SEPTEMBER 2025 ISSUE 3

Sustainability in Action

Empowering Facility Managers
for a Sustainable Singapore

IN THIS ISSUE

Foreword

Ho Chee Kit, Senior Director, C&W Services (S) Pte Ltd
Member, Sustainability and Development Committee
Singapore International Facilities Management Association (SIFMA)

Welcome to the 3rd edition of Sustainability in Action: Facility Management and ESG in Singapore, presented by the Sustainability and Development Committee of SIFMA.

Facilities Management (FM) is at the heart of the transition to a low-carbon, sustainable future. As organisations commit to net-zero pathways, FM has a unique opportunity to move beyond traditional cost-control towards becoming a catalyst for climate action, operational excellence, and occupant wellbeing.

One proven approach lies in **Lean Management**, particularly the **T.I.M.W.O.O.D.** framework—a tool originally from manufacturing that identifies seven types of waste: **Transportation, Inventory, Motion, Waiting, Overproduction, Overprocessing, and Defects**. In the FM context, these translate into energy wasted by idle equipment, excessive stock of materials, unnecessary staff movement, delays in service delivery, over-servicing assets, redundant processes, and poor quality that leads to rework. Each of these wastes are also **carbon wastes**—hidden emissions embedded in our daily operations.

To re-imagine FM for a low-carbon future, we must take the **L.E.A.P.** forward:

- **Lean** – apply TIMWOOD principles to reduce waste and emissions.
- **Environment** – integrate sustainability into every service.
- **Analytics** – use IoT, AI, and data to predict and optimise.
- **People** – create workplaces that inspire, engage, and care for wellbeing.

By embedding L.E.A.N, sustainable, and people-first practices, FM can transform facilities into ecosystems that are not only efficient, but truly **great places to live, work, and play—leaving behind a lighter footprint for generations ahead.**

Insight: In FM, waste = hidden carbon. Tackling TIMWOOD doesn't just cut cost—it shrinks the carbon footprint of facilities.

On behalf of the committee, I thank our contributors and readers. Your continued engagement, feedback, and ideas are the heartbeat of this movement. Let us keep shaping a future-ready, sustainable built environment together.

FMES 2025 Highlights

Facilities Management Experts Summit (FMES) 2025 was a resounding success!

The Facilities Management Experts Summit (FMES) 2025, organised by the Singapore International Facility Management Association (SIFMA), has officially concluded—thank you for helping make it a landmark event.

Themed "The Future Workplace: Technology × Sustainability," we explored how innovation and sustainable design are transforming facilities management at The Ritz-Carlton, Millenia Singapore. This year was especially meaningful as we celebrated:

- SG60
- 25 years of IFMA Singapore Chapter
- 5 years of SIFMA

We extend our sincere appreciation to Guest-of-Honour, Minister **Indranee Rajah**, for joining us and delivering her inspiring words to the FM community. From impactful keynotes and panel discussions to recognising outstanding contributions through the FMES Awards, and ending with a celebratory Gala Dinner, the day was a powerful reflection of the passion, innovation, and collaboration across the FM community.

In SIFMA President Frank Ngoh's speech, he shared the SG60 reflection, a moment to honour Singapore's journey from vulnerability to resilience. Frank shared stories of our early nation builders, the "eight immortals" of late Mr Lee Kuan Yew (Singapore's founding Prime Minister), whose bold decisions shaped our infrastructure, housing, and global standing. Their legacy reminds us that nation building is not just the work of leaders, but of every individual who contributes meaningfully.

As facility managers, we play a vital role in shaping the built environment and driving sustainability. In the lifecycle of a building, construction accounts for only 20% of cost, while operations and maintenance make up 80%. Similarly, 60% of carbon emissions come from operations and maintenance, a clear call for us to lead the charge in sustainable practices.

A big thank you to our partners, speakers, jurors, supporting organisations, attendees and organising committee for making FMES 2025 such a success, and congratulations to all awardees. Your support and participation are what drive the continued growth of our industry. We also achieved several record-breaking milestones on attendance, sponsorships and awards submissions. Special shout out appreciations to the Organising Committee:

Steering Committee	SIFMA President Frank Ngoh & Vice President Michael Ng
Chair, Organising Committee	Robin Leow
Vice Chair, Organising Committee	Lee Liang Huat
Awards Sub-Committee	Tan Ee Wei, Hansen Tan & Joanne Koh
Programme Sub-committee	Benjamin Huang & Jonathan Koh
Budget/Sponsors Sub-committee	Ivan Foo & Tan Chai Soon
Secretariat	Joanne Lim, Connie Wee, Genevieve Ng, Rayman Som

We look forward to keeping the momentum going, see you at the next FMES 2026!

Industry Visit Highlights

	Exploring Innovation & Sustainability at The GEAR (Kajima Lab for Global Engineering, Architecture & Real Estate)

On 30 May 2025, the SIFMA Sustainability Development Committee convened an exclusive event for SIFMA members at The GEAR (Kajima Lab for Global Engineering, Architecture & Real Estate), Kajima's first regional headquarters and innovation hub, and a bold testament to its commitment to shaping the future through innovation, sustainability, and open collaboration.

The GEAR: A Bold Vision Realized

Located at Changi Business Park, this S$100 million headquarters spans 13,061 sqm across six floors, housing over 250 staff and five cutting-edge labs:

- Human Centric Design
- Construction Robotics
- Digital Tech
- Environmental Engineering
- Urban Space Creation

Together, these labs, powered by Kajima Technical Research Institute Singapore (KaTRIS), explore core areas including sustainability and wellness, productivity improvement, and intelligent buildings.

The GEAR redefines the workplace as a smart, sustainable, and human-centred environment—blending innovation, adaptability, and design excellence. Certified BCA Green Mark Platinum, WELL Platinum, and SmartScore Platinum, the building exemplifies responsive architecture that learns from its users, integrates nature, and sets a new benchmark for high-performance, future-ready spaces.

The Exchange of Ideas

The afternoon began with an energising opening speech from SIFMA President Frank Ngoh, who emphasised the vital role of cross-sector collaboration in building resilient and adaptable infrastructures. Beth Henderson, Lead of Startup Programmes, The GEAR by Kajima, then captivated the audience with the story behind The GEAR, an environment born out of a desire to nurture entrepreneurship, de-risk experimentation, and catalyse change within the construction, engineering and real estate industries. Following that, Kieve Lim, Chief Digital Officer of Primustech, presented a compelling showcase on how artificial intelligence, predictive analytics, and conversational interfaces can revolutionise Facility Management.

A Journey Through The GEAR

Participants were then given a guided tour through the labs and workspaces, where they could witness ideas being transformed into tangible innovation. Highlights included:

Showcase of robotic and advanced construction tools

Smart biophilic building with IoT-enabled infrastructure, natural ventilation, and flexible workspaces to enhance energy efficiency and occupant wellness prototypes designed to rethink urban density and environmental adaptation.

Behind the Scenes: Powered by Passion

A huge thank-you goes to Daniel Ong, whose coordination ensured every aspect of the event ran smoothly. The SIFMA Secretariat: Joanne Lim, Connie Wee, and Genevieve played a crucial role in managing logistics and communications, while Benjamin Huang, our charismatic emcee, kept the energy flowing throughout the day.

We also appreciate the Kajima leadership team, especially Junya Morita, Head of Smart Building, KaTRIS, and Luke Wu, Managing Director, The GEAR by Kajima, whose generous support and deep insights made the event truly memorable. We also thank the entire The GEAR by Kajima team for their seamless facilitation of the event.

Building the Future Together

As climate and urban pressures intensify, The GEAR exemplifies what's possible through cross-disciplinary collaboration. Let's keep pushing boundaries to build smarter, greener, and more resilient spaces for generations to.

Facility Management Reimagined: Tech-tical Intelligence and the Future of FM in Singapore

Ho Chee Kit
Senior Director, C&W Services (S) Pte Ltd

The Facility Management (FM) sector in Singapore is undergoing a strategic redefinition as it responds to growing demands for operational resilience, sustainability, and smart building performance. As buildings become increasingly complex and resource constraints intensify, FM must transition from reactive and siloed processes to integrated, data-enabled models. This paper introduces and elaborates the concept of *tech-tical intelligence*—a hybrid approach that synergises advanced technologies with tactical field execution—to support the full FM value chain in Singapore.

Defining Tech-tical Intelligence

Tech-tical intelligence can be operationally defined as the strategic capability of FM organisations to align digital technologies with human-centric execution for enhanced decision-making, responsiveness, and long-term value. It comprises four core dimensions:

Dimension	Description
Sensing	Use of IoT and sensors to gather real-time data on systems and environment
Interpretation	AI and analytics to translate data into actionable insights
Execution	Skilled personnel acting on insights with precision and situational judgment
Integration	Seamless interaction of IT-OT systems across functions and external partners

This model positions FM not just as a service provider but as a **value orchestrator** across the asset lifecycle.

Supporting the End-to-End FM Value Chain

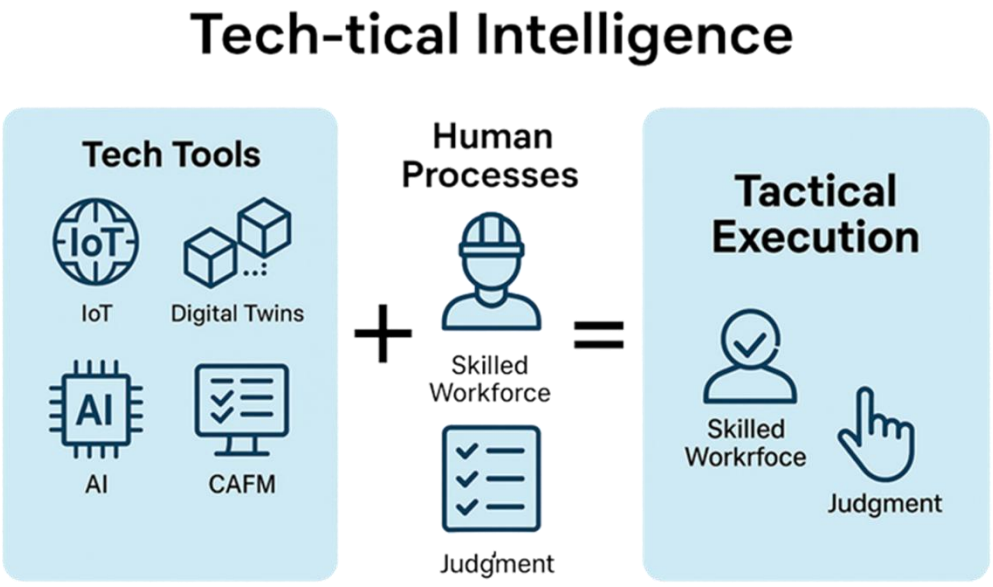
In the Singapore context—where Green Mark certification, carbon tax readiness, and smart estate initiatives are increasingly mainstream—tech-tical intelligence supports the FM value chain as follows:

FM Value Chain Stage	Traditional FM	Tech-tical FM (Singapore context)
Procurement	Manual supplier coordination	Smart procurement systems with vendor KPIs, sustainability credentials, and predictive needs
Inventory Management	Periodic stock checks	RFID, IoT-enabled inventory tied to maintenance forecasting
Asset Planning	Time-based replacement	Condition-based, data-driven lifecycle strategies with BIM and digital twins
Decommissioning	End-of-life disposal	Circular economy tracking, materials recovery, compliance-based digital reporting
Reporting & ESG	Manual compilation	Automated sustainability dashboards aligned with BCA, GRESB, and ISSB frameworks

These capabilities support initiatives such as BCA's Green Building Masterplan and Singapore's Smart Nation objectives, making tech-tical FM critical for national goals.

Conceptual Framework

We propose a conceptual framework integrating *Tech Tools* and *Human Processes* as shown:



In this model, performance emerges not just from automation but from **the co-evolution of intelligent systems with operational discipline**—a point reinforced by socio-technical systems theory (Davis et al., 2019).

Benchmarking Tech-tical Maturity

FM organisations in Singapore can assess their tech-tical maturity by evaluating:

- Sensor coverage and data fidelity
- Response time to system alerts
- Integration levels between CAFM, BMS, and BIM
- Training hours on digital platforms per staff per year
- Degree of automation in sustainability reporting

Maturity models adapted from ISO 41001 or the Smart FM Framework (BCA, 2023) can help quantify these benchmarks.

Conclusion

As Singapore accelerates toward its net-zero ambitions and Smart FM targets, integrating tech-tical intelligence is not just advantageous—it is essential. FM providers must align their digital transformation with human competencies, regulatory requirements, and full-lifecycle asset value. The future of FM in Singapore lies in this precise convergence: **human-centered, digitally enabled, and value-chain integrated**.

Featured Commentary

Talking point: Double Slabs

Low Siew Kim
Executive Manager
Facility Management Transformation Department (FMTD),
Environmental Sustainability Group
Building and Construction Authority

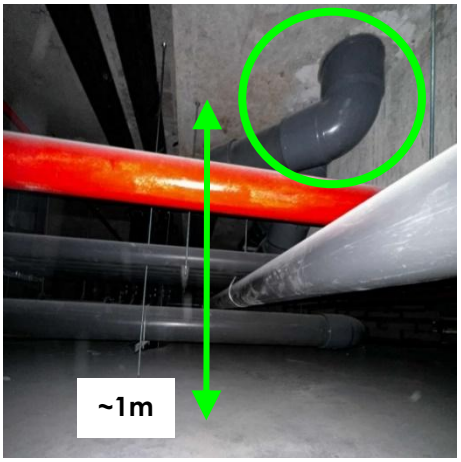
1. Double Slabs – Out of Sight, Out of Mind?

Ever tried fixing a leaking pipe in a space barely high enough to crouch in? If you are a building owner, developer or FM professional, chances are your building has double slabs.

But here is the big question:
Can anyone safely get in there to maintain the services efficiently and effectively?

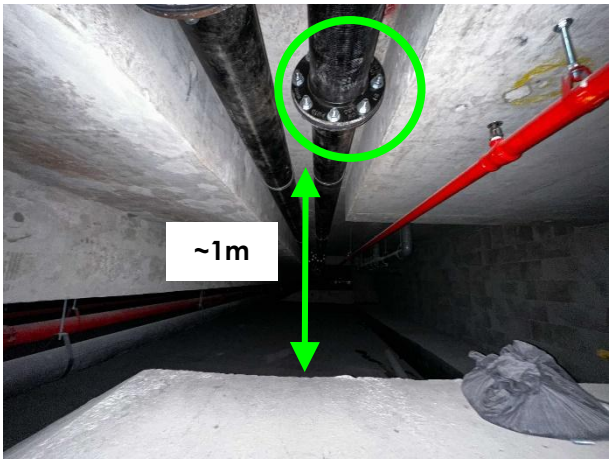
Double slabs are often used to house Mechanical, Electrical, Plumbing (MEP) services — but when these spaces lack sufficient headroom, it creates serious challenges for inspection, regular servicing, repair & replacement, and safety.

If you are wondering what that looks like, have a look at the photos below!



Cramped double slab space *(~1m headroom)* ***packed with pipes*** *– challenging to service or change the elbow!*

Insufficient under-beam access and tightly packed services *– how can maintenance happen in a space like this?*



Pipe joint installed in a double slab space with only ~1m headroom *— definitely not maintenance-friendly!*

2. Is Enough Headroom in Double Slabs Really That Important? *Absolutely!*

i. Make Maintenance Possible
Building services like fire sprinklers and sanitary systems require regular maintenance. But when they are installed in double slabs with poor access, servicing becomes a nightmare. Poor headroom compromises efficient and effective maintenance, jeopardising system performance.

ii. Less Access = Less Reliability
When building services are hard to reach, chances are they are inspected less often or not at all. That is how minor issues go unnoticed, spiral into major failures, and lead to longer downtimes and higher costs. It is not just bad for operations — it is bad for business.

iii. Better Work Environment
Cramped double slabs force maintenance workers to crouch or crawl — often for long periods. It is ergonomically poor, risky, and contradicts basic workplace safety principles. Maintenance should not be a health hazard!

3. What is BCA doing about this?

BCA stipulates a **headroom of minimally 1.8m** in double slabs through the Green Mark (GM) 2021: Maintainability (Mt) Section. This requirement is a prerequisite for projects aiming for Mt Badge.

Deliberated upon and endorsed by a taskforce comprising industry practitioners, the 1.8m headroom was derived by referencing (i) average height of Asian men (which is about 1.7m), (ii) anthropometric data in BS 8313: *Code of practice for Accommodation of building services in ducts,* and (iii) prevailing local regulatory guidelines.

4. How can industry play its part? *Design for Maintainability*

- Developers & Owners: ***Plan for Maintenance, Not Just Completion***
  Plan for maintenance and safety *from the start.* Integrate minimally a 1.8m headroom in double slabs at the onset of planning & design. Treat double slab not as leftover voids, but as part of your long-term investment, crucial for safe and effective maintenance.

- Designers: ***Adopt an Integrated Design Approach***
  Coordinate among architects, engineers, contractors and FM teams at planning and design. The right time to plan for accessible MEP systems in double slabs is before the first line is drawn.

- Contractors: ***Don't Cut Corners on Headroom***
  Do not "value-engineer" headroom out of double slab designs. Respect design tolerances and ensure conscious coordination of services in double slabs.

- FM Teams: ***Be the Voice for Maintainability***
  Speak up during design reviews (e.g. BIM coordination meetings). Share real-world feedback with communities of developers and designers, including lifecycle costing assessments on potential OPEX risks due to poor access in double slabs. Champion safety and maintainability upstream, not just when problems arise downstream.

5. WHAT'S THE WAY FORWARD? *TAKE A LIFECYCLE VIEW*

Do not just build to complete — build to sustain life cycle performance. Let us move beyond short-term savings and start embedding **maintainability** into the DNA of every building we create to support effective, efficient and safe maintenance!

Note: BCA, together with other regulatory agencies, has issued a joint circular to clarify the importance of providing adequate headroom in double slabs.

ACCREDITED SUSTAINABLE NET ZERO ORGANISATIONS (SNZO)

NEW SUSTAINABLE NET ZERO ORGANISATIONS (SNZO)

In addition to the eleven accredited SNZOs, two more companies namely Savills Facilities Management, Engie and CPG FM and have been accredited, bringing the total number of SNZO companies to 15 to-date.

Savills Facilities Management is proud to celebrate a significant milestone in our sustainability journey: our successful upgrade from Gold to GoldPlus Tier under the Sustainable Net Zero Organisation (SNZO) Certification. This achievement is more than a recognition. It is a powerful affirmation of Savills' steadfast commitment to creating real, measurable impact within the built environment.

As leaders in Facilities Management, we understand the responsibility we carry to set the benchmark for sustainable practices. Certifications like the SNZO GoldPlus are not merely accolades. They are declarations of intent. They symbolize our shared commitment to act, to lead, and to contribute meaningfully to a net zero future.

At Savills, we will continue to support and empower our people to adopt and champion sustainability in everything we do. Our commitment extends beyond certifications. It is embedded in our daily operations, our decision making, and our long-term vision.

Sustainability is not an option. It is a responsibility. And we are proud to carry it forward together. Let us continue working towards a future where sustainability is the norm, not the exception.

In Southeast Asia, ENGIE is at the forefront of the energy transition, delivering low-carbon energy solutions across Singapore, Malaysia, and the Philippines.

We help businesses reduce emissions, improve efficiency, and achieve sustainability goals. Our expertise spans Integrated Facilities Management, energy performance, district cooling, EV charging, onsite solar, and large-scale renewables, supporting industries, real estate, and data centres in their decarbonisation journey.

As an Energy Service Company (ESCO) in Singapore, ENGIE Services Singapore is a leading provider of integrated facilities management and energy management solutions.
We support mission-critical industries, including aviation, healthcare, public sector, private sector and industries, ensuring seamless and efficient operations."

CPG Facilities Management (CPG FM) provides a comprehensive range of facilities management services for a diverse type of properties including public and commercial buildings, security complexes, educational institutions, and townships.

With over 590 professionals, we are the strategic partner of choice for maintaining high-functioning buildings, estates, and facilities while improving efficiency, reliability, and reducing operating costs for our clients.

CPG FM specialises in integrated solutions with a digital and green approach. Our expertise spans facilities, townships, projects, contracts, sustainability, and decarbonisation services, consultancy, events management, leasing and marketing, and a 24/7 integrated hub, ensuring seamless support and operational efficiency.

HOW CAN YOUR ORGANISATION BE CERTIFIED AS A SNZO?

The **Sustainable Net Zero Organization (SNZO)** initiative is a certification program aimed at aligning **facility management companies (FMCs)** with Singapore's decarbonisation goals. The certification is structured into **five key categories** as shown in Figure 1 below.

Certification Overview

Figure 1

The certification is valid for **two years** and follows a **three-tier system**—Certified, Gold, and Gold+—to recognise organisations based on their sustainability performance. The SNZO Taskforce has been established to **certify, recognize, and identify skill sets** that contribute to achieving net-zero targets in the built environment.

The SNZO **certification process** involves a **structured application and renewal system** with a **S$1,000 fee for two years**. The initiative underscores an **increased focus on sustainability in the built environment**, emphasising not only **technical and operational efficiencies** but also **workforce development and best practices** in facility management.

Through these structured accreditation criteria, SNZO seeks to **elevate sustainability practices in the industry**, ensuring alignment with **national and global decarbonisation objectives**.

If you are interested in learning more about SNZO certification, its benefits, and how your organisation can participate, we invite you to reach out for further details. Please contact us at **info@sifma.org.sg** to explore how your organisation can contribute to a more sustainable and resilient built environment.

Call to Action

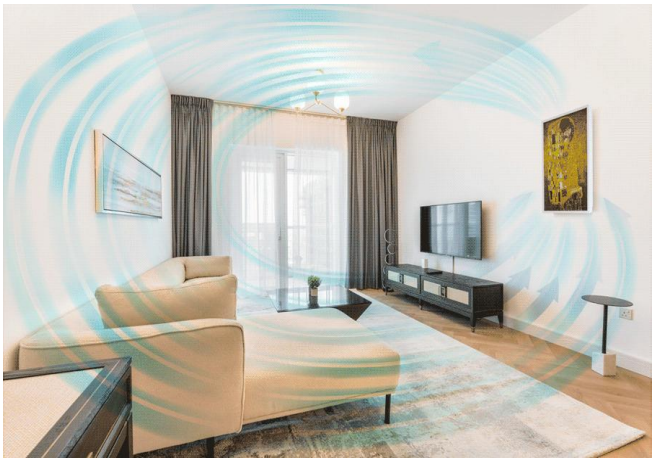
Reimagining Indoor Air Quality: SauberAir FLAT™ for Smarter, Healthier Spaces

By Patrick Loo, General Manager,
Aedition Technology

A Fresh Perspective for Facility Managers

In Singapore, where people spend nearly 90% of their time indoors, indoor air quality (IAQ) is a key driver of health, comfort, and productivity. Dust, mold, and volatile organic compounds (VOCs) are often invisible threats that affect occupant well-being and increase absenteeism. Traditional floor-standing purifiers not only take up space—they often deliver inefficient airflow.

SauberAir FLAT™ offers a smarter solution, purpose-built for today's facilities.



Engineered for Space, Designed for Impact

Wall-mounted and ultra-slim (just 10 cm), SauberAir FLAT™ improves room airflow using the **Coanda effect**, which directs purified air from ceiling height across the room in a gentle, controlled flow. This minimises pollutant recirculation and ensures more consistent air quality—ideal for classrooms, clinics, and open-plan offices.

Design Meets Customisation — and Placemaking

In today's facility design, every detail counts—not just for function, but for emotional resonance and placemaking. SauberAir FLAT™ pushes the boundary by transforming what is typically a utilitarian appliance into a multi-functional, customisable wall feature.

Each unit doubles as a picture frame, allowing property managers, educators, and designers to display:

- Artistic visuals for **hospitality and corporate** settings
- Educational posters in **schools and enrichment centers**
- Health and wellness messages in **healthcare** facilities
- Wayfinding or branding visuals in **commercial environments**
- Inspirational quotes in **residential or aged care** spaces

This versatility makes SauberAir FLAT™ a compelling solution for placemaking—enriching the identity of a space while maintaining air quality. Whether creating a calm healing environment in a clinic, stimulating curiosity in a classroom, or aligning with biophilic principles in a co-working hub, one product serves dual functions: environmental health and environmental identity.

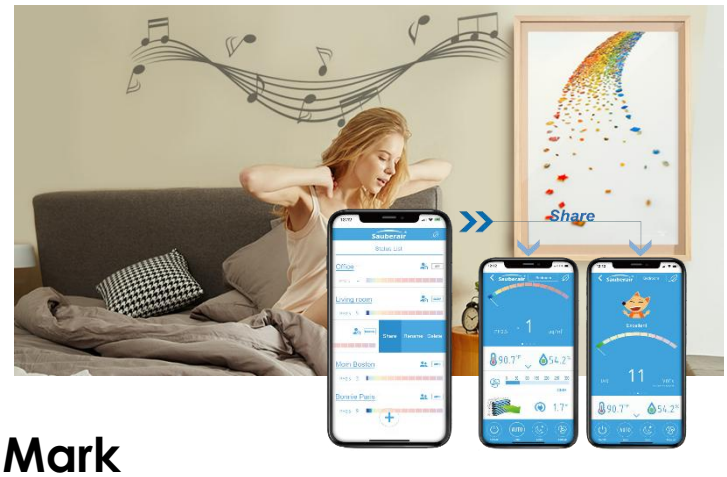
Tailored Filtration for Every Facility Type

With modular filtration, SauberAir FLAT™ adapts to diverse indoor needs:

- 3-year long lifespan **F8 filters**: Everyday protection, PM2.5 removal rate >99.9% certified by SGS.
- **H13** HEPA filters: Medical-grade performance, filtration efficiency 99.995% certified by TTRI.
- **Activated carbon filters**: Neutralises odours and VOCs
- **UV-C photocatalytic filters**: Destroys microbes and pathogens. Total bacteria removal rate>99.9% certified by SGS.

Smart Connectivity and Real-Time Air Monitoring

Built-in IoT sensors provide real-time IAQ insights via a mobile app. Facility teams are notified of filter status, air quality trends, and maintenance needs. An optional Bluetooth speaker enhances the user's experience in lounges or healthcare waiting areas.



Certification and Safety Mark

Certification Singapore Safety Mark 250462-11 & 140677-12, SS145, IEC61558, Conformity, FCC-Section 15.107 of 47 CFR Part 15 [10-01-23 Edition], ANSI C63.4:2014 and ANSI C63.4a:2017, HEPA H13 IEST-RP-CC001.1.5, CADR GB/T18801, GB/4214.1, CNS16098, CNS 60335-2-65, CNS 60335-1, CNS13783-1. CNS13438, CNS15633 RoHS, Korean KIEL_KC60335-1, K60335-2-65, R-R-jSG-FLAT-BT, Japan TELEC 201-210094

Conclusion: Smart Air Quality, Stronger Identity

SauberAir FLAT™ is not just an air purifier—it's a modern facility tool that enhances air quality, supports sustainability goals, and reinforces design intent. For Facility Managers, it delivers efficiency, elegance, and ease of integration into a wide variety of built environments.

Learn more or request a sample for your next project:

sales@aedition.asia | www.aedition.asia

This article was contributed by Aedition Technology to highlight approaches to improving indoor air quality in facilities. For more information, readers may contact the vendor directly. The views and claims expressed are solely those of the vendor and do not necessarily represent the views of Singapore International Facility Management Association (SIFMA) or Sustainability Development Committee.

Industry Event Announcement

SIFMA Sustainability and Development Committee Q3/Q4 Learning Journey

REGISTRATIONS ARE OPEN!

For more information or inquiries, contact us at **contact@sifma.org.sg.**

Subscribe/Feedback: Share your ideas and feedback to help us make this newsletter even more impactful.

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Quote: *"Sustainability is not just about meeting the needs of the present but ensuring future generations inherit a planet capable of thriving."*

– Lawrence Wong, Singapore's Prime Minister.

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