

Annex A: Singapore Watermark Awards (SWMA)

About SMWA

The SWMA originated as the Watermark Award in 2007, with the goal of promoting ground-up initiatives within the community to conserve water. Over time, it evolved to acknowledge ongoing efforts in water efficiency and the introduction of new initiatives for water reduction or recycling.

Today, the SWMA stands as the premier accolade, recognising leading organisations in Singapore that exhibit a profound dedication to effective water management, ongoing efforts in water efficiency, innovative water conservation practices, and active community engagement to inspire action and garner support for the water cause.

All nominations are reviewed by a selection committee, comprising prominent thought leaders, distinguished academics, and water experts from the public and private sectors. Nominations are evaluated on the following criteria:

- **Performance** – Demonstrated efforts and quantifiable results in the efficient use of water.
- **Advocacy/Influence** – Created positive changes to water conservation through implemented policies, programmes, or outreach activities.
- **Innovativeness** – Incorporated innovative services, programmes, processes or new technologies to reduce water use or promote water recycling.
- **Sustainability Reporting** – Organisations who have published their water efficiency goals and plans will be allocated bonus points.

SWMA 2024 Winners

1. Amazon Web Services Singapore (AWS Singapore)

AWS Singapore has demonstrated a remarkable commitment to water conservation and sustainability in data centre operations, setting an inspiring standard for water management within their sector and beyond. This is driven by AWS's goal to be water positive by 2030, returning more water to communities than it uses in their direct operations. Their efforts have earned them the well-deserved SWMA 2024.

Water Efficiency in Operations

Since the launch of the AWS Asia Pacific (Singapore) Region in 2010, AWS Singapore has implemented a water-efficient cooling tower design for their data centres to reduce water consumption. They have also been upgrading their operational capabilities to optimise water use, positioning AWS Singapore within the top 10% of performers in the data centre sector.

Most recently, AWS Singapore collaborated with a local startup to invest in and co-develop wastewater recycling technologies, allowing them to treat and recycle water onsite to unlock even greater water savings.

Sustainability through Advocacy

In addition to their operational upgrades, AWS Singapore is deeply committed to raising awareness on water conservation. Through employee education initiatives, such as holding a water forum in conjunction with Singapore World Water Day 2023 and organising a company trip to the NEWater Visitor Centre, they encourage their staff to learn more about water sustainability and contribute in their own ways.

To nurture future generations of water champions, AWS Singapore actively supports youth projects and Science, Technology, Engineering and Mathematics (STEM) programmes on water sustainability. Employees volunteer to guide students in developing their own projects, such as reusing rainwater to generate electricity, further contributing to the advancement of the water sustainability agenda.

2. Mee Toh School

Mee Toh School is deeply passionate about water education, advocacy and conservation. With their effective water conservation measures and educational initiatives, they have emerged as a trailblazer in the education sector, winning the prestigious SWMA 2024.

Hands-on Water Conservation

At the core of Mee Toh School's water conservation initiatives are its practical and sustainable solutions aimed at saving and reusing water. One notable example is their rainwater collection system, which harnesses rainwater for use in the cleaning of common spaces, watering of plants, and even in students' projects. On campus, sensors are installed at taps and water coolers to reduce water wastage. In addition, to ensure that underground water leakage does not go undetected, operations staff monitor water usage by checking water meters daily. Between 2019 and 2022, the school successfully lowered their annual water consumption by an impressive 30%, reflecting their proactive approach to water conservation.

Educating Future Generations

Water sustainability is a part of the school's Environment Education curriculum, instilling a sense of water ownership and responsibility in their young students. For example, Primary 5 students apply what they learn in the various subjects and come up with innovative prototypes in their attempts to address water sustainability issues. A group of them showcased these prototypes at the Singapore World Water Day 2023 celebration event. They also designed posters in their mother tongue languages, and some of these were put up in school to advocate for water conservation.

Other initiatives include water rationing exercises to promote responsible water use and nurture an appreciation for water as a valuable resource among the students. Parent volunteers, together with Environment Champions, are also involved in supporting the exercises and sharing the water conservation messages.

Empowering Water Advocates

The "Environment Champions" are a group of students who organise projects for environmental causes and rally the school community on water sustainability. They reach out to their peers through talks, posters and facilitate the pledging for water conservation by fellow schoolmates. Despite the challenging times of COVID-19, the Environment Champions still reached out to their peers through online platforms using learning packages on water conservation that they designed.

A group of Environment Champions even invented the 'Wishy-Washy' device, a prototype that uses rainwater to clean recyclables without using any additional water. It uses a sensor and Micro:bits (a pocket-sized computer) to detect the recyclables before activating the irrigation of rainwater, ensuring that water is used in the most efficient manner.

3. Systems on Silicon Manufacturing Company Pte. Ltd. (SSMC)

Innovation for Water Sustainability

SSMC has been a forerunner of water sustainability in the semiconductor industry as water is used extensively in wafer manufacturing for the cleaning and cooling of facilities and equipment. SSMC continues to raise the bar in water sustainability practices, efficient water management and community engagement.

Since 2015, SSMC has been recycling at an average level of 67%, as compared to the industry average of 45%. They have achieved this through active water recycling strategies, such as using NEWater in 100% of their operations and innovating new wastewater treatment methodologies.

Employee & Community Engagement

SSMC's commitment to water sustainability is evident in their avid community engagement and water advocacy – from participating regularly in Singapore World Water Day, to organising educational tours and sharing sessions for students. They connect with schools by virtually sharing their Water Efficiency Management Journey and offering an educational tour of their facility. This aims to educate students about the process and importance of water recycling.

SSMC is also training staff volunteer docents for the Lorong Halus Wetlands Learning Trail, with plans to educate the community on the importance of keeping our catchment areas and waterways clean.

Over the years, more than 50% of employees participated in SSMC's improvement crowdsourcing platform. In 2023, SSMC invited employees to contribute water conservation ideas to promote engagement in water conversation efforts. More than 35 ideas had been gathered and piped for implementation.

Annex B: Water Efficiency Awards (WEA) and WEA (Projects)

About WEA

The WEA is a biennial award which recognises the top 10th percentile of water-efficient performers in their respective sectors. The best performers in each sector refer to premises with the lowest Water Efficiency Index (WEI) or industrial plants with the highest water recycling rates. The 2024 WEA will be extended to twelve sectors, which includes: Biomedical manufacturing, commercial laundry, data centres, electronics, refinery, semiconductor, wafer fabrication, hotels, offices, retail, primary schools, secondary schools, junior colleges, estates (town councils).

New category Under WEA – Projects category

Under WEA, a new category – the WEA (Projects) has been introduced to recognise innovative projects that demonstrate remarkable improvements in their water efficiency and raise the industry benchmark. Nominations for WEA (Projects) 2024 were open to all organisations, including non-domestic industrial water users (e.g., private companies, businesses), schools and town councils, with water efficiency projects commissioned between 1 January 2019 to 31 December 2022.

Nominations are evaluated based on the following criteria:

- **Performance** – Demonstrate efforts and quantifiable results in the reduction of water demand from PUB, increased recycled water from within the plants/premise and reduced costs and demonstrable return on investment.
- **Innovativeness** – Demonstrate innovative use of technology, process improvements to reduce water use or promote recycling.
- **Project Leadership** - Demonstrate collaborative efforts to overcome unexpected obstacles and challenges.
- **Success of the Project** - Demonstrate successful operation of the project, in accordance with all regulatory requirements.

List of WEA winners

| Sector | SN | Recipients |
|--------------------------|----|--|
| Biomedical Manufacturing | 1 | ALCON Manufacturing & Logistics Pte Ltd |
| | 2 | JMS Singapore Pte Ltd |
| | 3 | GlaxoSmithKline Biologicals |
| Commercial Laundry | 4 | Hotel Laundry Pte Ltd |
| Data Centres | 5 | Google Asia Pacific Pte Ltd |
| | 6 | Microsoft Operations Pte Ltd |
| | 7 | Amazon Web Services Singapore |
| Electronics | 8 | AFPD Pte Ltd |
| Refinery | 9 | Singapore Refining Company Pte Ltd |
| Semiconductor | 10 | Hoya Electronics Singapore Pte Ltd |
| Wafer Fab | 11 | United Microelectronics Corporation |
| | 12 | Systems on Silicon Manufacturing Company Pte Ltd |
| Hotel | 13 | Andaz Singapore |

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|-----------------------|----|-----------------------------------|
| | 14 | Conrad Singapore Orchard |
| | 15 | Holiday Inn Singapore Atrium |
| | 16 | Vibe Hotel Singapore Orchard |
| Office | 17 | Ocean Financial Centre |
| | 18 | The Metropolis |
| Retail | 19 | IMM |
| | 20 | Northpoint City |
| | 21 | Parkway Parade |
| | 22 | The Atrium @ Orchard |
| Primary School | 23 | CHIJ (Katong) Primary |
| | 24 | Chongzheng Primary School |
| | 25 | Greenwood Primary School |
| | 26 | Punggol Green Primary School |
| | 27 | Mee Toh School |
| Secondary School | 28 | Sembawang Secondary School |
| | 29 | Serangoon Garden Secondary School |
| | 30 | St. Hilda's Secondary School |
| | 31 | Tampines Secondary School |
| | 32 | Yuying Secondary School |
| Junior College | 33 | Millenia Institute |
| Estate (Town Council) | 34 | East Coast Town Council |
| | 35 | Jalan Besar Town Council |

List of WEA (Projects) winners

| S/N | Sector | Organisation | Project |
|------------|--------------------------|---|---|
| 1. | Electronics | AFPD Pte Ltd | Low HF Reclaim water for Cooling tower make-up |
| 2. | Biomedical Manufacturing | Amgen Singapore Manufacturing Pte Ltd | Wastewater Treatment Plant |
| 3. | Chemicals | MGC Pure Chemicals Singapore Pte Ltd | Water Reclamation plant |
| 4. | Wafer Fabrication | Micron Technology | Fab10X Local Scrubber Reclaim Reject Recovery and Fab10X Local Scrubber Reclaim Expansion |
| 5. | Wafer Fabrication | RF360 Singapore Pte Ltd | Local scrubber Drain (LSRD) reclaim project |
| 6. | Others | Samwoh Corporation Pte Ltd | Fully enclosed water saving Cooling Tower |
| 7. | Others | SBS Transit Ltd | Improving the Efficiency of Bus Washing |
| 8. | Food Manufacturing | Vitasoy International Singapore Pte Ltd | Water Recycle System |