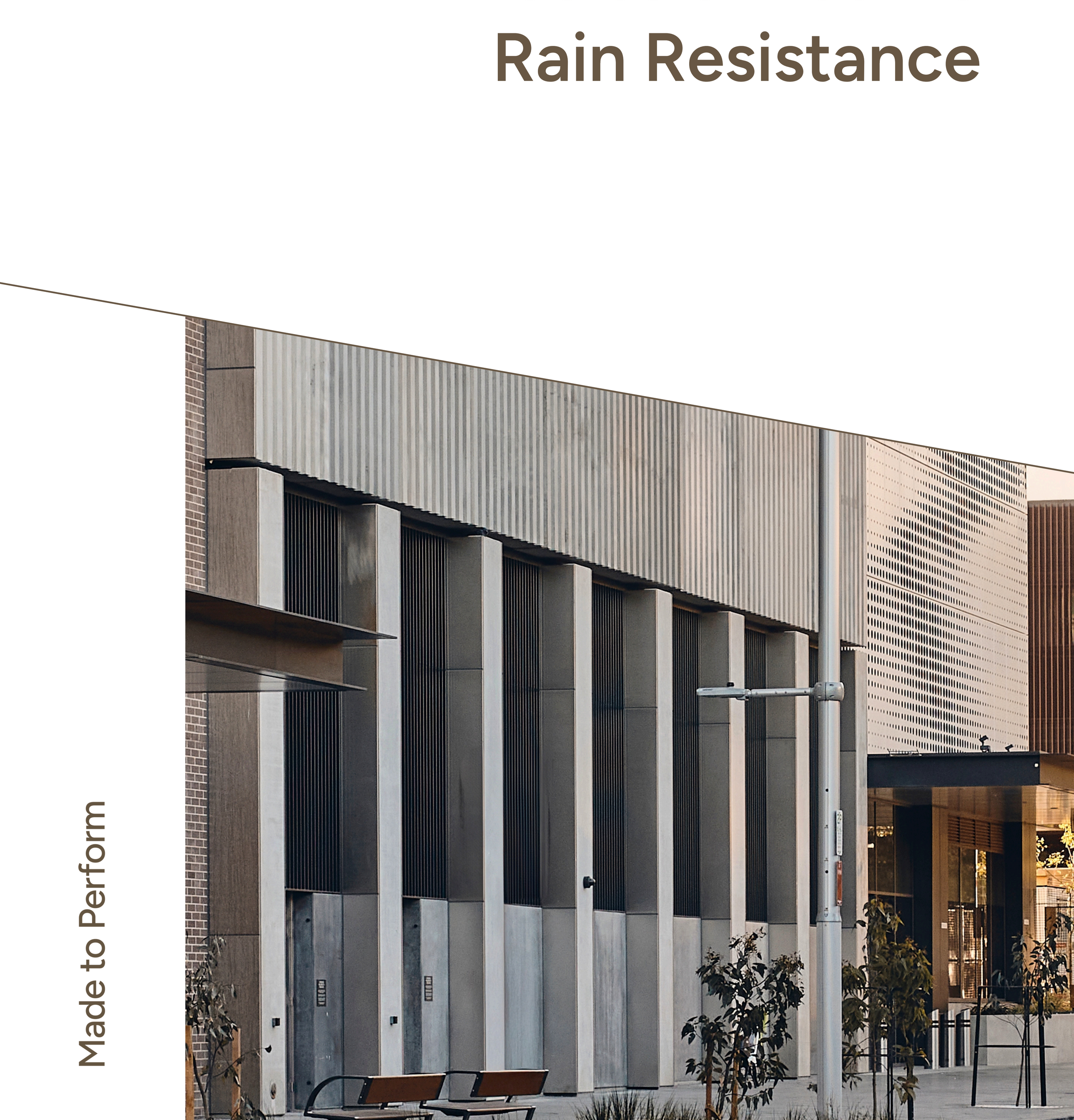
Louvreclad®
architectural exteriors

Basics of Louvre Rain Resistance



Made to Perform

AS4740:2025 Test classifications versus reality

AS 4740:2025 provides standardised rain-defence classifications for comparing louvres under specified test conditions. Ratings range from Class A, the highest, to Class D: Class A represents 99–100% effectiveness, Class B 95–98.9%, Class C 80–94.9%, and Class D less than 80%. Even a reported effectiveness of 100% does not establish absolute watertightness: water penetration may be below the measurement or reporting resolution.

Class A under standard test conditions is not equivalent to Class A under extended test conditions. Standard testing uses 13m/s wind blowing directly onto the louvre face and a nominal rainfall rate of 75L/h/m²; extended testing uses 22.4m/s wind and 203L/h/m². The classification must therefore be read alongside the test conditions and intake core velocity. Achieving Class A under standard conditions does not demonstrate Class A performance under extended conditions.

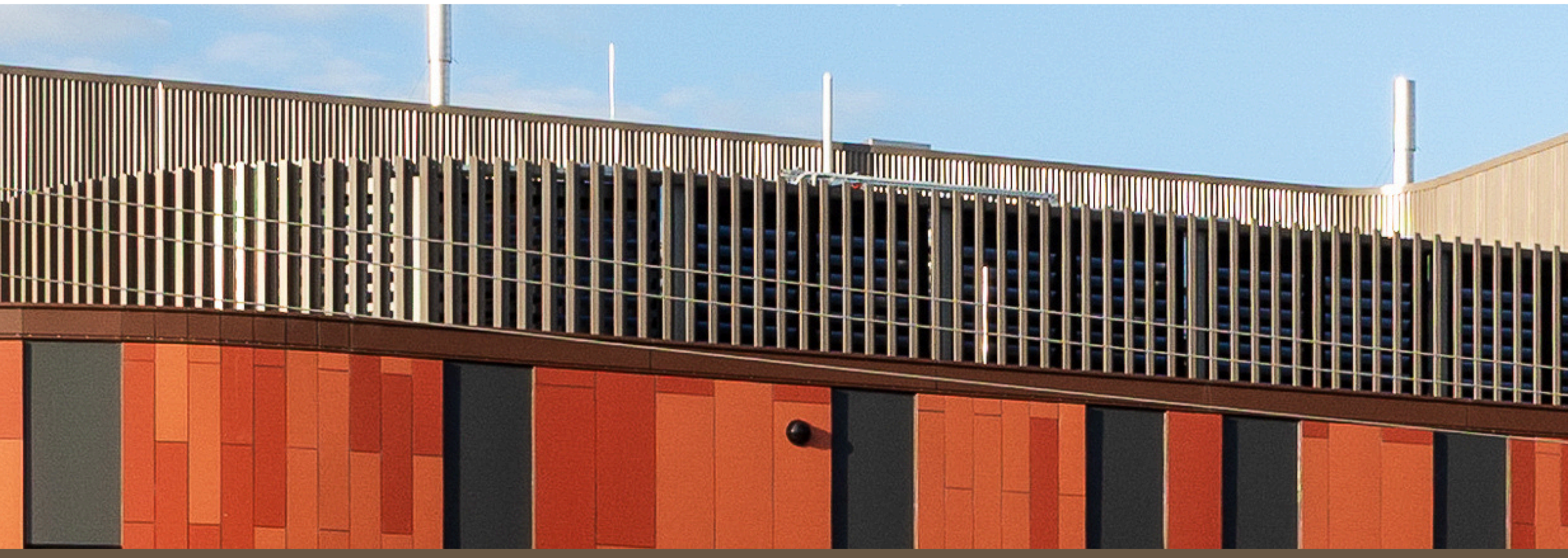
Applying the published effectiveness bands to the nominal rainfall rates illustrates the quantities of water associated with A and B classes:

Test conditions	Class A water penetration	Class A water penetration
Standard: 75L/h/m² rainfall (= 75mm/hr) 13 m/s wind normal to louvre face	0–0.75 L/h/m² of louvre	0.825–3.75 L/h/m² of louvre
Extended: 203L/h/m² rainfall (= 203mm/hr) 22.4 m/s wind normal to louvre face	0–2.03 L/h/m² of louvre	2.233–10.15 L/h/m² of louvre

Whether these quantities are acceptable depends on what is behind the louvre, the duration of exposure and the drainage provided.

These nominal examples explain the classification bands; they are not predictions or guaranteed limits for project water penetration. Actual project performance depends on many factors including wind speed and direction, actual intake airflow, rainfall intensity and droplet-size distribution, louvre installation details, drainage and other environmental and site-specific conditions.

The classification is therefore a starting point for selection. The following sections explain how to assess the louvre's location and exposure, understand the airflow through it, define acceptable water entry and determine when a project-specific assessment is required.





Louvre location, selection and rain resistance risk

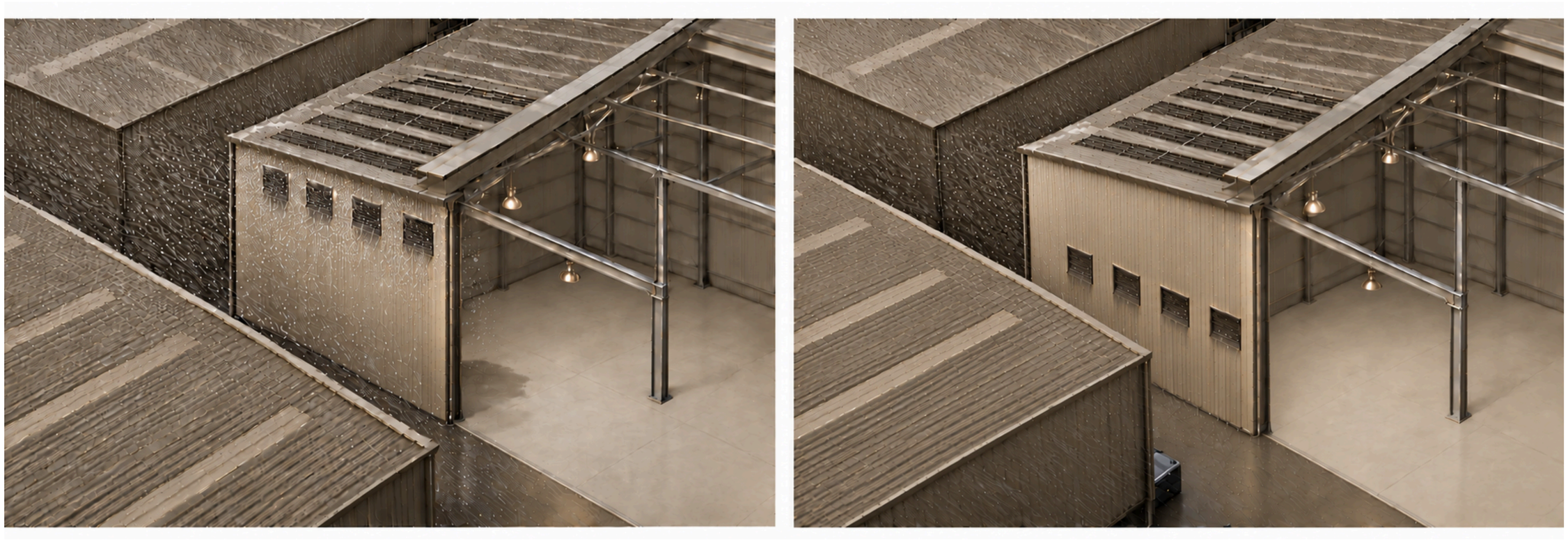
No louvre is waterproof. Selecting a suitable louvre requires assessment of its location, airflow and the consequences of water entering the building.

Locations with greater exposure to wind-driven rain generally present a higher risk of rain penetration:

- Louvres mounted high on a building or above surrounding buildings.
- Façades facing the main wind-driven rain directions.
- Locations where nearby buildings accelerate or redirect wind and rain towards the louvres.

To reduce the risk of rain penetration:

- Select louvres with a higher rain-resistance classification under AS 4740:2025, verified at the required airflow rate.
- Position louvres in sheltered, lower façade locations where practical, subject to assessment of local wind and rain exposure.
- Where practical, increase the louvre area to reduce ventilation rate through louvre while maintaining the required airflow rate.
- Prevent façade runoff and ground splash from entering the opening, and carefully detail flashings, joints and drainage.
- Consider recesses, overhangs or secondary weather protection.



Greater wind-driven rain exposure | **Reduced exposure where adjacent buildings provide shelter**

Conceptual illustration. Exposure depends on the wind direction and surrounding geometry.

Define the project requirements

A suitable louvre cannot be specified until the project's rain-resistance requirements and acceptable level of water penetration have been defined:

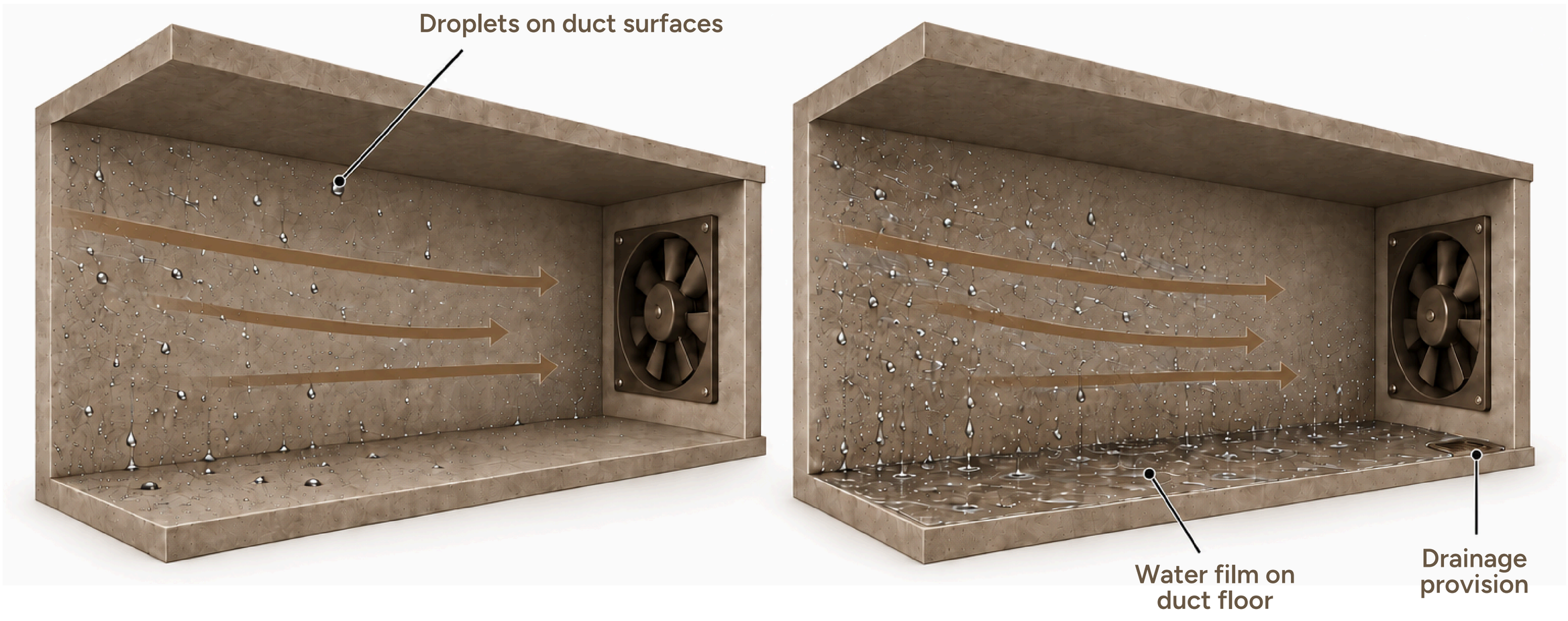
- Identify what needs protection and how much water entry can be tolerated. Confirm whether drainage and/or waterproof finishes will be provided behind the louvres.
- Define the maximum acceptable water penetration rate and accumulated volume, rain annual exceedance probability (AEP) and duration.
- If zero water penetration is required, a Class A rating alone does not demonstrate compliance. Assess whether the proposed location, additional weather protection or an alternative arrangement can meet this requirement.

DEFINE ACCEPTABLE WATER ENTRY

View downstream of the louvre

LIMITED DROPLET PENETRATION

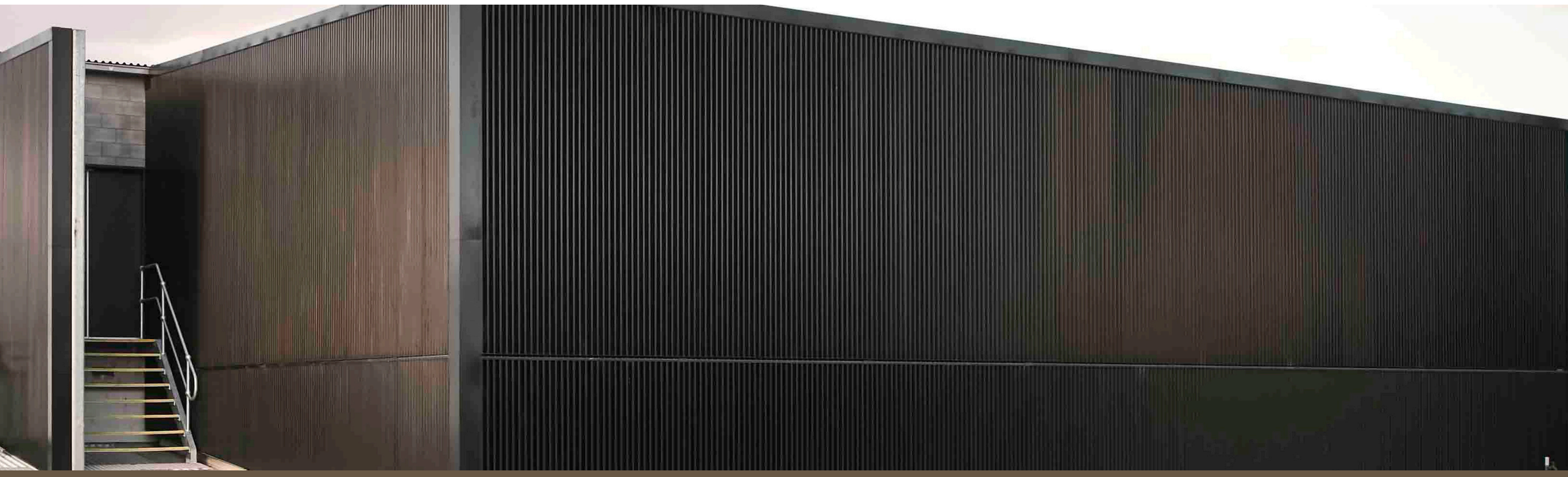
GREATER WATER PENETRATION



Define acceptable surface wetting

Define acceptable water accumulation and drainage

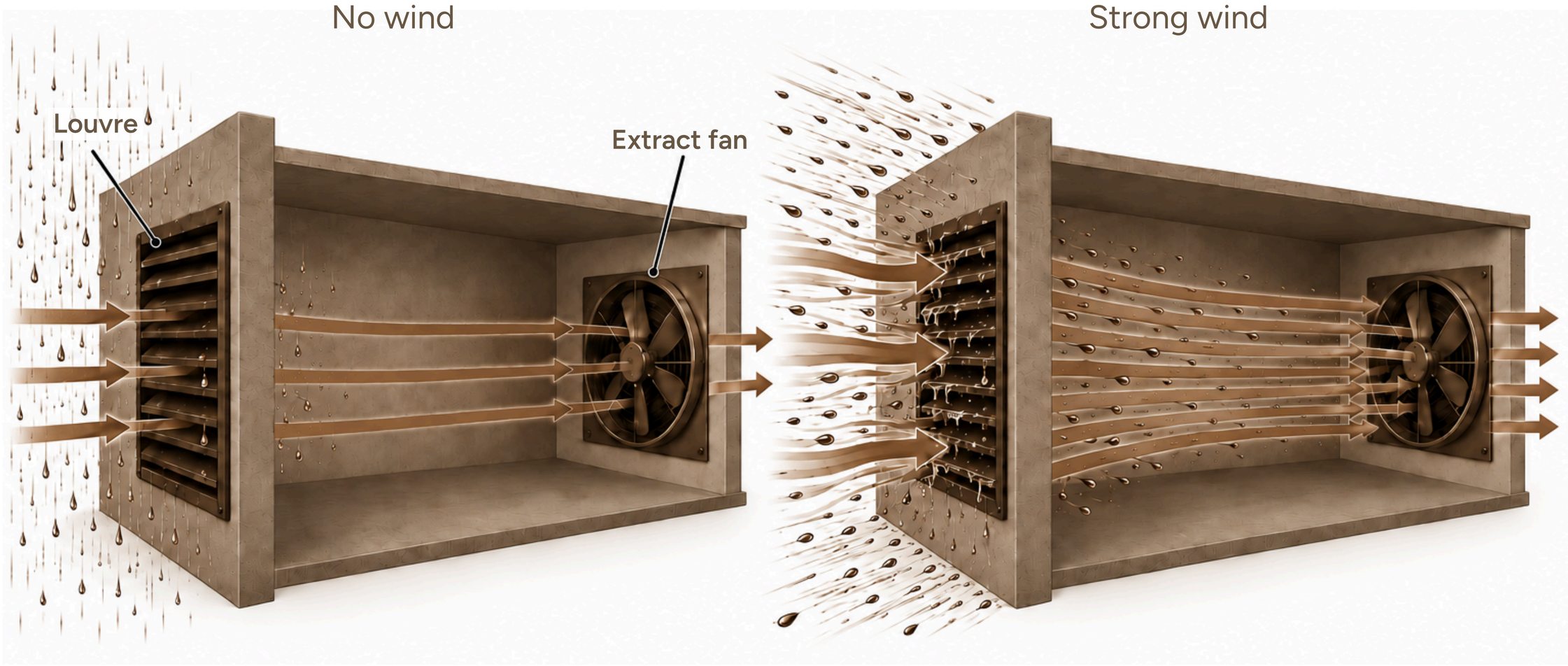
Illustration conditions only. Acceptable water entry must be defined for the project.



Understand the airflow and rain resistance

Louvres cover openings in the façade through which air enters or exits. Airflow is driven by fans, differences between external and internal building pressures, or both.

- Building pressures vary with wind speed and direction, building geometry, shielding and openings such as ridge vents, doors and windows. Wind-induced pressure differences can exceed those generated by ventilation fans and increase and/or reverse the intended airflow direction. The louvre's operating environment therefore needs to be understood.
- Intake airflow can carry rain through the louvre into internal spaces. Increasing the louvre area reduces air velocity at the required airflow rate, generally reducing rain penetration. However, wind-induced pressure differences can still drive high intake velocities, so increasing louvre area alone does not mitigate all risk.
- Rain resistance also depends on the angle at which wind-driven rain strikes the louvre face, relative to the blade orientation.



Conceptual illustration. Airflow depends on wind pressure, fan characteristics and system resistance.

Arrange a project specific assessment

Louvreclad's rain-resistance selector provides a preliminary selection based on rainfall intensity, louvre location, acceptable water entry and intake airflow. Where the selector recommends referral, or project conditions extend beyond the available test data, contact Louvreclad for a project-specific assessment to support louvre selection and installation location advice.

Provide the site address, plans and elevations, louvre dimensions and locations, airflow requirements, operating scenarios, details of connected building openings and acceptable water penetration criteria. Where wind-driven airflow may govern selection, if possible provide the total intake core velocity during rain assessed by the project's suitably qualified engineer, including simultaneous mechanical operation where applicable.

The assessment follows the selector's sequence:

1. Confirm whether rain resistance is required, considering what needs protection and the consequences of water entering the building.
2. Establish the relevant rainfall intensity. The selector adopts the nearest capital city's 1% AEP, five-minute rainfall intensity, or a user-supplied site-specific value. Confirm whether this design event and duration are appropriate for the project.
3. Assess the proposed louvre location and exposure. Consider height, surrounding rooflines, orientation and local effects that may concentrate wind and rain. Review the selector's adopted standard or extended test conditions. Its location criteria guide preliminary selection; they do not establish the actual wind speed at the louvre.
4. Define acceptable water entry. Review the indicative rainfall-scaled penetration rates and five-minute volumes against the project's tolerances, drainage capacity and consequences of water entry. Where no water entry is required, assess additional protection or alternative arrangements rather than relying on a Class A rating alone may be required
5. Confirm the governing intake core-velocity range. Review whether other openings connected to the same internal space can be open during rain. Where required, obtain an engineer-assessed total intake core velocity that accounts for wind-driven airflow and simultaneous mechanical operation.
6.. Review candidate louvres against the required classification, adopted test conditions and intake core-velocity range from zero to the governing velocity. Assess differences between the project and test conditions, including installation, drainage and environmental factors. Where the available evidence is insufficient, consider detailed assessment using multiphase CFD and/or additional testing, or review the louvre location, design and secondary rain protection.



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Reach out today to discuss your facade solution requirements;
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