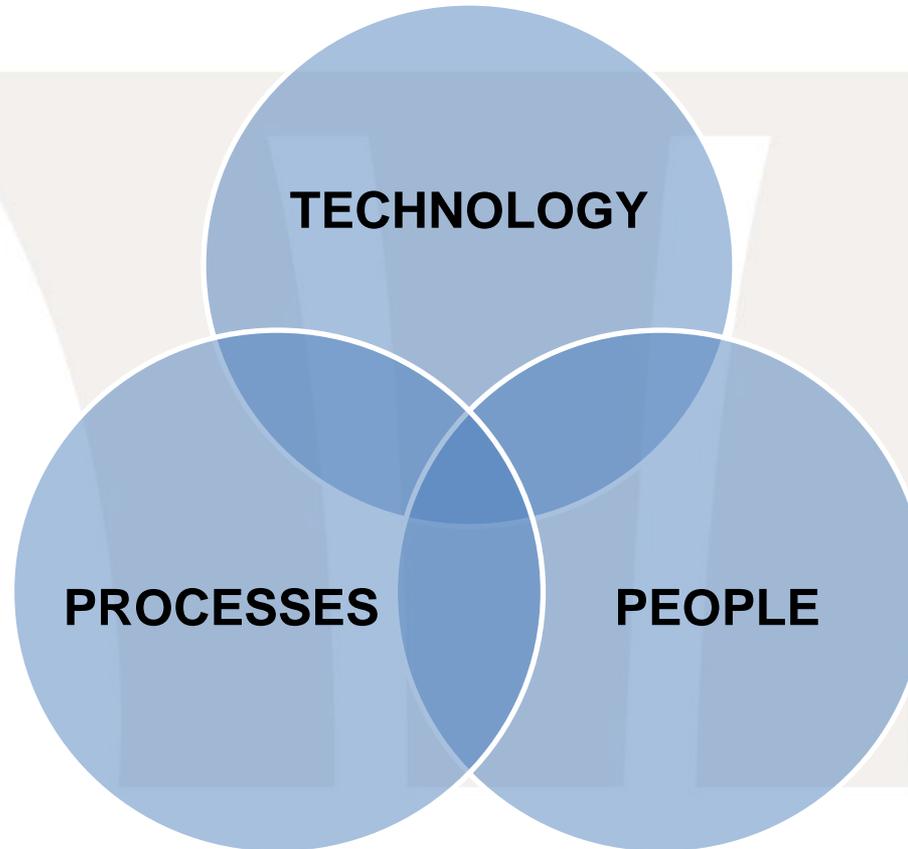
SEMS 607590

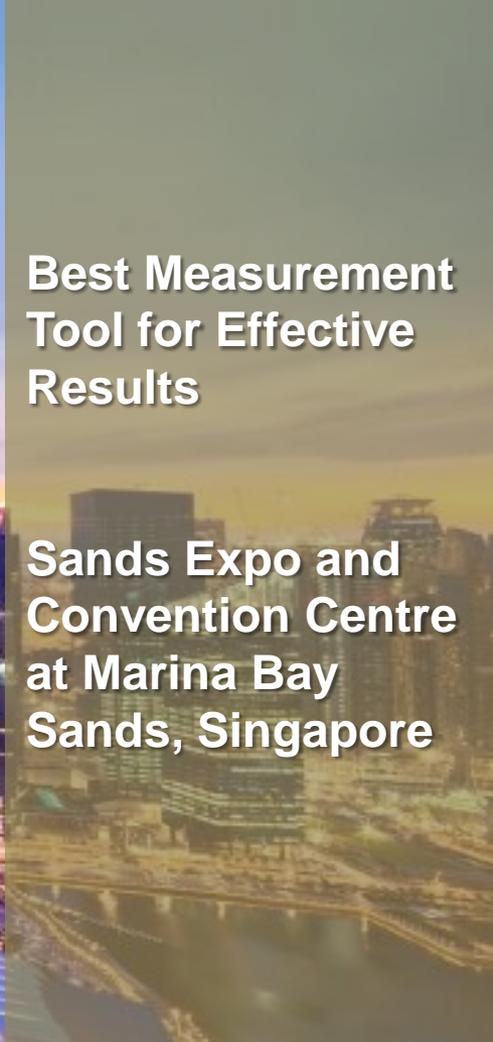


EARTHCHECK

OUR STRATEGIC PHILOSOPHY

The most effective solutions must combine Technology, People, and Processes.

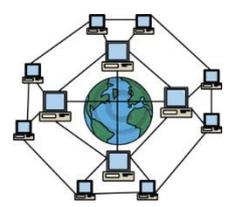




**Best Measurement
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**Sands Expo and
Convention Centre
at Marina Bay
Sands, Singapore**

Technology

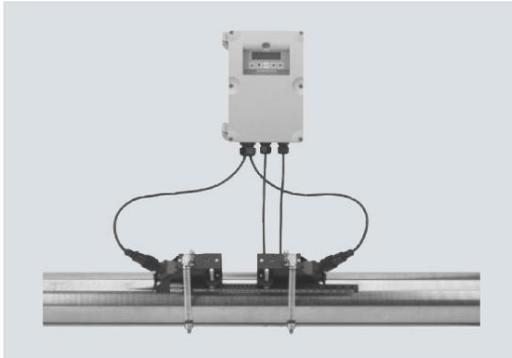


PB108433



Schneider Power Meter Series PM3200

Specifications	PM3200 Range
Type of measurement	True rms up to the 15th harmonic on three-phase (3P,3P+N) and single-phase AC systems. 32 samples per cycle
Measurement accuracy	
Current with x/5A CTs	0.3% from 0.5A to 6A
Current with x/1A CTs	0.5% from 0.1A to 1.2A
Voltage	0.3% from 50V to 330V (Ph-N), from 80V to 570V (Ph-Ph)
Power factor	±0.005 from 0.5A to 6A with x/5A CTs; from 0.1A to 1.2A with x/1A CTs
Active/Apparent Power with x/5A CTs	Class 0.5
Active/Apparent Power with x/1A CTs	Class 1
Reactive power	Class 2
Frequency	0.05% from 45 to 65Hz
Active energy with x/5A CTs	IEC62053-22 Class 0.5s
Active energy with x/1A CTs	IEC62053-21 Class 1
Reactive energy	IEC62053-23 Class 2
Data update rate	
Update rate	1s
Input-voltage characteristics	
Measured voltage	50V to 330V AC (direct / VT secondary Ph-N) 80V to 570V AC (direct / VT secondary Ph-Ph) up to 1MV AC (with external VT)
Frequency range	45Hz to 65Hz
Input-current characteristics	
CT primary	Adjustable from 1A to 32767A
CT secondary	1A or 5A
Measurement input range with x/5A CTs	0.05A to 6A
Measurement input range with x/1A CTs	0.02A to 1.2A
Permissible overload	10A continuous, 20A for 10s/hour
Control Power	
AC	100/173 to 277/480VAC (+/-20%), 3W/5VA; 45Hz to 65Hz
DC	100 to 300VDC, 3W
Input	
Digital inputs (PM3255)	11 to 40VDC, 24VDC nominal, <=4mA maximum burden, 3.5kVrms insulation
Output	
Digital output (PM3210)	Optocoupler, polarity sensitive, 5 to 30V, 15mA max, 3.5kVrms insulation
Digital outputs (PM3255)	Solid state relay, polarity insensitive, 5 to 40V, 50mA max, 50Ω max, 3.5kVrms insulation



SITRANS FST020 (Basic)

- The current chilled water metering that MBS is using

Technical specifications

Input

Flow range	± 12 m/s (± 40 ft/s), bi-directional
Flow sensitivity	0.0003 m/s (0.001 ft/s) flow rate independent

Digital Inputs

Totalizer Hold	Optically isolated diode Input voltage: 2 ... 10 V DC
Totalizer Reset	Optically isolated diode Input voltage: 2 ... 10 V DC

Output

Current	<ul style="list-style-type: none"> • 4 ... 20 mA (Isolated) • externally powered 10 ... 30 V DC
Relay	<ul style="list-style-type: none"> • Programmable Form C 250 mA • 30 V DC • 3 V A max
Pulse rate	<ul style="list-style-type: none"> • Optically isolated transistor 10 mA • 30 V DC max

Accuracy

Accuracy	for velocities ≥ 0.3 m/s (1 ft/s)
• 4 ... 20 mA	± 1.0 % ... 2.0 % of flow
• Pulse, relay output	± 0.5 % ... 1.0 % of flow
Batch repeatability	± 0.15 %
Zero Drift	0.1 % of rate; 0.0003 m/s (0.001 ft/s)
Data refresh rate	5 Hz

Transmitter conditions

Operating temperature	-10 ... +50 °C (14 ... +122 °F)
Storage temperature	-20 ... +60 °C (-4 ... +140 °F)
Degree of protection	IP65 NEMA 4X

Design

Weight	1,4 kg (3.0 lbs)
Dimensions (W x H x D)	175 x 235 x 92 mm (6.89 x 9.25 x 3.62 inches)
Enclosure material	Polycarbonate

Power supply

	100 ... 240 V AC @ 15 VA or 11.5 ... 28.5 V DC @ 10 W
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Certificates and approvals

Unclassified locations	UL, UL _c
Classified locations	
CE	EMC Directive 2004/108/EC LVD Directive 2006/95/EG C-TICK

SMART TECHNOLOGY

Sub-metering and energy dashboard

- Over 164 electricity and btu sub-meters installed across property:
- Energy dashboard for real-time viewing consumption so that data can be verified easily and accurately
- The dashboard is provided via the company intranet for Team Members to access

The screenshot displays the 'Energy Reports' interface for Marina Bay Sands Singapore. The main title is 'Hourly Peak/Off-peak Electrical Energy Consumption'. The user is viewing data for 'Location: MICE' and 'Level: L3'. The meter selected is 'Total Electrical Energy Usage @ L3 MICE'. The time period is from 02/03/2014 00:00:00 to 09/03/2014 19:00:00.

Date and Time	Start Reading Kilo Watt Hour (kWh)	End Reading Kilo Watt Hour (kWh)	Consumption Kilo Watt Hour (kWh)	Actual Measured Value			Substitution Value Applied		
				Peak Charge	Off-peak Charge	Total Charges (\$)	Peak Charge	Off-peak Charge	Total Charges (\$)
				\$0.2236 /kWh	\$0.1377 /kWh		\$0.2236 /kWh	\$0.1377 /kWh	
02-Mar-14 12:00AM	38,223,660.00	38,224,400.00	740.00	\$0.00	\$101.90	\$101.90	\$0.00	\$101.90	\$101.90
02-Mar-14 01:00AM	38,224,400.00	38,225,150.00	750.00	\$0.00	\$103.28	\$103.28	\$0.00	\$103.28	\$103.28
02-Mar-14 02:00AM	38,225,150.00	38,225,900.00	750.00	\$0.00	\$103.28	\$103.28	\$0.00	\$103.28	\$103.28

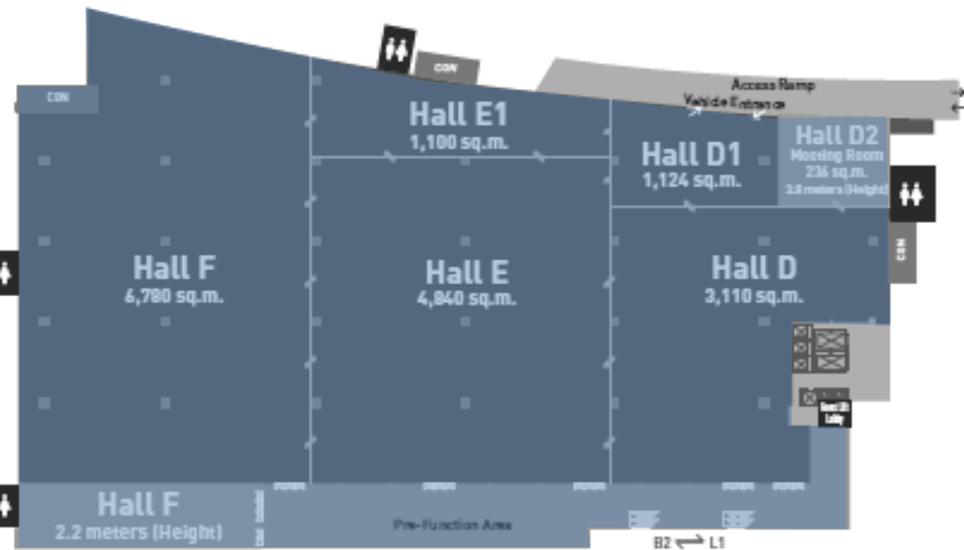
ELECTRICAL METERING IN MICE

EXHIBITION HALLS ON

B2

Floor Area 17,190 sq.m.

- MICE – B2 - 01
- MICE – B2 - 02
- MICE – B2 - 03
- MICE – B2 - 04
- MICE – B2 - 05
- MICE – B2 - 06
- MICE – B2 - 07
- MICE – B2 - 08
- MICE – B2 - 09
- MICE – B2 - 10
- MICE – B2 - 11
- MICE – B2 - 12
- MICE – B2 - 13
- MICE – B2 - 14



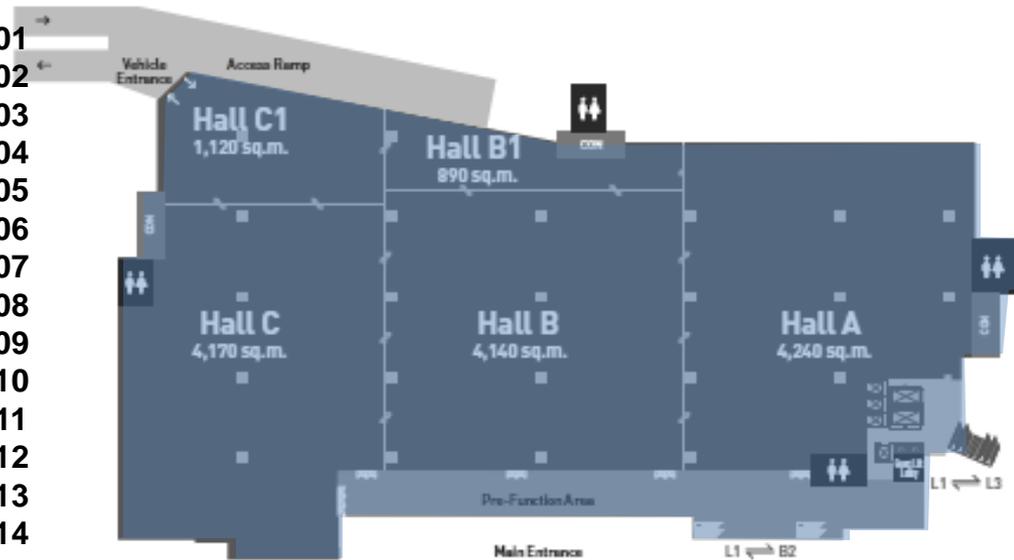
ELECTRICAL METERING IN MICE

EXHIBITION HALLS ON

L1

Floor Area 14,560 sq.m.

- MICE - L1 - 01
- MICE - L1 - 02
- MICE - L1 - 03
- MICE - L1 - 04
- MICE - L1 - 05
- MICE - L1 - 06
- MICE - L1 - 07
- MICE - L1 - 08
- MICE - L1 - 09
- MICE - L1 - 10
- MICE - L1 - 11
- MICE - L1 - 12
- MICE - L1 - 13
- MICE - L1 - 14



ELECTRICAL METERING IN MICE

BALLROOMS ON

L3

- MICE - L3 - 01
- MICE - L3 - 02
- MICE - L3 - 03
- MICE - L3 - 04
- MICE - L3 - 05
- MICE - L3 - 06
- MICE - L3 - 07
- MICE - L3 - 08
- MICE - L3 - 09
- MICE - L3 - 10
- MICE - L3 - 11
- MICE - L3 - 12
- MICE - L3 - 13
- MICE - L3 - 14

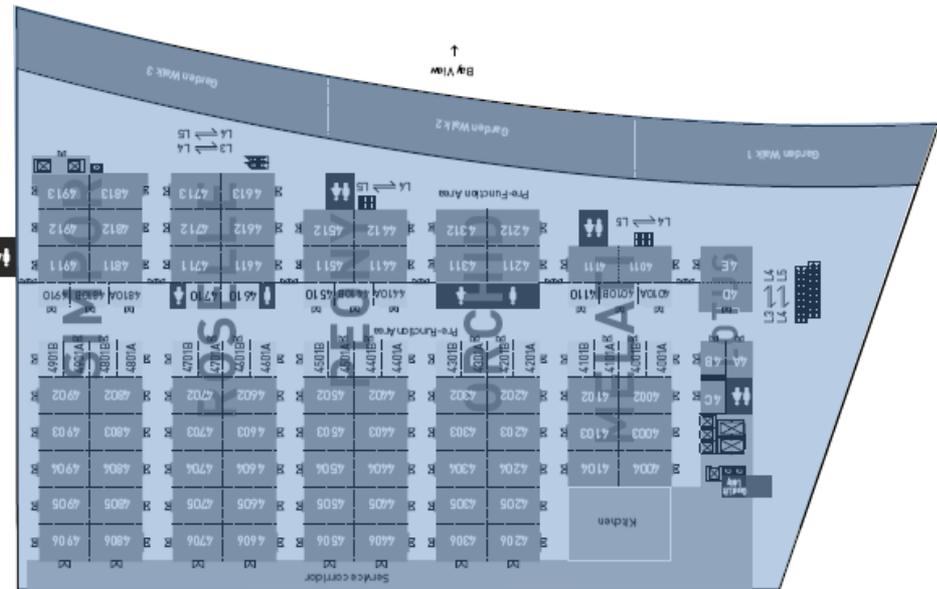


ELECTRICAL METERING IN MICE

BALLROOMS ON

L4

- MICE - L4 - 01
- MICE - L4 - 02
- MICE - L4 - 03
- MICE - L4 - 04
- MICE - L4 - 05
- MICE - L4 - 06
- MICE - L4 - 07
- MICE - L4 - 08
- MICE - L4 - 09
- MICE - L4 - 10
- MICE - L4 - 11
- MICE - L4 - 12
- MICE - L4 - 13
- MICE - L4 - 14

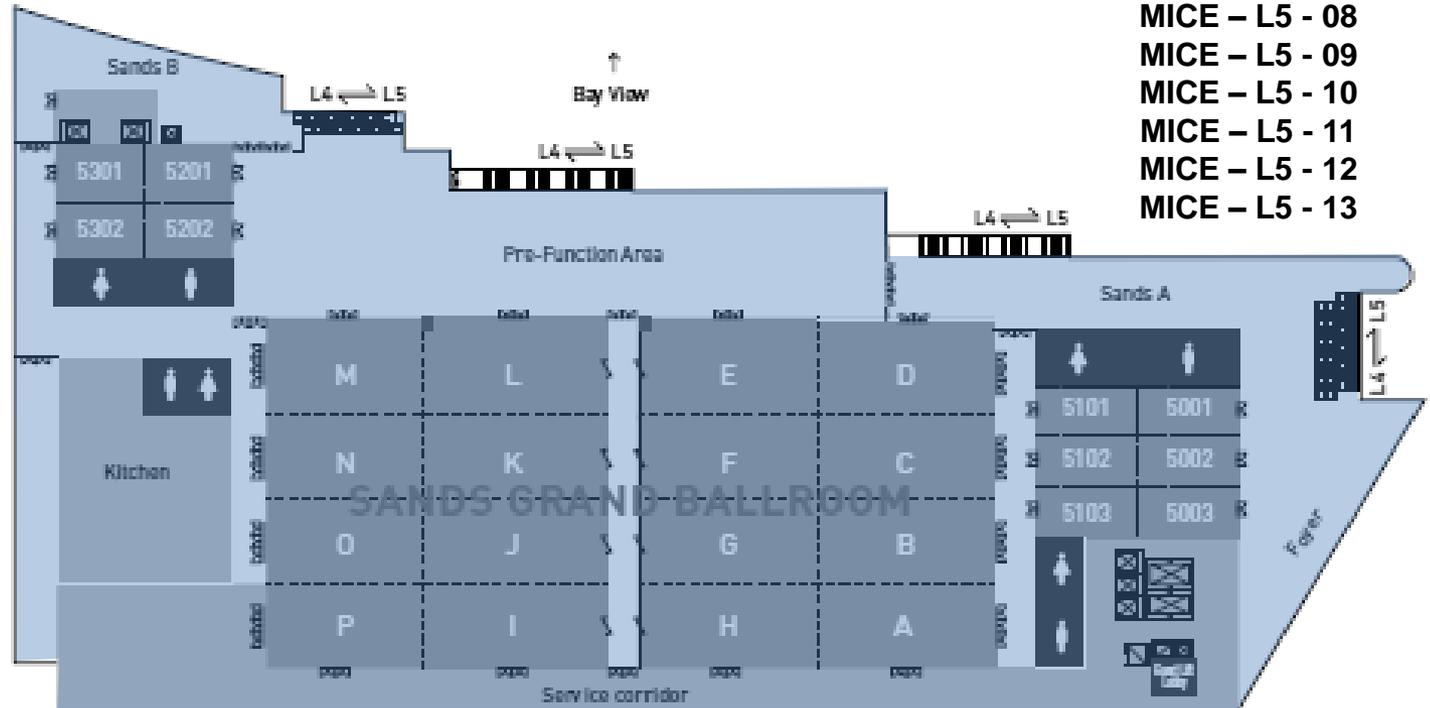


ELECTRICAL METERING IN MICE

- MICE – L5 - 01
- MICE – L5 - 02
- MICE – L5 - 03
- MICE – L5 - 04
- MICE – L5 - 05
- MICE – L5 - 06
- MICE – L5 - 07
- MICE – L5 - 08
- MICE – L5 - 09
- MICE – L5 - 10
- MICE – L5 - 11
- MICE – L5 - 12
- MICE – L5 - 13

BALLROOMS ON

L5

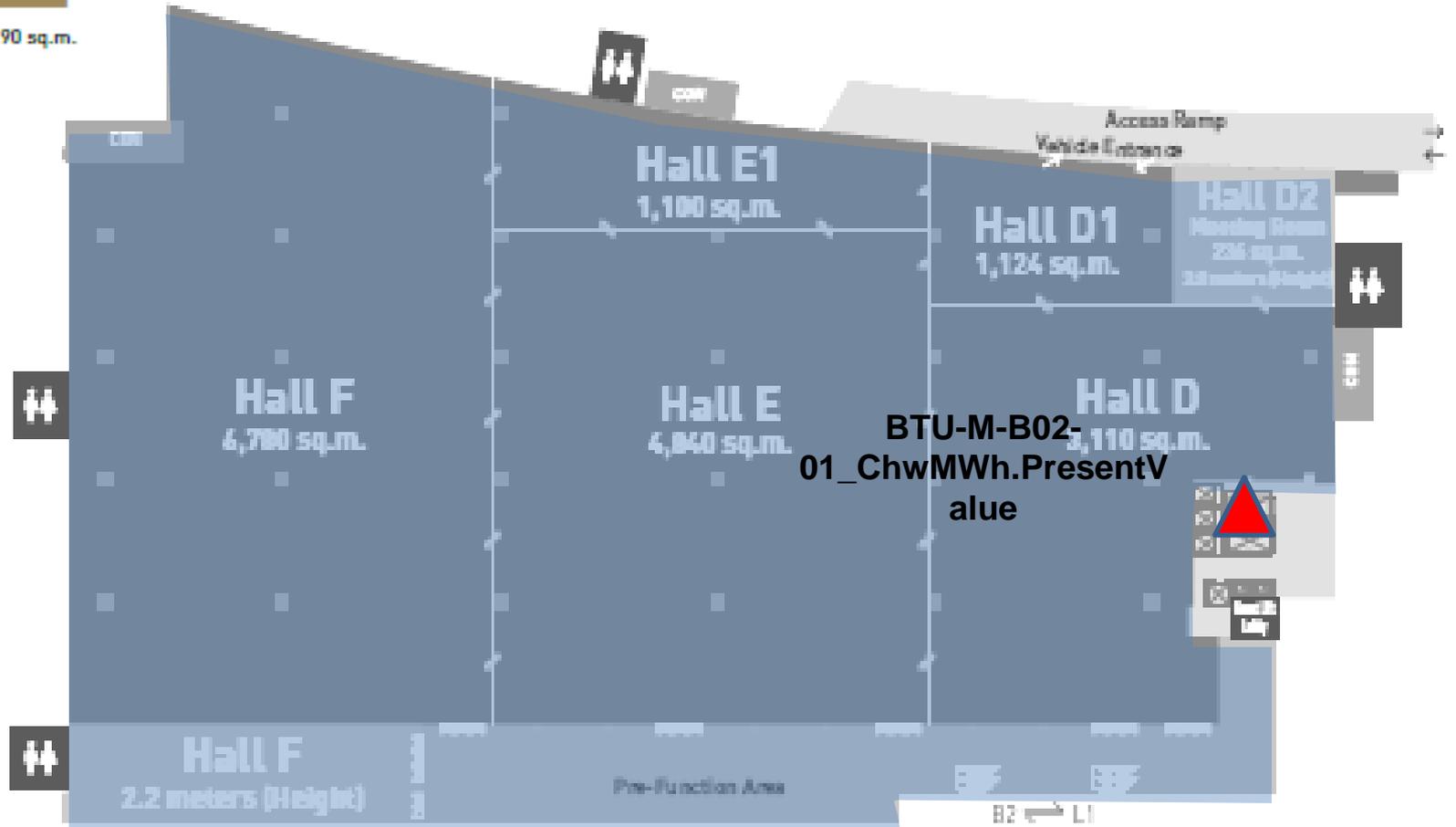


EXHIBITION HALLS ON

B2

Floor Area 17,190 sq.m.

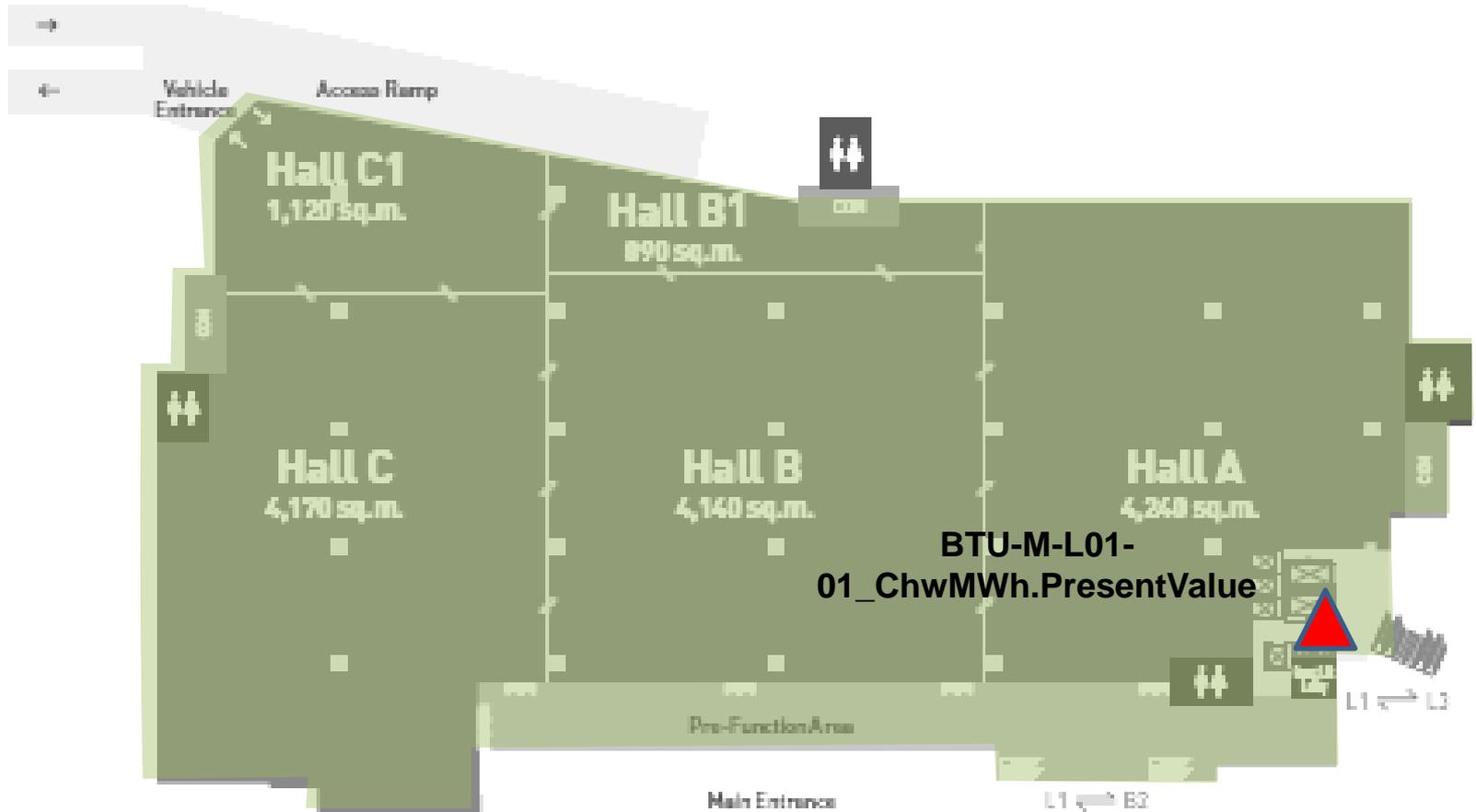
CHILLED WATER (AIR CONDITIONING) METERING IN MICE



L1

Floor Area 14,560 sq.

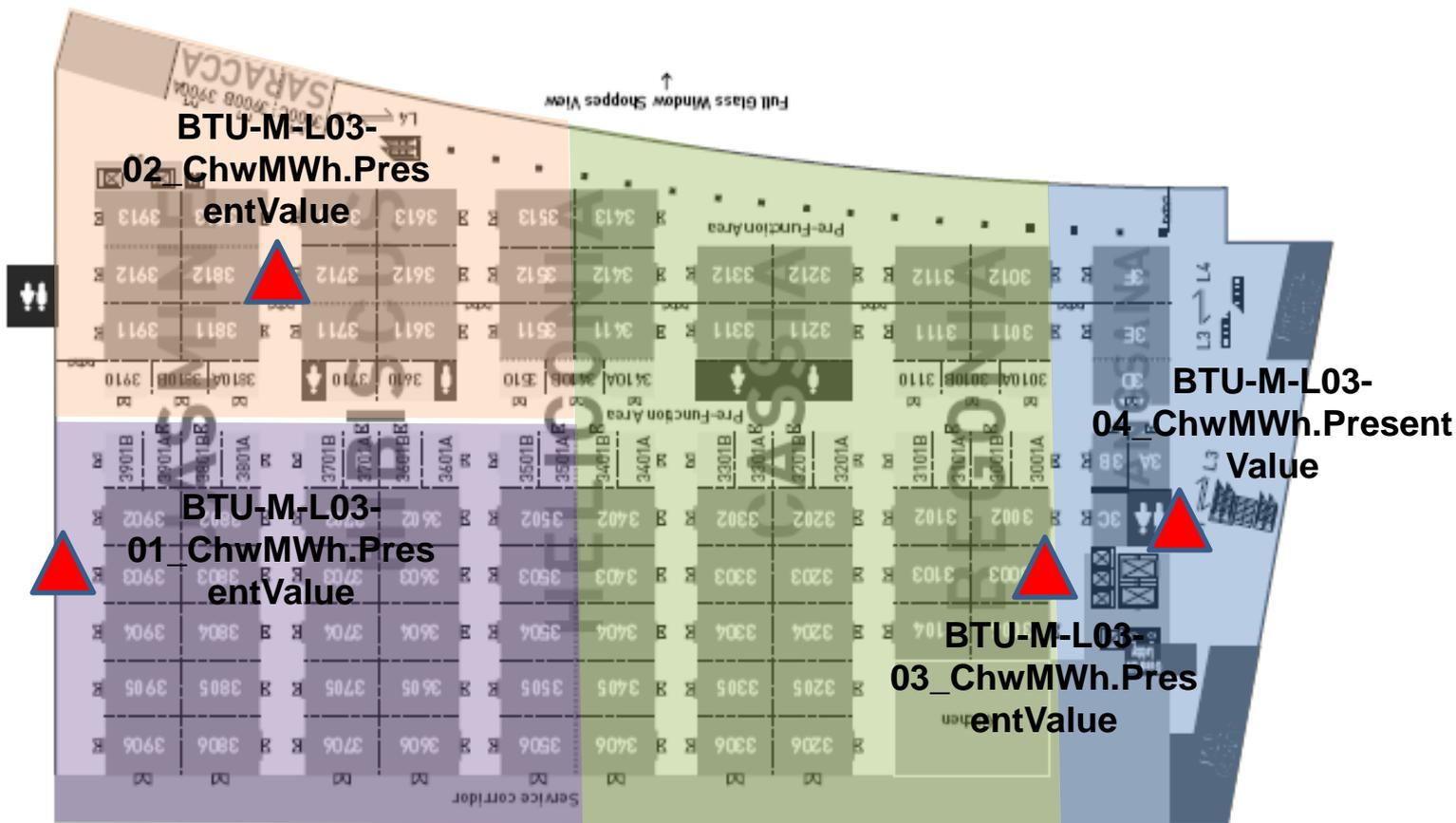
CHILLED WATER (AIR CONDITIONING) METERING IN MICE



CHILLED WATER (AIR CONDITIONING) METERING IN MICE

BALLROOMS ON

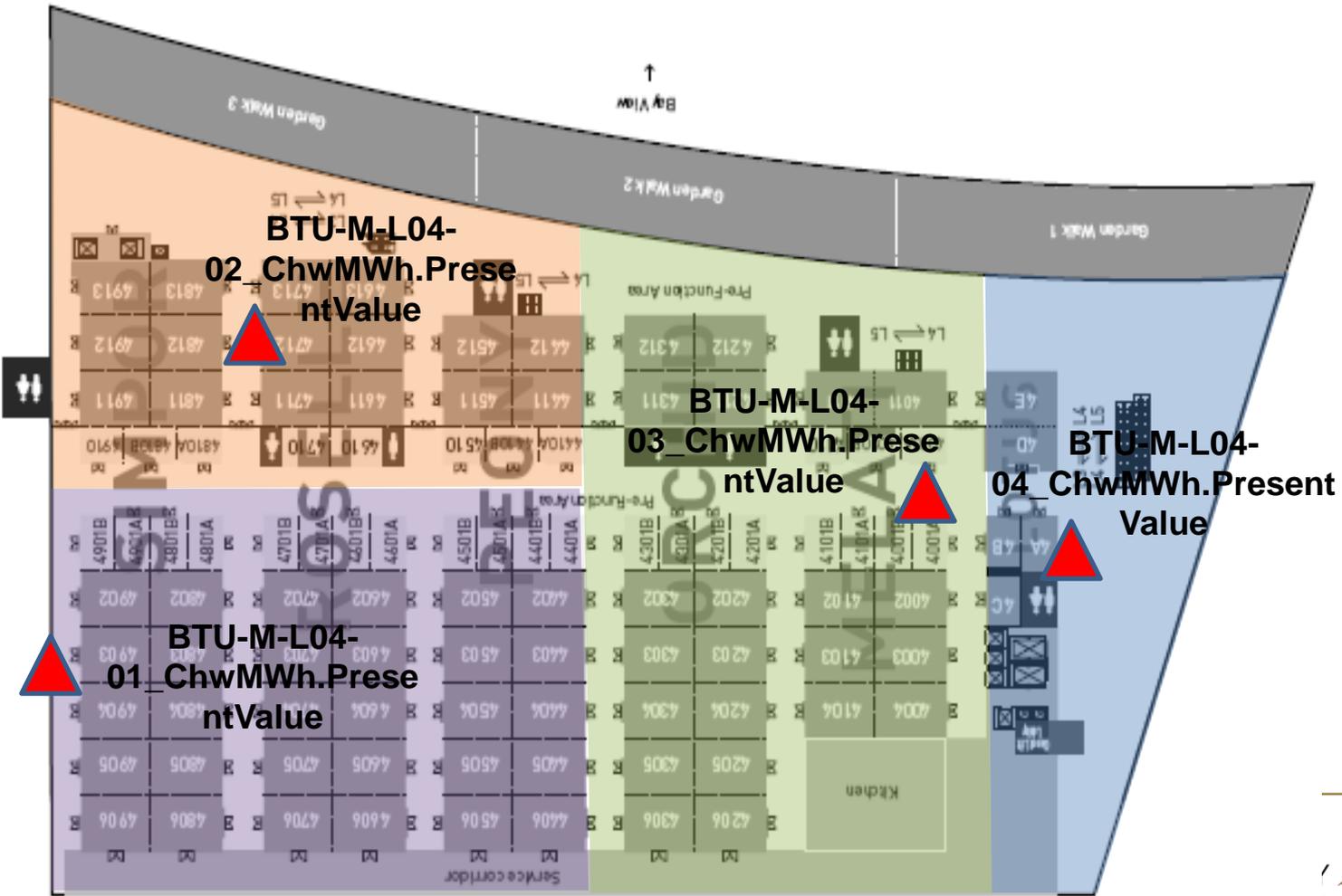
L3



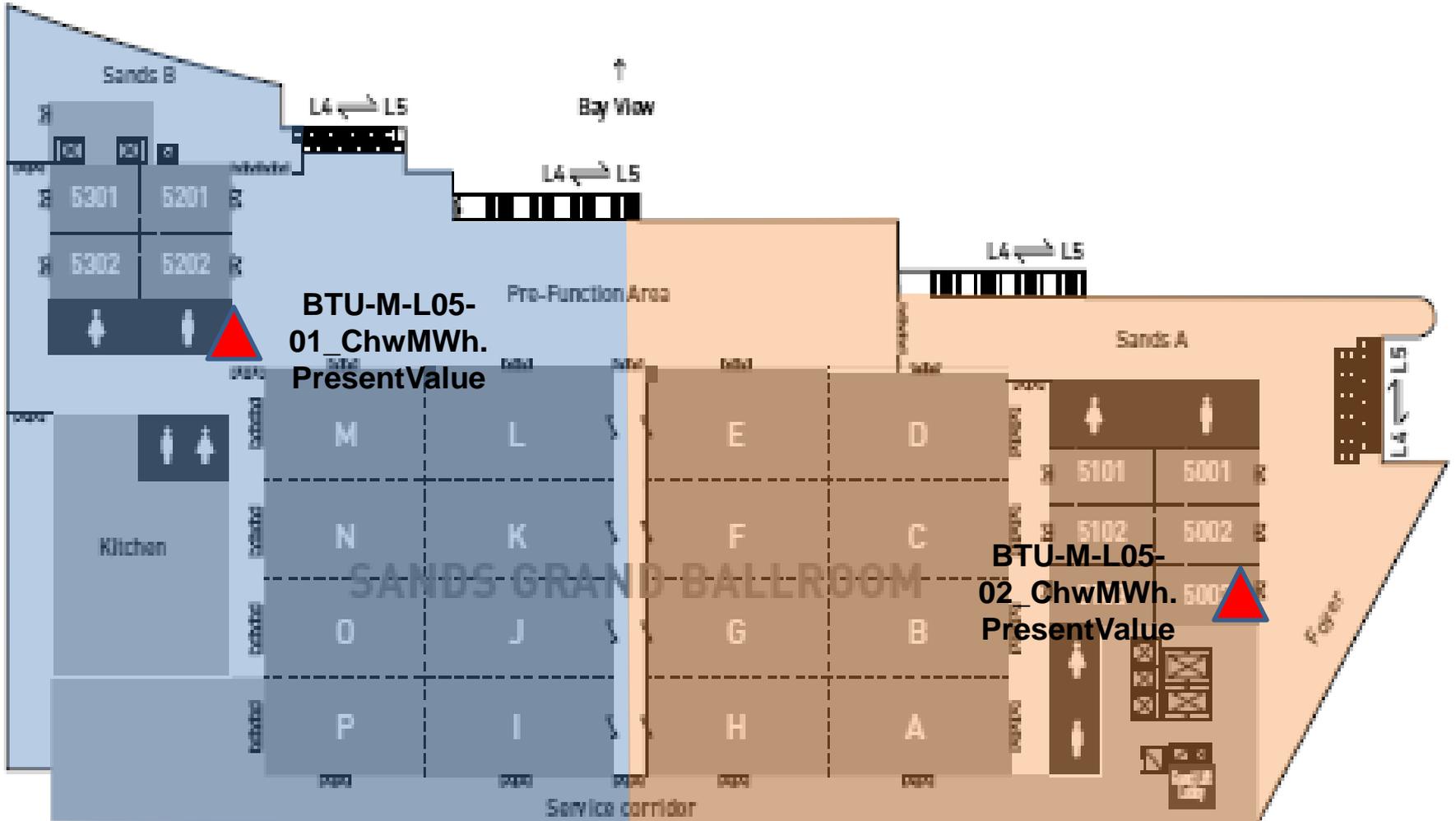
CHILLED WATER (AIR CONDITIONING) METERING IN MICE

BALLROOMS ON

L4

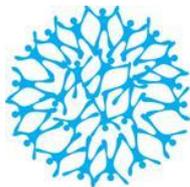


CHILLED WATER (AIR CONDITIONING) METERING IN MICE



IMPACT STATEMENT

- Impact statements are provided after events
- It includes energy, water, waste diversion and carbon footprint based on calculations
- This allows clients to benchmark themselves for future events
- It also allows Catering Conference Manager to better benchmark their own events



**RESPONSIBLE
BUSINESS FORUM
ON SUSTAINABLE
DEVELOPMENT**



Marina Bay Sands Eco360 Meetings Impact Statement Singapore



Marina Bay Sands			
Conference Overview			
Client:	MCI Group Asia Pacific Pte Ltd		
Event:	Responsible Business Forum on Sustainable Development		
Conference Dates:	25 September 2013 to 26 September 2013		
Total Conference Meeting Space Used (sq. m.)	7,880		
Economic			
Impacts	Key Performance Indicator	Value	GRI Indicator
Participation	Number of delegates	500	
Social			
Impacts	Key Performance Indicator	Value	GRI Indicator
Health and quality of air	Space designated smoke free in venue	No Cost	LA 8
Labour Rights	Employees covered by The Ministry of Manpower Employment Act	No Cost	LA 4
Local community	Local suppliers supported by event	100%	SO1
Environmental			
Impacts	Key Performance Indicator	Value	GRI Indicator
GHG emissions	Total carbon footprint (tonnes CO ₂ equivalent)*	10	EN 16, 17
	Venue based emissions (energy, waste)	10	EN 16, 18
	Emissions per delegate (tonnes CO ₂)	0.02	
Energy	Emissions offset required (USD)	\$122	EN 26
	Total electricity consumed (kWh)	5,012	EN 4
	Total chilled water (electricity) consumed (kWh)	8,369	EN 4
Water	Total diesel consumed (l)	0	EN 3
	Total water used - Hotel and MICE Facilities (m ³)	102	EN 8
	Total bottle water used (Reference: Similar 2-day event uses 2,300 bottles)	0	
Paper and materials usage	Total drinking water used (gallons) - Water Dispenser	50	
	Note pads used for event (A5 size sheets) (Reference: Similar 2-day event uses 1,150 notepads)	500	EN 1, 28
	Pens used for event (Reference: Similar 2-day event uses 1,100 pens)	400	EN 1, 28
Waste management	% of materials used that are recycled input materials (notepads, flipcharts)	100%	EN2
	Total waste from event (kg) excluding food	17	EN 22
	Total food waste from event (kg)	215	EN 22
	Total waste diverted from landfill (includes waste recycled or incinerated)	88%	EN 22

*Please note to compensate potential inaccuracies a 10% buffer has been added to the total.

PICTURE OF DASHBOARD AND SAMPLE ENERGY REPORTS

The screenshot shows the Marina Bay Sands Energy Reports dashboard. The main report is titled "Hourly Peak/Off-peak Electrical Energy Consumption" for location MICE, level L3, and meter "Total Electrical Energy Usage @ L3 MICE". The period is from 02/03/2014 00:00:00 to 09/03/2014 19:00:00. The report includes a table with columns for Date and Time, Start Reading, End Reading, Consumption (kWh), Actual Measured Value (Peak Charge, Off-peak Charge, Total Charges), and Substitution Value Applied (Peak Charge, Off-peak Charge, Total Charges).

Date and Time	Start Reading Kilo Watt Hour (kWh)	End Reading Kilo Watt Hour (kWh)	Consumption Kilo Watt Hour (kWh)	Actual Measured Value			Substitution Value Applied			
				Peak Charge \$0.2236 /kWh	Off-peak Charge \$0.1377 /kWh	Total Charges (\$)	Peak Charge \$0.2236 /kWh	Off-peak Charge \$0.1377 /kWh	Total Charges (\$)	
02-Mar-14 12:00AM	38,223,660.00	38,224,400.00	740.00	\$0.00	\$101.90	\$101.90	740.00	\$0.00	\$101.90	\$101.90
02-Mar-14 01:00AM	38,224,400.00	38,225,150.00	750.00	\$0.00	\$103.28	\$103.28	750.00	\$0.00	\$103.28	\$103.28
02-Mar-14 02:00AM	38,225,150.00	38,225,900.00	750.00	\$0.00	\$103.28	\$103.28	750.00	\$0.00	\$103.28	\$103.28

Year-To-Date ELEC consumption: (1 Apr - 23 Dec 2013)

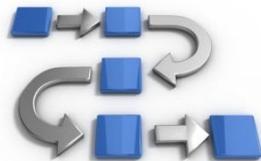
	Avg Hourly Consumption (SG\$)	Avg Hourly Consumption (kWh)	BASELINE MONTHLY CONSUMPTION	TARGET MONTHLY CONSUMPTION (@5% reduction)	YTD Monthly	% difference between Current and Baseline	Responsible Director
B2	\$159.75	779	\$136,740.07	\$129,903.07	\$118,850.80	-13%	Kim & Shanker
L1	\$83.44	407	\$78,239.30	\$74,327.34	\$62,082.76	-21%	Kim & Shanker
L3	\$176.78	862	\$138,522.97	\$131,596.82	\$131,521.54	-5%	Shirly
L4	\$121.99	595	\$98,895.35	\$93,950.58	\$90,760.69	-8%	Priscilla
L5	\$140.77	686	\$96,427.86	\$91,606.47	\$104,729.54	9%	Jamie and Ray
TOTAL	\$682.72	3,327	\$548,825.55	\$521,384.27	\$507,945.32	-7.4%	



**Best Measurement
Tool for Effective
Results**

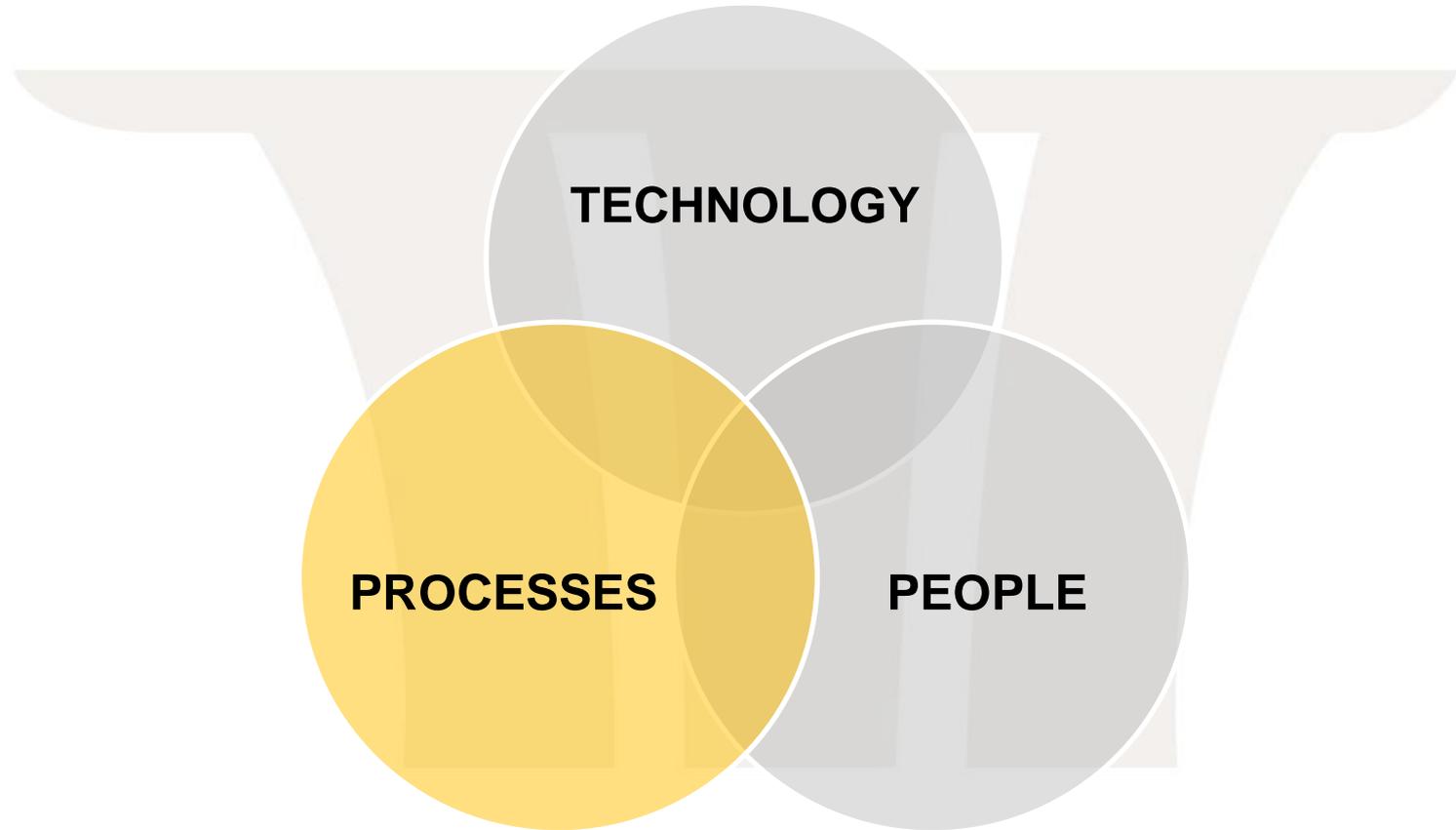
**Sands Expo and
Convention Centre
at Marina Bay
Sands, Singapore**

Processes



OUR STRATEGIC PHILOSOPHY

Repeatable and documented PROCESSES are critical to ensuring that the smart technology is used to its full potential.



CORE PROCESSES THAT HAVE MAXIMIZED USAGE OF THE TECHNOLOGY

SECC at Marina Bay Sands has implemented an **Event Sustainability Management System (ESMS)** in conformity with ISO20121.

Some of the key processes including:

- Issue Identification and Evaluation
- Nonconformity tracking
- Management Review
- Internal Audit
- Documentation



- The ISO 20121 certification has been driven by the senior management
- Each department has a **Sustainability Ambassador** to spread the environmental awareness and encourage ownership within departments
- Sustainability are part of the **SMART goals** for senior management in 2014-2015

Area	Objective
SOCIAL	Increase supply chain sustainability
	Increase impact and awareness of CSR activities
	Lead in documentation
	Increase awareness and understanding of sustainability amongst team members
	Provide a fair and rewarding environment for team members
ENVIRONMENT	Increase health and safety across MICE space
	Reduce our energy use
	Increase on property recycling
ECONOMIC	Increase our use of sustainable food on property
	Increase client awareness of sustainable meeting packages

ACCOUNTABILITY: OPERATIONS DIRECTORS ARE IN CHARGE OF EACH FLOOR

Each director is required to report on a weekly basis on causes of low or high energy consumption in SECC

	Responsibility
Basement 2 and Level 1	Kim Vodopich, Director of Exhibitions and Special Events Shanker, Director of Logistics and Business Services
Level 3	Shirly Chang, Director of Banquets
Level 4	Priscilla Lew, Director of Catering and Conference Management
Level 5	Jamie Pang, Director of Technical Services Ray Matyas, Director of Event Technical Ops

ACCOUNTABILITY

Energy issues are discussed in weekly meetings are documented to ensure accountability and that nonconformities are raised.

Date of Meeting: May 12, 2014 Monday

Time/ Venue: 1:30pm at Benny's MICE Office

Attendees: **Ray Matyas** - Director of Event Technical Operations
Priscilla Lew - Director of Catering & Conference Management
Shanker - Director of Logistics & Business Services
Jamie Pang - Director of Technical Services
Kimberly Vodopich - Director of Special Events and Expo
Shirly Chang - Director of Banquet
Ong Wee Min - Executive Director of Expo Sales
Charlie Fisher - Associate Director of Sustainability
Daniel Kauhini - Associate Director of Operations, Transportation

Absent: **Benny Zin** - COO & VP of Conventions & Exhibitions-Asia
Mike Lee - VP - Sales
Kevin Teng - Director of Sustainability
GP - Director of Transportation

Author: **May Ann Selebio**

S/NO	DESCRIPTION	DUE DATE	ACTION BY
1	<u>Sustainability / Energy control in MICE / ISO20121 Certification:</u> <u>Action:</u>		
1.1	Energy Tracking Report Update	-	<i>Kevin</i>
1.2	Chilled water Consumption: yet to define the baseline	-	<i>Kevin</i>

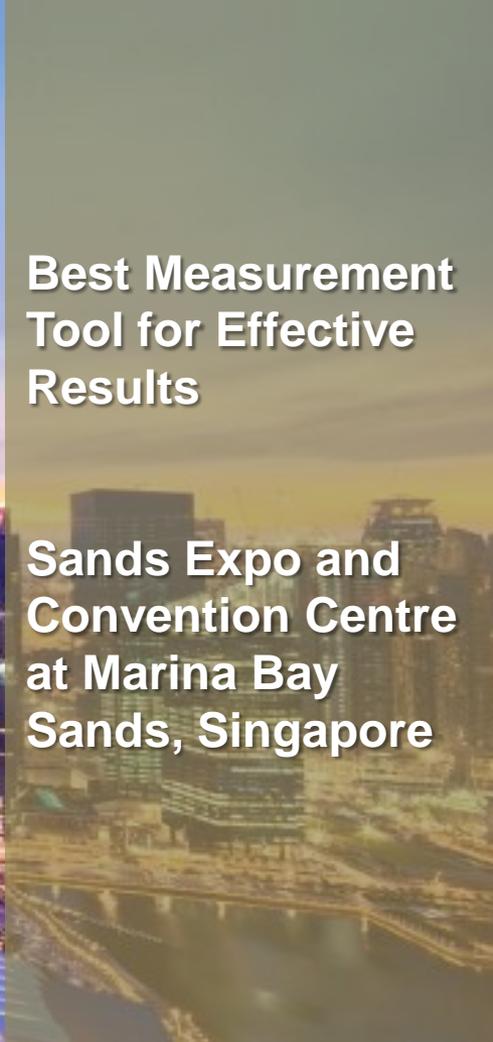
ADDITIONAL SOP IMPROVEMENTS

THE TEAM HAS DEVELOPED ADDITIONAL SOPS FOR TEAM MEMBERS IN MICE THAT ARE RELATED TO ENERGY

New SOPs were introduced to achieve objectives and KPIs:

- Sub-metered energy monitoring SOP
- Performance Evaluation for the 3 year energy improvement plan
- Temperature set points SOP during events and move-in/move-out lightin
- AHU Room bookings by zone.





**Best Measurement
Tool for Effective
Results**

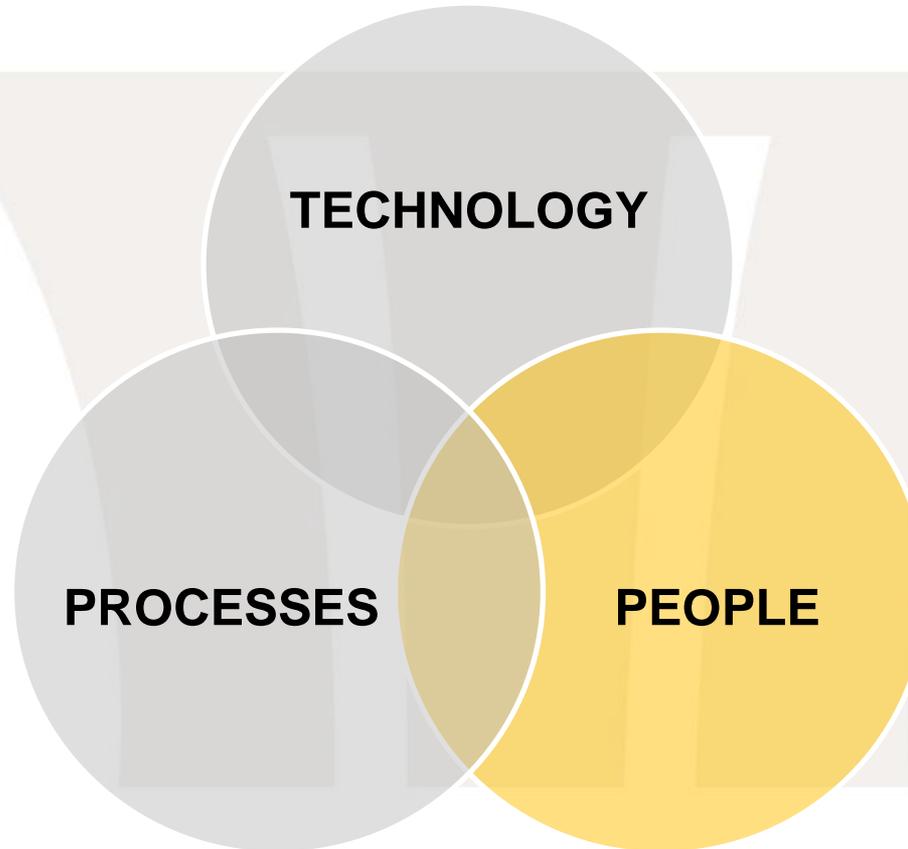
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People



OUR STRATEGIC PHILOSOPHY

Effective Team Member engagement is the most important element to ensuring the technology and processes are ingrained in the culture of the team.



<i>sustainability across different channels.</i> Engagement Strategy		Level of Engagement		
Frequency	Channels	Rank & File	Middle Management	Senior Management
Annually	<ul style="list-style-type: none"> ▪ Earth Hour ▪ World Hunger Week 	✓	✓	
Annually	Career & Learning Fest	✓	✓	✓
Quarterly	Internal Sust. Events – Ec-o-pinion	✓		
Quarterly	Magnificence Club Lunch – Sustainability section	✓	✓	✓
Monthly	Internal Sust. Events (recycling drives, Soap for Hope, education tours)	✓		
Daily / Ad-hoc	Internal Channels with Ad-hoc Sustainability Messages: <ul style="list-style-type: none"> ▪ Journey News (daily news brief) ▪ Pre-shift briefing messages ▪ Journal to Magnificence (weekly) ▪ BOH walls (Stickers, Posters) 	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
Daily / Ad-hoc	Social Media: <ul style="list-style-type: none"> ▪ MBS Website ▪ Facebook Activities 	✓ ✓ ✓	✓ ✓ ✓	✓

TM ENGAGEMENT STRATEGY

Comprehensive **training and competency assessment is provided** for all team members, and is mandatory for all SECC team members as part of the ISO20121 certification.

- Sustainability 101 Training
- SOP Training on key sustainability SOPs, including energy management SOPs
- ISO20121 and ESMS (Event Sustainability Management System) Training
- Online Quizzes



Select another language / 选择中文版本

MBS Sustainability - TM Quiz (Jan'14)

Introduction and welcome page

Dear Team Member
Welcome to the *Sustainability quiz for the ISO20121 project*. Following your introduction and training to the program last week we would like to revisit the ISO Millionaires quiz and refresh your memories. All questions are multiple choice, take note that some of the questions have more than one answer. Please follow the below link to the test. The deadline to complete this test is Wednesday 18th of December.

Good luck,
Sustainability Team.

Please provide your details below for recording purposes Team member name: *

TM number: *

Characters used: 0 (minimum 5).
Characters used: 0 out of 7.

TM ENGAGEMENT STRATEGY

Variety of **sustainability activities** to engage team members on their sustainability awareness in a fun way.

- Monthly Recycling Drive
- Soap for Hope
- Quarterly Ec-O-Pinion contest
- Earth Hour and World Hunger Week



ISO20121 TRAINING

- ESMS and ISO20121 training is conducted for 3 different categories
 1. Senior Management
 2. Supervisor and above
 3. Rank and File Team Members
 - Breakfast groups, small discussion groups with rank and file TMs reviewing training content
 - Department training conducted by ISO Ambassador
- Team members were all trained to ensure the Awareness, knowledge, understanding and competence of personnel involved in the system
 1. Basic sustainability principles and company's core value
 2. Energy Conservation SOPs
 3. How to use the new energy dashboard

EARTH HOUR 2014

Challenge your Boss

- team members can vote for challenges they wish their senior management can accomplish

I Walked in the Dark

- A 3km walk around the bay standing from MBS Event Plaza and ending at the floating platform to celebrate Earth Hour 2014.

Photo Competition

- Team members to send in photos of themselves participating in Earth Hour or a Sustainable contribution and stand a chance to win a foldable bicycle!



[Video Link](#)

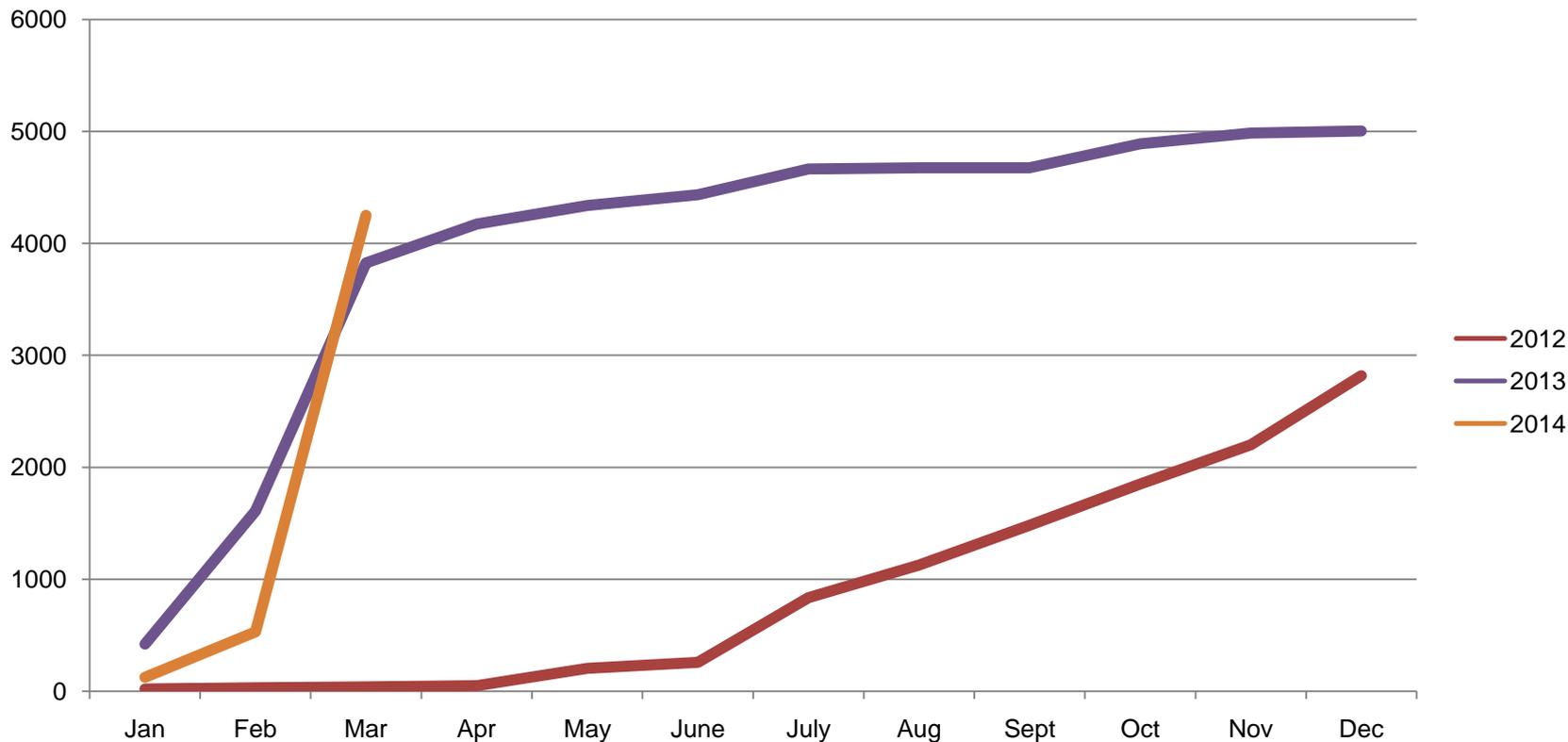
SUSTAINABLE OFFICE SOP

We launched a Sustainable Office SOP in 2014:

- No personal trash cans; All recycling and general waste bins consolidated in 1 location
- Energy Management of PCs, lights, photocopier machines, and AC



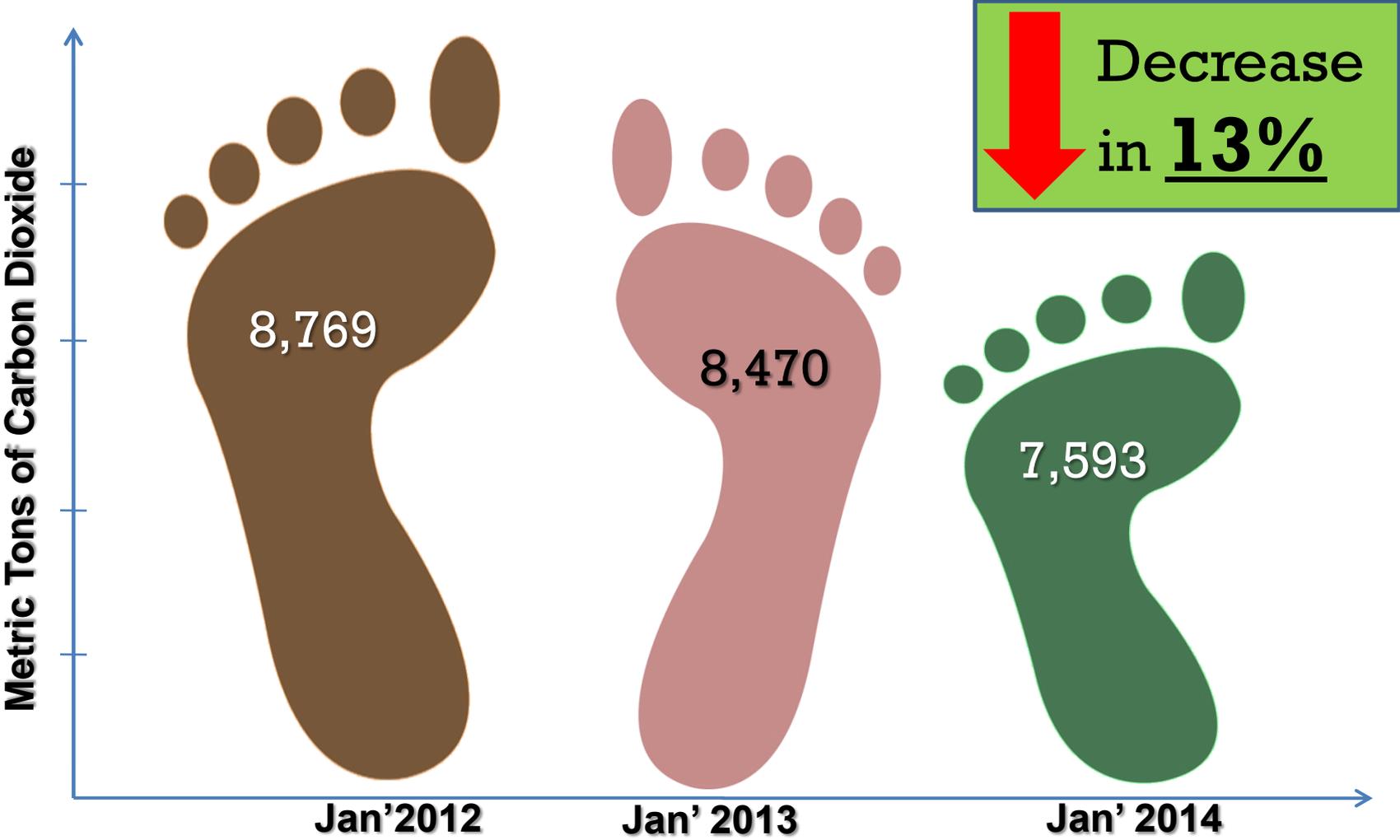
With over 9000 Team Members, we track our unique Team Member participation with a goal of achieving over 50% of Team Members participation in voluntary Sustainability Activities each year.



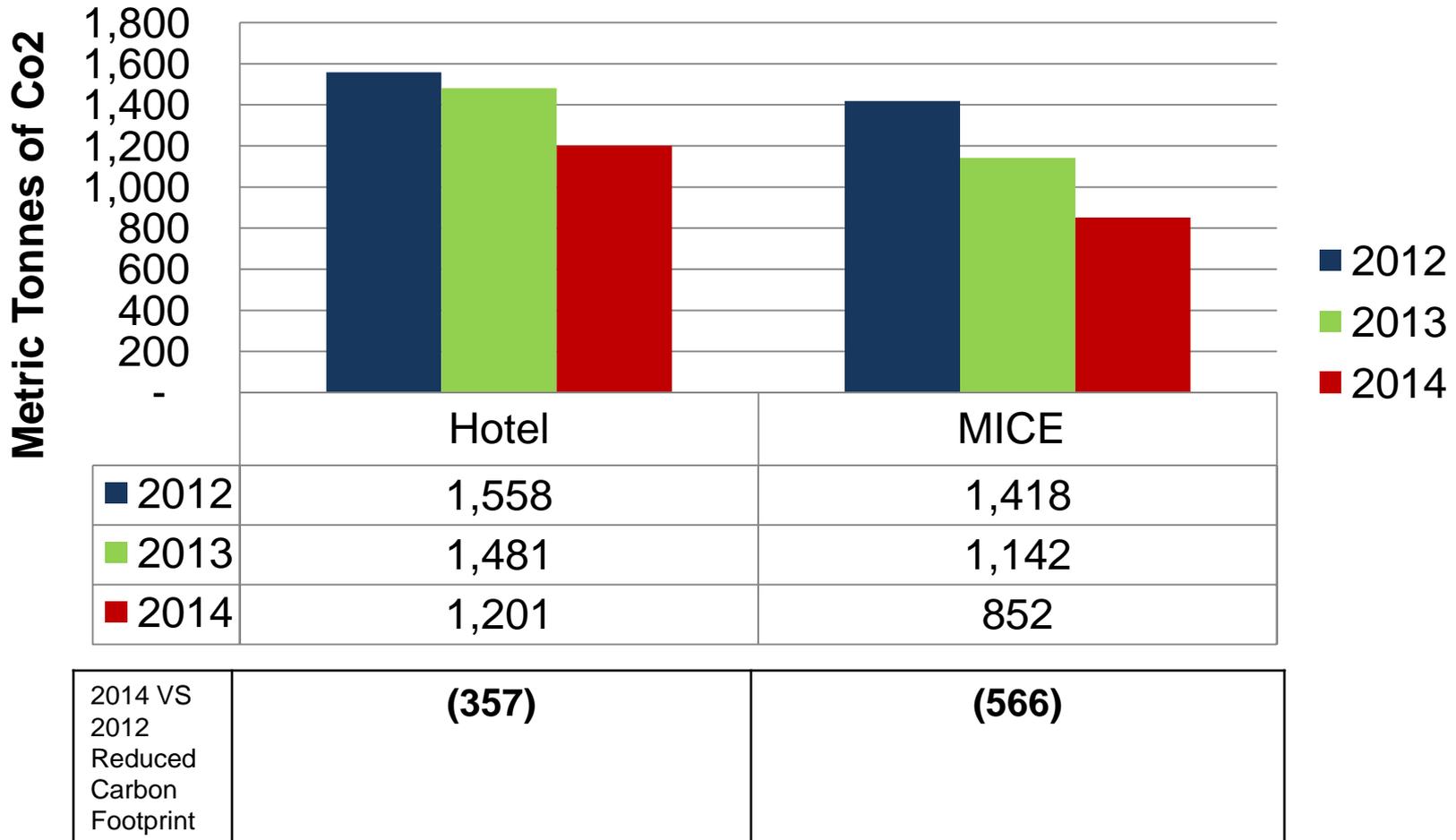
KEY RESULTS



Monthly Carbon Footprint

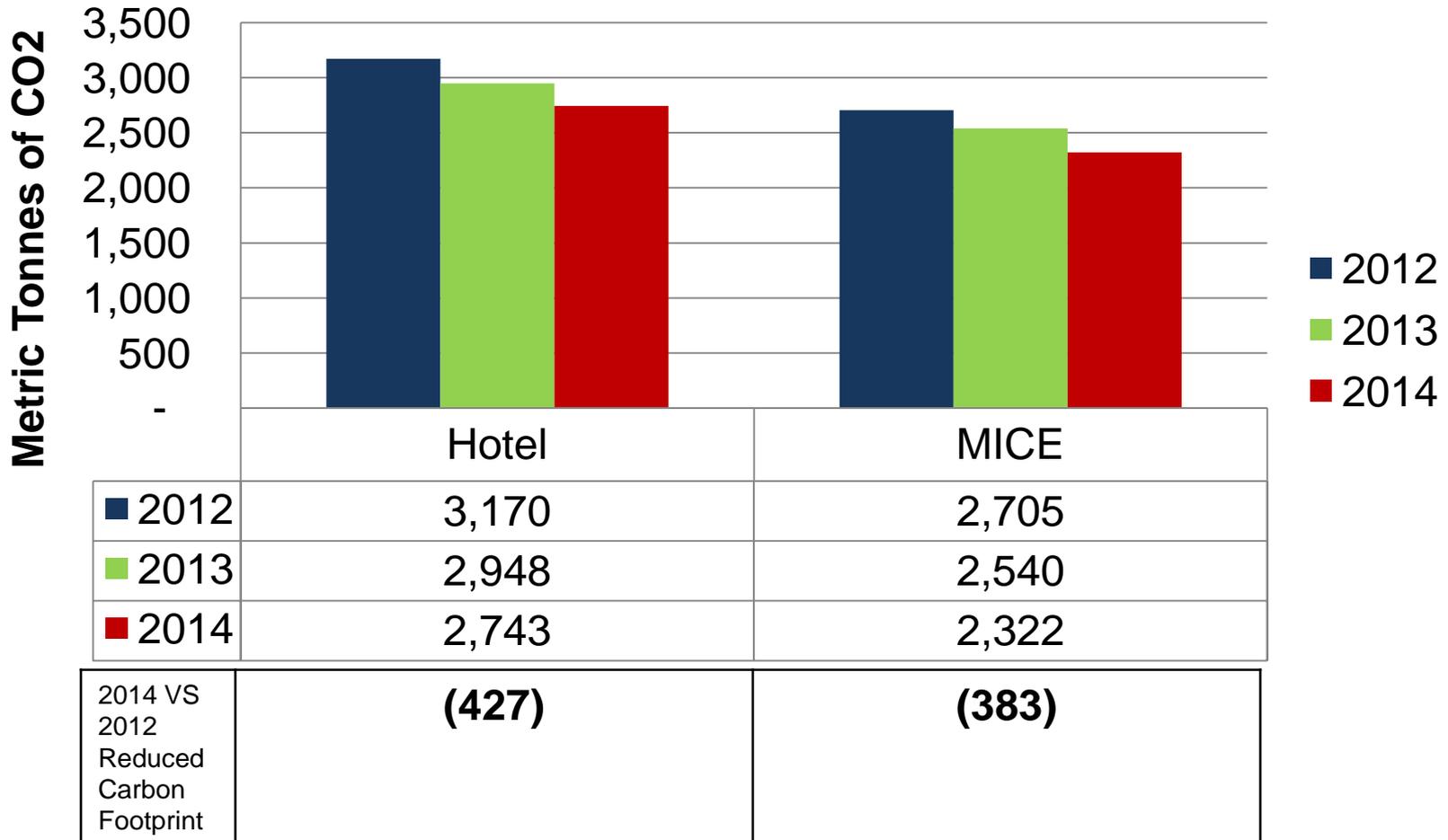


AVERAGE MONTHLY CHILLED WATER CARBON FOOTPRINT COMPARISON 2012 to 2014



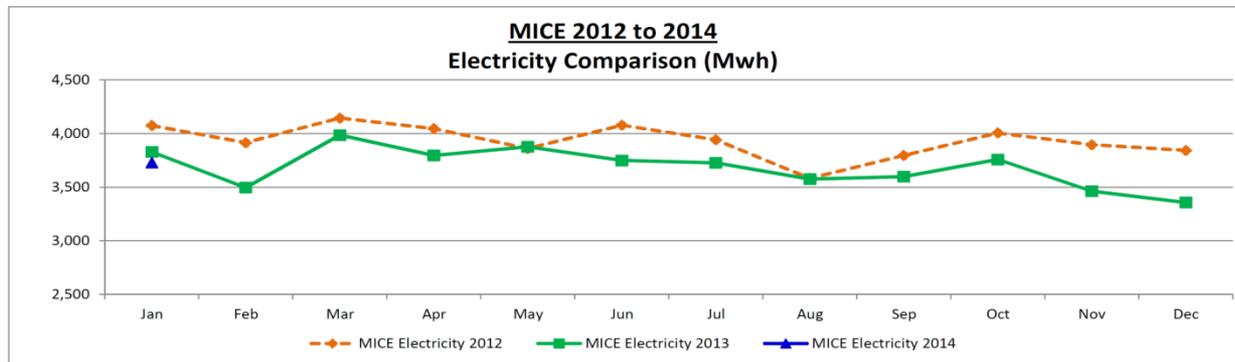
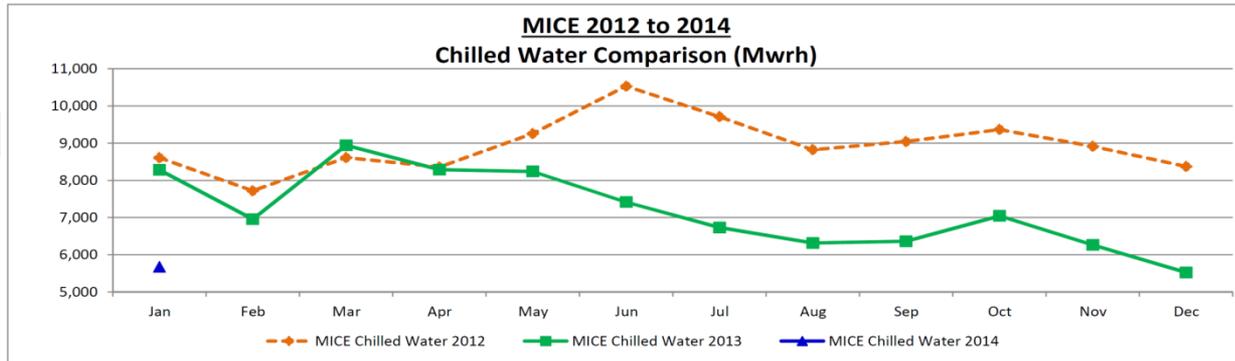
The overall % of chilled water carbon footprint has decreased significantly from 2012 to 2014 for both MICE and Hotel.

AVERAGE MONTHLY ELECTRICITY CARBON FOOTPRINT COMPARISON 2012 to 2014



The overall % of electricity carbon footprint has decreased significantly from 2012 to 2014 for Both MICE and Hotel.

ELECTRICITY AND CHILLED WATER CONSUMPTION DATA



CONCLUSION

The most effective solutions require an explicit focus on People, Process and Technology.

- *Identify advanced Technology to enhance own Sustainable Operations*
- *Implement holistic Processes with essential tracking and monitoring to prevent nonconformities from occurring*
- *Rely on competent team members with comprehensive training and engagement scheme*

