

WEAVE BEATS THE HEAT (THE GREEN WAY)

SUSTAINABILITY SPOTLIGHT SERIES

(6 MINS READ)

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HOTTER DAYS ARE HERE

In 2025, Singapore experienced its **hottest June and November** yet, and its **highest-ever heat stress reading**[1]. Daily temperatures are projected to rise by up to **5.3 °C** by 2100[2].

As the planet warms, **heat stress** has become the **top concern of climate change among Singapore residents**. Thus, the buildings where we live, work, and play in must adapt accordingly.

IMPACTS OF HEAT STRESS[3]

Increased **fatigue** and **irritability**, which impact concentration, productivity, mood and social interaction.

Habits are affected as people **cut back on outdoor activity** and **walking** to escape the heat.

Swipe to learn how indoor temperatures are managed in buildings!



1. https://www.straitstimes.com/singapore/environment/2025-a-year-of-weather-extremes-with-hottest-june-and-november-on-record-logged-met-report
2. https://www.mse.gov.sg/yoca/
3. https://www.straitstimes.com/singapore/heat-and-habits-survey-finds-hotter-days-changing-how-spore-residents-live



KEEPING IT COOL

Buildings need **space cooling**, which refers to any solution that lowers indoor temperatures, ensuring thermal comfort[4].

There are two types of space cooling:

ACTIVE COOLING and **PASSIVE COOLING**

4. https://www.iea.org/glossary#space-cooling

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ACTIVE VS PASSIVE COOLING



Active cooling refers to methods that *require energy or mechanical effort to remove heat*, such as fans and air-cons.

As external energy is used to speed up natural processes, it is **more effective** at reducing temperatures[5].

But this also means that active cooling is **energy intensive**.

Active cooling takes up approximately

60%

of a typical building's total energy consumption[6]

By 2050, energy consumption from active cooling is projected to

MORE THAN DOUBLE

On the other hand, **passive cooling** involves dissipating heat without energy input.

Instead of relying on mechanical systems, heat is controlled via *design choices* (e.g. shading, reflective surfaces on roofs and walls, building materials).

This maintains thermal comfort while consuming less energy[7].



5. https://scienceinsights.org/what-is-active-cooling-and-how-does-it-work/
6. https://www.nea.gov.sg/docs/default-source/cmd-documents/energy-efficiency/industrial-sector/scem/acmv.pdf
7. https://www.iea.org/reports/space-cooling-2
8. https://bdd.pseau.org/outils/ouvrages/ace_passive_cooling_strategies_2024.pdf

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As part of a resort-wide transformation, RWS' former retail space, Forum, evolved into **WEAVE** – our new lifestyle precinct that retains the Forum's alfresco charm while offering new experiences.

But there was a problem.

WEAVE was not oriented to maximise natural cooling. Furthermore, the basement stored large amounts of heat, especially from the carpark.

WEAVE didn't just have to cool – it had to cool *innovatively*.

COOLING WEAVE

"We wanted to create a space that would act as the heart of the resort – with longer dwell time, better day to night activation, and more leasable area, whilst emphasising sustainability."

- Nartano Lim, Vice President (Projects)

From left to right: Chin Win Low (Director, Projects: Design Management), Nartano Lim (Vice-President, Projects), Kelvin Koh (Senior Director, Projects: MEP Management)

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WEAVE'S PASSIVE COOLING

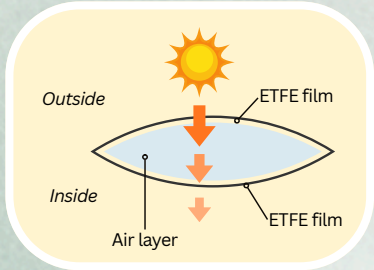


ETFE ROOFS

Look up at our ETFE roofs sheltering you from rain and sun!

Ethylene Tetrafluoroethylene (ETFE) is a lightweight and durable material that minimises indoor heat gain while **allowing natural daylight to pass through**.

Not only does it help indoor greenery grow, it also reduces reliance on artificial lighting, saving energy.



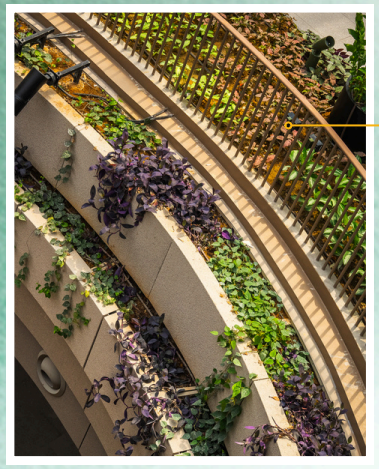
DID YOU KNOW?

In the revamp of the Forum, the old ETFE material was upgraded to deflect up to **80% of solar radiation!**

NATURAL VENTILATION

Porosity is a key trait of WEAVE's architecture. Its tunnel-like form **allows wind to flow through** the space effectively, promoting natural ventilation.





BIOPHILIC ELEMENTS

The abundant greenery in WEAVE isn't just for aesthetics! Unlike concrete, **plants trap less heat**, reducing indoor temperatures. Large indoor greenery can also make spaces ***feel*** **up to 2 degrees cooler**[9], boosting thermal comfort.

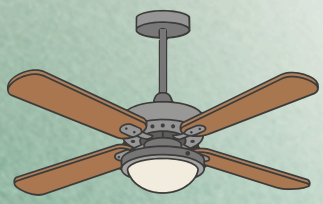
9. https://phys.org/news/2026-02-evidence-indoor-quietly-reshape-health.html



WORKING IN TANDEM

Despite its lower energy consumption, passive solutions *alone* cannot match the efficiency of active systems.

Hence, at WEAVE, a **hybrid solution** is adopted.



High-volume low-speed (HVLS) fans



Heat pump technology

Cold water from RWS hotels' hot water generation is recovered and used to cool down air, which is then channelled into WEAVE.

These **active cooling** technologies **complement** the **passive** ones, balancing effective cooling with energy savings.

Energy use is further optimised using **environmental sensors** that track real-time conditions, ensuring that energy is used only where needed.

These passive and active innovations earned WEAVE the **BCA Green Mark Platinum** certification, underscoring our commitment to climate-smart design.

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THE FUTURE OF HEAT MANAGEMENT

Thoughtful building design and innovative solutions are redefining heat management, proving that comfort need not come at the expense of the planet.

By prioritizing passive strategies, hybrid approaches and smart controls, we can create spaces that keep people cool – the green way.

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Explore RWS at your own pace with our self-guided sustainability tour.

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