



BUILDING INDUSTRIES



JTC Decarbonisation Living Lab Innovation Call 2026 (DECAL 2.0)

DECAL 2.0 Briefing
26 January 2026



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Challenge 3: Sustainable Water Usage - Reducing water-intensive cleaning through long-lasting, sustainable facade maintenance

Background

Frequent, water-intensive cleaning of building facades leads to significant water consumption and safety risks. Contaminants often recur shortly after cleaning, creating a costly and inefficient cycle.

Desired Outcomes

- Achieve a reduction in water consumption for facade cleaning by at least 30%.
- Extend cleaning cycles (E.g. from annually to every 3-5 years or longer)

Key Requirements

- TRL 7 or above.
- Repeatable with consistent, uniform outcomes.
- Compatible with heritage finishes.

Test Sites

- Jurong Town Hall (JTH) (Site visit: [3 Feb 26, 10am](#)).
- JTC Aviation One and Two @ Seletar Aerospace Park (Site visit: [28 Jan 26, 10am](#)).

>30%
Reduction in Water Consumption

3-5 Years
Extended Cleaning Cycle



Please scan for Challenge Statement 3 detail

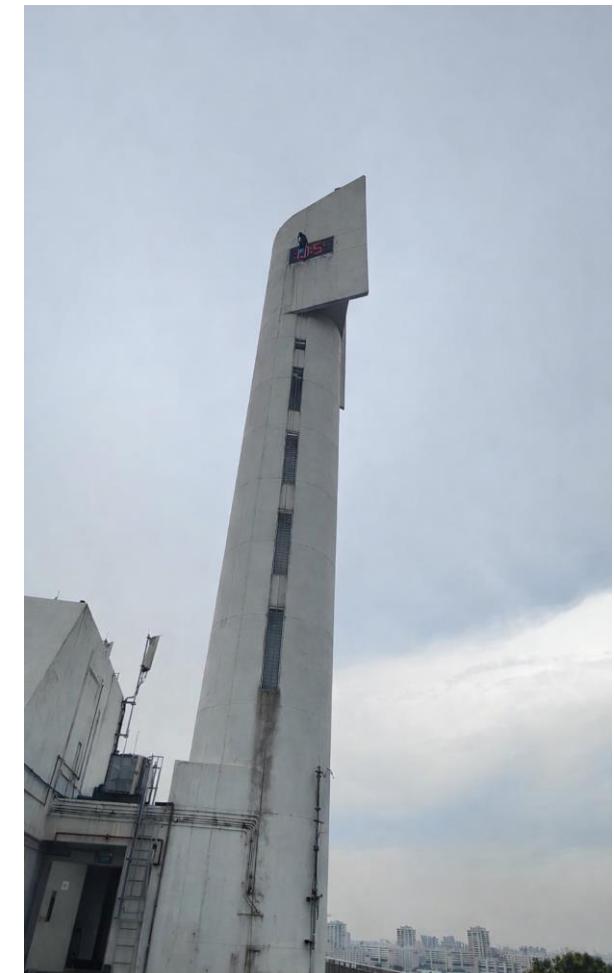
Points to note

Jurong Town Hall (JTH) is heritage building with irregular façade shapes, white Shanghai plaster finishes and tall clock tower.

The team is looking forward to solutions that achieve streak-marks-free, longer-lasting cleaning results to reduce cleaning frequency, while effectively reducing water consumption for façade cleaning. The solutions must also comply with National Heritage Board (NHB)'s conservation guidelines and be compatible with the white Shanghai plaster finish.

Supplementary Information

- The last façade cleaning operation was conducted in March 2025, estimated water used was about 10,000 Liters.



Points to note

JTC Aviation One & Two buildings is situated near Seletar Reservoir. The buildings face persistent mould and dust accumulation on their external facades.

The build-up occurred as early as 3 months after façade cleaning was performed. These recurring issues suggest the presence of certain phenomenon or condition that encouraged the growth of mould and dirt build up. Preventive solution preferred over corrective solution.



- For JTC Aviation One & Two, the recent facade cleaning utilised approximately 20,000 Liters of water to cover a total facade area of 5,259 and 14,002 square meters, respectively.
- Average facade cleaning cost for JTC Aviation One & Two is approximately \$25,000.00 per engagement.



Thank you.



Technology Readiness Level (TRL)

TRL	Description	Definition
0	Idea	Unproven concept, no testing has been performed
1	Basic Research	Basic principles postulated and observed but no experimental proof available
2	Applied Research	Concept and application have been formulated
3	Critical Function	First Laboratory test completed; proof of concept
4	Concept Validation	Small Scale Prototype built in a laboratory environment; technology validated in laboratory
5	Validation of Integrated System	Component and/or validation in a relevant environment
6	Verification of Integrated System	System model or prototype tested in intended environment close to expected performance
7	Demonstration System	Operating in operational environment at pre-commercial scale
8	System Completed and Qualified	Manufacturing issues solved
9	Full commercial application	Technology available for consumers