

ARCHITECTURAL LOUVRES

For buildings
that thrive.



Construction Specialties®

Helping you build *big dreams.*

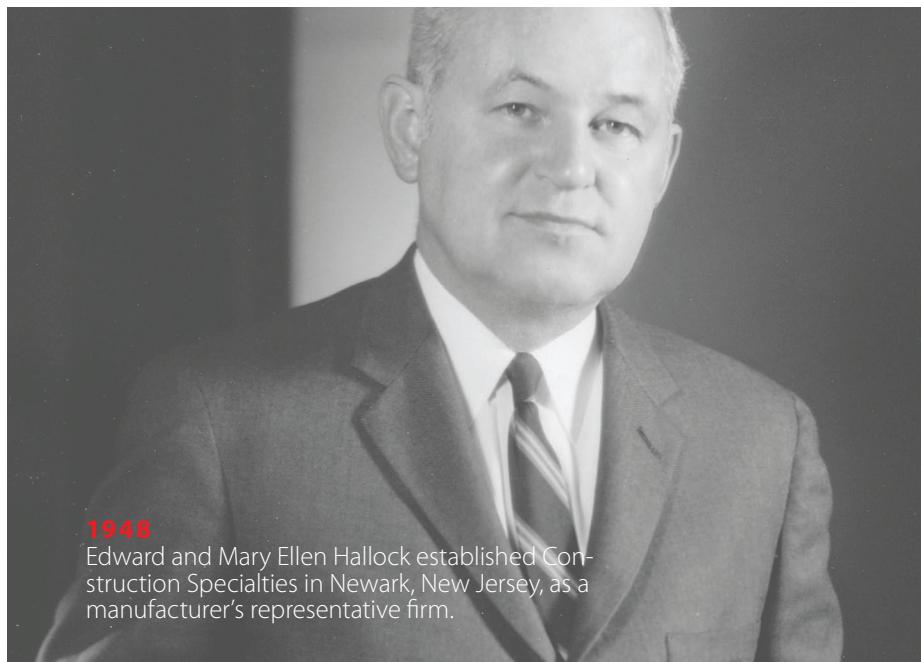
We start with a simple promise: offer the highest quality service, products, and expertise to help the building industry create amazing places. And since 1948, we've done that by taking a listen-first approach to discover what you really need. That's led us to create innovative products and enabled us to not only solve problems but also to create opportunities to help you build better.

ONE VANDERBILT
NEW YORK, US
RS-5605 RAIN DEFENCE LOUVRES



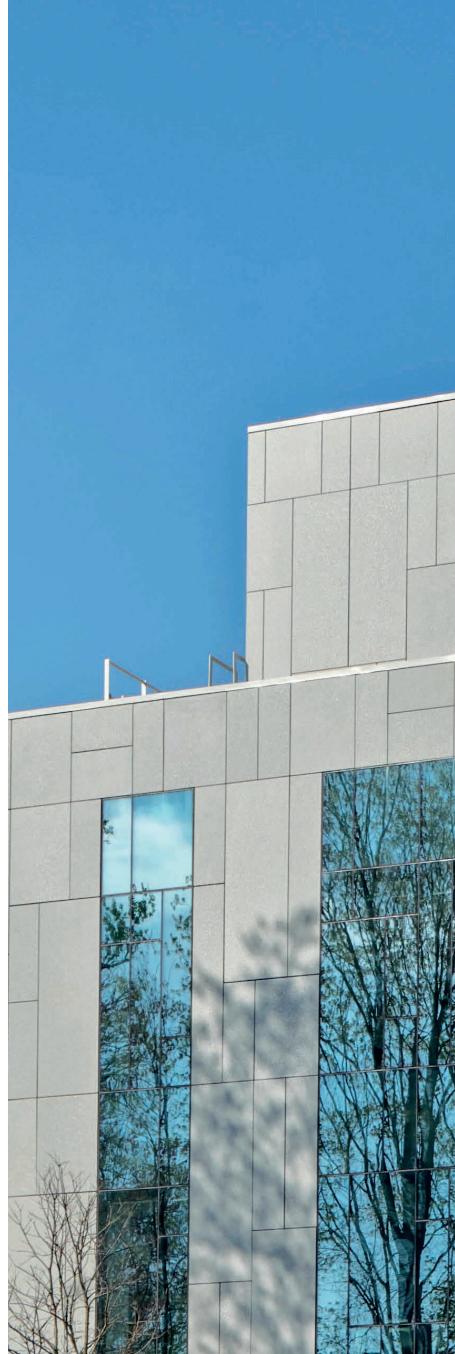
Leading *with excellence.*

We're always challenging ourselves to live up to your highest standards. So, when you find that what's out there doesn't work for you, we're willing to partner with you to find new solutions for your projects. It's an approach that's helped set the bar for the industry and can help you realise a world of possibilities.



1948

Edward and Mary Ellen Hallock established Construction Specialties in Newark, New Jersey, as a manufacturer's representative firm.



75+

Years of excellence in the
architectural products
industry



UCONN STEM RESEARCH CENTER
STORRS, US
PERFORM™ LOUVRES



LEADERS IN THE INDUSTRY

We manufacture the highest quality architectural products for architects, designers, engineers, and contractors to create resilient spaces and drive innovation in the building industry.



Solutions from *the outside in.*

A beautiful building is just the beginning. Our goal is to partner with you to transform your project into a vibrant space that positively impacts its occupants – whether that means protection from the elements, making a visual statement, or anything in between. Let's make it memorable together.

ARCHITECTURAL LOUVRES

EXPANSION JOINT COVERS

SUN CONTROL SOLUTIONS

ACROVYN WALL & DOOR PROTECTION

ACROVYN DOORS

ENTRANCE FLOORING SYSTEMS



View our full
product range:

c-sgroup.co.uk/28



PREBYS CARDIOVASCULAR
INSTITUTE, US
RAIN DEFENCE LOUVRES



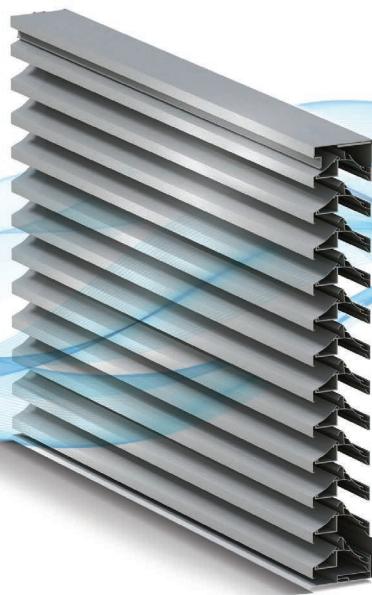
ARCHITECTURAL PRODUCTS

Architectural *Louvres*

 **Construction Specialties**

Helping buildings *to breathe.*

Louvres are essential to any successful building, allowing airflow in while keeping unwanted elements, like rain, outside. They can also become an integral part of your building's exterior, adding architectural interest, whilst ensuring all functional requirements are met.



AIRFLOW ISN'T A RESTRICTION. IT'S AN OPPORTUNITY.

Architects can rely on CS louvres to complement mechanical systems and simultaneously provide architectural interest.

ST REGIS
CHICAGO, US
RSV-5700 RAIN DEFENCE LOUVRES



Global *solutions.*

Since developing the industry's first extruded aluminium louvre in 1950s, we've introduced many new and better solutions to customer challenges. We've been privileged to collaborate on thousands of projects worldwide, helping architects and specifiers realise their design vision and achieve the required performance.



View some of our
projects:

c-sgroup.co.uk/11674



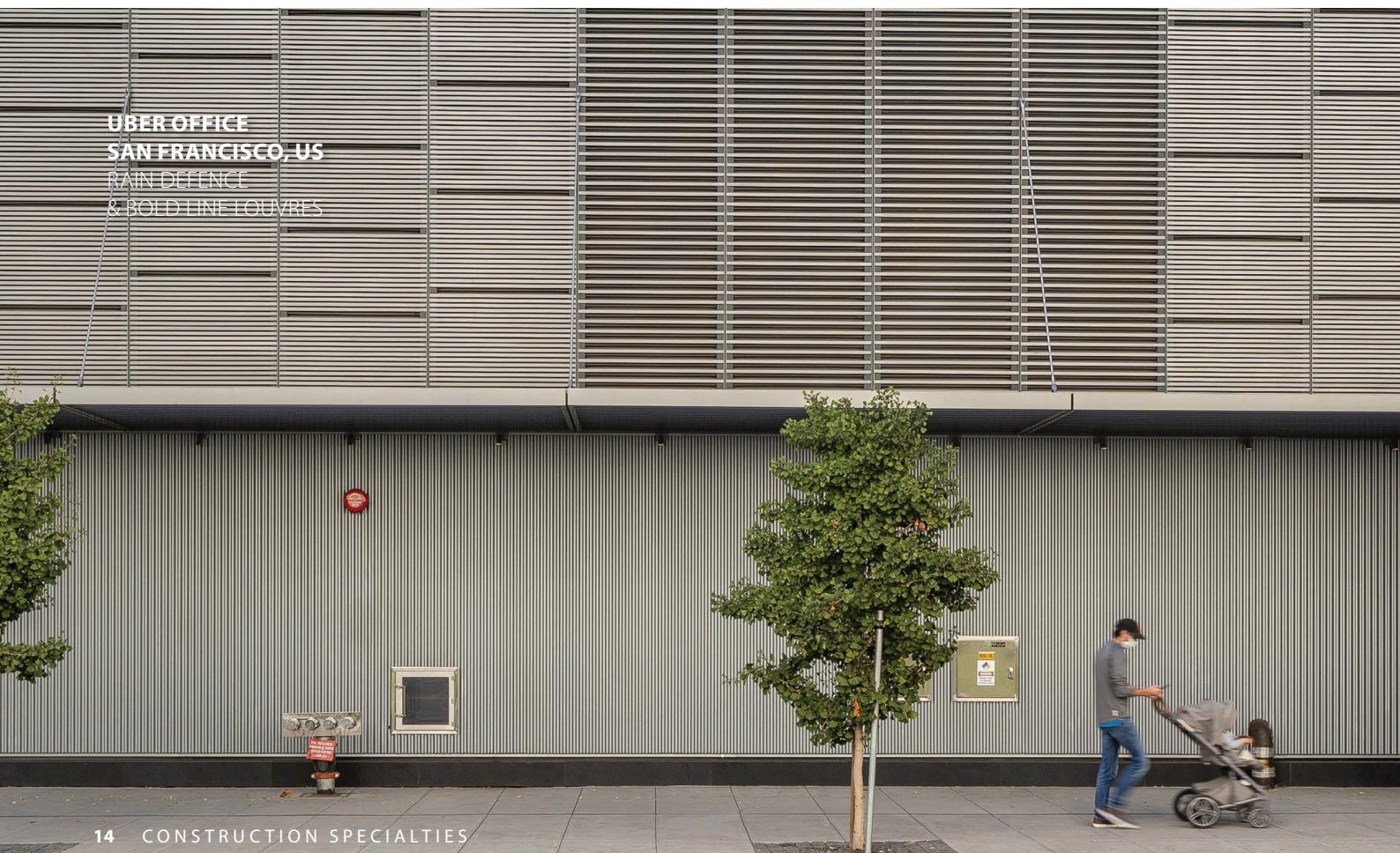


Integrate into any design.

While some louvres are all about standing out, others are more about blending in. Whether you want your louvre to be a major design element or simply disappear into the façade of your building, we have options that will work beautifully.

Learn more about
design options:

c-sgroup.co.uk/23432



412 WEST 15
NEW YORK, US
RSH-5700 RAIN DEFENCE LOUVRES



Tested and certified *for peace of mind.*

The importance of proper airflow for health, safety, and energy efficiency has never been greater. At CS, we take this responsibility seriously. That's why we rigorously test our louvres, ensuring they deliver the performance you need with confidence.

All our standard rain defence and ventilation louvre models sold in Europe are third-party tested to EN 13030:2001 'Ventilation for buildings – Terminals – Performance testing of louvres subjected to simulated rain'.

EN 13030

Two aspects of performance are measured during the test:

- *Water penetration*
The ability of the louvre to prevent wind-driven rain ingress. The test simulates 13 m/s winds and 75 mm rain per hour, and measures the louvre's performance at core velocities from 0 m/s to 3.5 m/s.
- *Airflow*
The airflow characteristic of the louvre (expressed as Discharge and Entry Loss Coefficient Class)

The test results enable specifiers to directly compare the performance of different rain defence louvre models.

A single louvre design classification should be accompanied by the limiting core velocity, for example **Class A 2 up to 2 m/s.**

NOTE: Whilst simplifying the selection process, the test results reflect the performance of a one-off test panel, 1 m² in size. The test does not measure or give consideration to the way the water is collected and drained from larger louvre installations.



IN-HOUSE TESTING CAPABILITY

PENETRATION CLASSIFICATION

Class	Effectiveness	Max. allowed rain penetration (l/h/m ²)
A	1 to 0.99	0.75
B	0.989 to 0.95	3.75
C	0.949 to 0.80	15.00
D	Below 0.80	Greater than 15.00

Water penetration effectiveness is measured for each of eight face velocities between 0 m/s and 3.5 m/s. Louvre penetration class should always be expressed in the context of the face velocity it was measured at.

DISCHARGE LOSS COEFFICIENT CLASSIFICATION

Class	Discharge Loss Coefficient	Rating
1	0.4 to 1	Excellent
2	0.3 to 0.399	Very Good
3	0.2 to 0.299	Good
4	0.199 & below	Fair

Discharge/entry loss coefficient is expressed as a single class, based on an average result over at least five air velocities. Class 1 indicates the least and Class 4 the most resistance to airflow. The higher the value, the lower the energy usage.



In addition to testing our louvres at Building Services Research and Information Association (BSRIA), a leading independent test laboratory, we can verify how our products will perform in real-life conditions by testing them in our own wind-driven test chamber. The chamber allows us to replicate the test standards for airflow, still air water penetration and wind-driven rain.

Sustainable solution.

Durable and infinitely recyclable, aluminium is a highly sustainable material. Additionally, our louvre extrusions are made of an alloy that contains at least 55% recycled content.

Recently, we were awarded Cradle to Cradle Certified certification for the louvres manufactured at our UK facility, which recognises our commitment to providing safe and responsibly made products.

Materials

Our aluminium louvre extrusions are typically made of a 6063-T6 alloy, commonly referred to as an architectural alloy, which provides excellent corrosion resistance.

The standard alloy we use contains at least 55% recycled pre-and post-consumer scrap content.

Contact us for more information or to discuss your project requirements.



Cradle to Cradle Certified® Bronze

CS Architectural Louvres, manufactured at our Westcott facility in the UK, are C2C Certified® Full Scope Bronze, giving you confidence to specify them in green building schemes. The certification applies to a range of colours and finishes.

For more information and certification scope, visit:
c-sgroup.co.uk/38764



Cradle to Cradle Certified is a registered trademark of the Cradle to Cradle Product Innovation Institute.



ARKON ENERGY
GLOMFJORD, NORWAY
RAIN DEFENCE LOUVRES

A louvre for every demand.

The principal reason for using louvres is to allow the movement of air, but there are often additional considerations at play. Many projects will need protection from wind-driven rain ingress to prevent damage to expensive HVAC equipment. Sound attenuation or blast resistance can be an important specification factor too.

Whatever your project's performance criteria – we've got it covered.

Learn more about our solutions for:

RAIN DEFENCE	Designed to resist wind-driven rain entry	→ 22-27
VENTILATION	Maximise airflow performance; water entry is acceptable	→ 28-31
SCREENING	Conceal equipment or unsightly areas of the building	→ 32-35
ACOUSTICS	Effectively manage noise transfer	→ 36-39



Explore our
Architectural Louvres:
c-group.co.uk/2369



ARKON ENERGY
NORWAY
RSH-5700 RAIN DEFENCE LOUVRES



MANCHESTER ENGINEERING
CAMPUS (MECD), UK
RSV-5700 RAIN DEFENCE LOUVRES



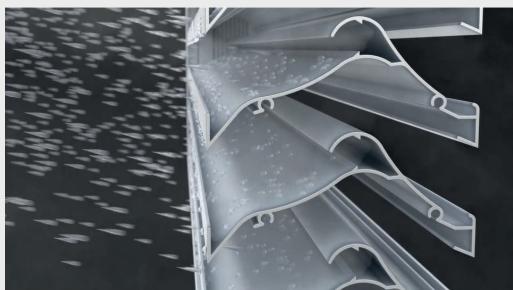
Weatherproof *your designs.*

Engineered to provide excellent protection from rain penetration and good airflow, our Rain Defence models are available in a choice of blade configurations, can be hidden behind attractive perforated screens or can feature different blade depths to integrate beautifully with your building.

They are ideal when:

- Reliable resistance to wind-driven rain is a priority
- Using a large plenum behind louvres is impractical due to cost or space considerations
- Sensitive equipment will be housed close to the louvre system
- Integrating louvres into the building design is a priority. They can be housed behind architectural features or continuous line louvres

See how our Rain Defence Louvres work



c-sgroup.co.uk/38027

Our precision-engineered, extruded louvres maximise performance while minimising space requirements. Watch a video to see how rain water is separated from the airflow, collected and drained.





99 HUDSON
JERSEY CITY, US
RSV-5700 RAIN DEFENCE LOUVRES

Compare Rain Defence Louvres

Our range of weather louvres offers blade configurations and frame styles to perfectly match your needs. Experience superior weather protection, optimal airflow, and space-saving design.



For more information and to download Product Sheets, visit:

csgroup.co.uk/2409



				
Product Name	RSH-5700	RSH-5700AL	RSV-5700	RS-4605
Penetration Class¹	A up to 3.0 m/s	A up to 3.0 m/s	A up to 3.5 m/s	A up to 3.5 m/s
Airflow Class¹	2 (entry), 3 (discharge)	2 (entry), 3 (discharge)	3 (entry & discharge)	3 (entry & discharge)
Airflow Coefficient¹	0.309 (entry) 0.274 (discharge)	0.309 (entry) 0.274 (discharge)	0.287 (entry) 0.251 (discharge)	0.268 (entry) 0.257 (discharge)
Horizontal Joint	Visible or invisible	Visible or invisible	Visible	Visible
Vertical Joint	Visible (interlocking)	Recessed mullion (interlocking)	Visible (interlocking) or invisible	Visible or invisible
Blade Pitch	51 mm	51 mm	51 mm	51 mm
Depth	129 mm	129 mm	129 mm	106 mm
Glazing Frame Option	Yes (depth - 133 mm)	Not applicable	Yes (depth - 133 mm)	Yes (depth - 108 mm)
Blast Resistant Option	Yes	No	Yes	No
Burglar Resistant Option	Yes (RC2)	No	Yes (RC2)	No
Max Module Height²	3600 mm	3600 mm	3600 mm	3048 mm
Max Module Width²	3600 mm	3600 mm	3600 mm	3600 mm

¹ Tested to EN 13030. For full performance data, refer to the Performance Datasheet or contact us for the test report.

² Based on 1.5 kPa wind load. Subject to weight considerations.

³ Maximum perforated sheet size is approx. 3550 x 1400 mm. Units exceeding this size will have joints in the perforated sheet. Perforation is directional.

412 WEST 15TH STREET

NEW YORK, US

RSH-5700 RAIN DEFENCE LOUVRES



				
RS-5900	RS-3900	RS-5605	PL-5700	B-7505
A up to 3.5 m/s	A up to 3.5 m/s	A up to 3.5 m/s	A up to 3.0 m/s	A up to 2.5 m/s
2 (entry & discharge)	2 (entry & discharge)	1 (entry & discharge)	3 (entry & discharge)	2 (entry), 3 (discharge)
0.342 (entry) 0.352 (discharge)	0.326 (entry) 0.388 (discharge)	0.466 (entry) 0.421 (discharge)	0.252 (entry) 0.222 (discharge)	0.324 (entry) 0.273 (discharge)
Visible	Visible	Visible	Louvre modules positioned behind perforated screen	Visible or invisible
Visible (interlocking)	Visible (interlocking)	Visible (interlocking) or invisible		Multiple options
38 mm	22 mm	25 mm	51 mm	51 mm
130 mm	82 mm	131 mm	191 mm	183 mm
Yes (depth - 133 mm)	No	Yes (depth - 133 mm)	Yes (depth - 191 mm)	No
Yes	No	Yes	No	No
No	No	No	No	No
3600 mm	3048 mm	2400 mm	3550 mm ³	3600 mm
3600 mm	3600 mm	3600 mm	3550 mm ³	3600 mm

Compare Architectural Line Louvres

Achieve the sleek, uninterrupted aesthetic of continuous blade louvres without sacrificing rain defence performance. Our double bank arrangements provide an elegant solution where both design and functionality are paramount.



For more information and to download Product Sheets, visit:

c-sgroup.co.uk/21928

				
Product Name	RS-8715	RS-8915	RS-9715	RS-9915
Penetration Class ¹	A up to 3.5 m/s	A up to 3.5 m/s	A up to 3.5 m/s	A up to 3.5 m/s
Airflow Class ¹	3 (entry & discharge)	3 (entry & discharge)	3 (entry & discharge)	3 (entry & discharge)
Airflow Coefficient ¹	0.260 (entry) 0.232 (discharge)	0.294 (entry) 0.299 (discharge)	0.259 (entry) 0.224 (discharge)	0.290 (entry) 0.287 (discharge)
Mullion Type	Hidden	Hidden	Hidden	Hidden
Blade Pitch (Front)	75 mm	75 mm	100 mm	100 mm
Overall Depth	208 mm	207 mm	229 mm	230 mm

¹ Tested to EN 13030. For performance data, refer to the Performance Datasheet or contact us for the test report.



Let your buildings breathe.

When superior ventilation is paramount, our ventilation louvres are the answer. Engineered to deliver exceptional airflow with minimal pressure drop, they offer a cost-effective solution while still providing essential weather protection. Choose from continuous line or modular mullion options to seamlessly integrate with your desired façade design.

They are ideal for:

- Projects prioritising maximum free area and high airflow
- Budget-conscious designs seeking optimal value
- Applications where occasional rainwater penetration is acceptable
- Designs aiming for a continuous, uninterrupted façade aesthetic

Calculate Louvre Area and Pressure Drop



c-sgroup.co.uk/38611

Achieving sufficient airflow through the louvres is critical for the effective operation of your ventilation systems. Use our handy online tools to establish the area of our louvre models required to meet your volume flow rate and pressure drop requirements, or to calculate pressure drop for a given louvre model and size.



117 PACIFIC HIGHWAY
HORNSBY, AUSTRALIA
A-4085 VENTILATION LOUVRES



Compare Ventilation Louvres

Explore our comprehensive range of ventilation louvres, designed to meet the diverse functional and aesthetic demands of your projects. For seamless integration into curtain walling or glazing, choose from models available with a glazing frame.



For more information and to download Product Sheets, visit:

csgroup.co.uk/2397



Product Name	A-3250	A-3200	A-4050	A-4080/A-4085
Penetration Class ¹	D up to 3.5 m/s	D up to 3.5 m/s	C up to 1.0 m/s	C up to 1.0 m/s
Airflow Class ¹	1 (entry & discharge)	2 (entry & discharge)	2 (entry & discharge)	2 (entry & discharge)
Airflow Coefficient ¹	0.400 (entry) 0.434 (discharge)	0.376 (entry) 0.394 (discharge)	0.338 (entry) 0.345 (discharge)	0.338 (entry) 0.345 (discharge)
Horizontal Joint	Invisible	Visible or invisible	Invisible	Visible or invisible
Vertical Joint	Invisible	Visible (interlocking) or invisible	Invisible	Visible (interlocking) or invisible
Blade Pitch	75 mm	75 mm	100 mm	100 mm
Depth	128 mm	102 or 150 mm ³	151 mm	102 or 154 mm ³
Glazing Frame Option	No	Yes (depth 108 mm)	No	Yes (depth 108 mm)
Blast Resistant Option	No	No	No	Yes
Max Height ²	Not applicable	3600 mm	Not applicable	3600 mm
Max Module or Blade Width ²	3000 mm	3000 mm	3600 mm	3600 mm

**MET OFFICE SUPERCOMPUTER
FACILITY, EXETER, UK**
A 3250 VENTILATION LOUVRES



		
A-6177	PL-4080	B-6485
C at 0 m/s	C up to 3.0 m/s	C up to 1.5 m/s
2 (entry), 1 (discharge)	3 (entry & discharge)	2 (entry & discharge)
0.380 (entry) 0.411 (discharge)	0.260 (entry) 0.253 (discharge)	0.370 (entry) 0.331 (discharge)
Visible or invisible Visible (interlocking) or invisible	Louvre modules positioned behind perforated screen	Visible or invisible Multiple options
146 mm	100 mm	100 mm
154 or min. 231 mm ³	191 mm	159 or 207 mm ³
No	Yes (depth 191 mm)	No
Yes	No	No
3600 mm	3550 mm ⁴	3600 mm
3600 mm	3550 mm ⁴	3600 mm

¹ Tested to EN 13030. For full performance data, refer to the Performance Datasheet or contact us for the test report.

² Based on 1.5 kPa wind load. Subject to weight considerations.

³ Model's depth depends on the specified mullion type (visible or hidden).

⁴ Maximum perforated sheet size is approx. 3550 x 1400 mm. Units exceeding this size will have joints in the perforated sheet. Perforation is directional.

Where concealment *meets style.*

Discover the simple yet elegant solution for concealing mechanical equipment or unsightly areas while maintaining airflow and enhancing the aesthetic appeal of your building. Our screening louvres offer a simple, cost-effective way to achieve a sleek, continuous appearance that seamlessly integrates with your design.

Choose screening louvres for:

- Projects seeking a budget-friendly, easy-to-install screening solution
- Applications where rain penetration is not a concern
- Designs that prioritise a clean, uninterrupted façade aesthetic



MAELFA
CARDIFF, UK
SLA-Z SCREENING LOUVRES



Compare Screening Louvres

We offer four screening louvre blade shapes to suit your design. The blades are clipped on site into mullions at pre-determined positions, streamlining installation and saving valuable time. For optimal rooftop screening, blades can be installed in an inverted orientation, ensuring maximum privacy and protection.



For more information and to download Product Sheets, visit:

csgroup.co.uk/2373



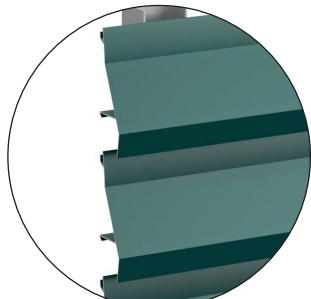
				
Product Name	SLA-Z	SLA-S	SLA-C	SLA-I
Blade Shape	Z-shaped	S-shaped	C-shaped	I-shaped
Mullion Type	Hidden	Hidden	Hidden	Hidden
Blade Pitch	100 mm	100 mm	100 mm	100 mm
Depth	70 mm	70 mm	70 mm	70 mm
Maximum Mullion Centres¹	1500 mm	1500 mm	1500 mm	1500 mm

¹ Based on 1.5 kPa wind load.

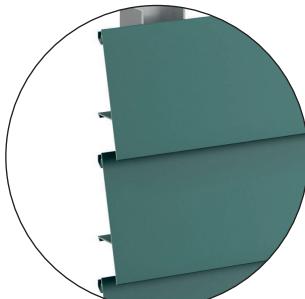
**GREENWICH SQUARE
LONDON, UK**
SLA-Z SCREENING LOUVRES –
ROOFTOP APPLICATION



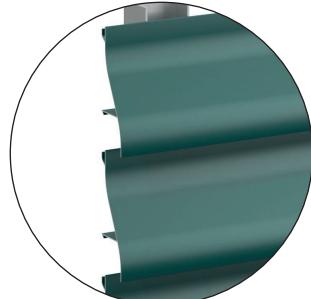
BLADE OPTIONS



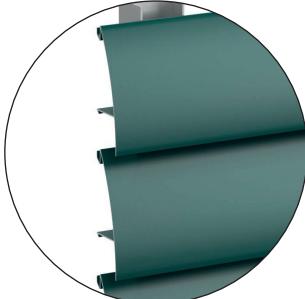
SLA-Z



SLA-I



SLA-S



SLA-C



Controlled sound, *uncompromised airflow.*

Where noise reduction and ventilation are both required, our Acoustic Louvres deliver the perfect solution. Whether as standalone screens, or integrated into building façades, they effectively mitigate noise pollution without sacrificing airflow. They can also be combined with any of our rain defence or ventilation models, if required.

Choose acoustic louvres for:

- Car parks, plant rooms, substations, cooling towers and any other application that requires both sound attenuation and ventilation
- Areas where noise levels that escape from exterior or interior walls need to be minimised





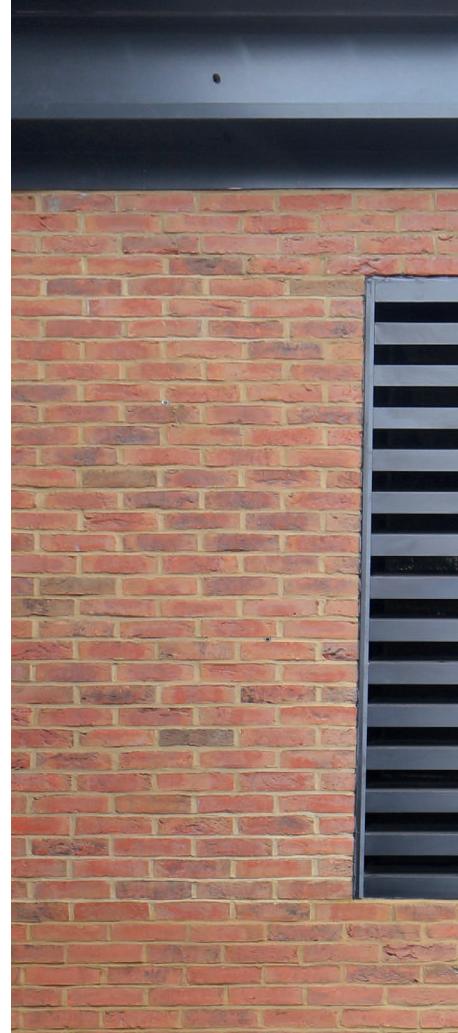
Compare Acoustic Louvres

Choose from three louvre depths and flat or chevron designs to find the perfect fit for your project. We recommend considering depth and weight during the design phase to ensure adequate structural support is provided.



For more information and to download Product Sheets, visit:

csgroup.co.uk/4730



Product Name	A-150S	A-300S	A-300C	A-600C
Weighted Sound Reduction Index Rw (dB)¹	10	15	12	19
Airflow Class²	3 (entry & discharge)	4 (entry & discharge)	4 (entry & discharge)	4 (entry & discharge)
Airflow Coefficient²	0.204 (entry) 0.205 (discharge)	0.184 (entry) 0.181 (discharge)	0.168 (entry) 0.159 (discharge)	0.154 (entry) 0.149 (discharge)
Design Features	Flat blade / visible mullion	Flat blade / visible mullion	Chevron blade / visible mullion	Chevron blade / visible mullion
Blade Pitch	150 mm	150 mm	150 mm	150 mm
Depth	150 mm	300 mm	300 mm	600 mm
Weight³	30 kg/m ²	40 kg/m ²	45 kg/m ²	75 kg/m ²
Sightproof	No	No	Yes	Yes

¹ Rating according to EN ISO 717-1:2013. For Sound Reduction Index (dB) values at specific octave band centre frequencies, refer to individual Performance Datasheets (tested to EN ISO 10140-2:2010).

² Tested to EN 13030. For full airflow performance data, refer to the Performance Datasheet or contact us for the test report.

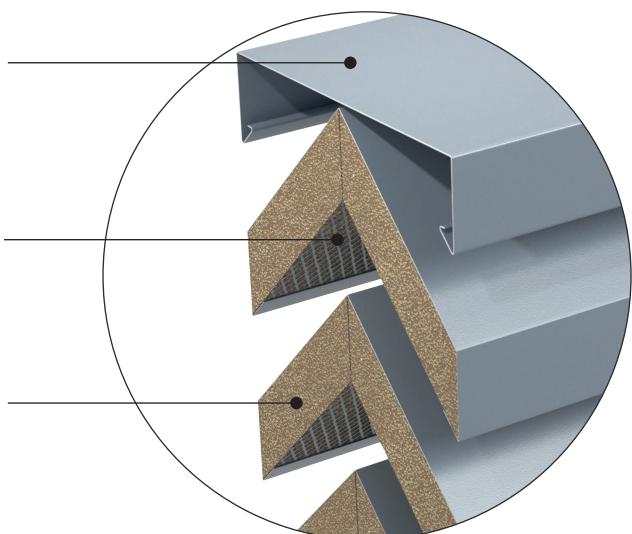
³ The maximum module height is 2500 mm, and the width 1200 mm, subject to weight considerations.



Blades and frames are formed out of galvanised steel, supplied in mill finish or painted.

Galvanised mesh on the underside of louvre blades maximises noise reduction performance.

Mineral wool infill material with acoustic, thermal and fire resistant properties. It is also water repellent, to prevent moisture build up, damp and rot.



Accessorise *your louvres.*

We offer a wide range of accessories and extras to suit your project's needs. From protective guards and meshes to insulated blanking panels, louvred doors and volume control dampers, we offer everything you need to optimise functionality and performance.



Explore the full range
of accessories:



c-sgroup.co.uk/26795

Blank-off panels are often selected as a simple way to mitigate air and water from coming through non-ducted areas. Any specified louvre can have custom fabricated blank-offs applied with or without the ability to convert to active at a later time.



181 FREMONT
SAN FRANCISCO, US
RS-5605 RAIN DEFENCE LOUVRES

Everything you need.

When you specify our systems, you get the support of a dedicated team with a wealth of experience and design capabilities.

We are here to assist you along the way, from the concept design and specification stages to product selection and practical installation considerations.

Tools & Support

- Specification guidance and documents
- Technical drawings
- BIM objects
- Online pressure drop calculator tool
- Performance test reports
- Product samples (physical and virtual)



Specification Guidance

Louvre specification is a balance of form and function. Our CPD presentation provides best practice guidance on how to specify for aesthetics and performance.

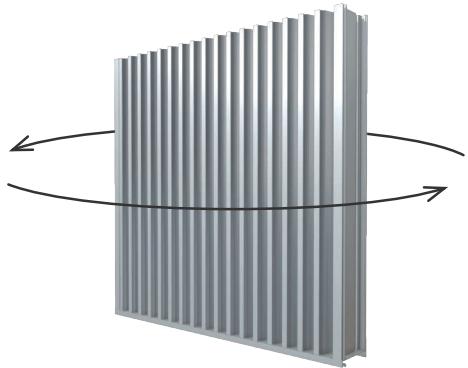
Book a presentation at your practice.



csgroup.co.uk/2900



**NORTHAMPTON UNIVERSITY
CAMPUS, UK**
RSV-5700 RAIN DEFENCE LOUVRES



Explore our models in 3D:



ARCHITECTURAL LOUVRES



ONE BANK STREET
LONDON, UK
RSV-5700 RAIN DEFENCE LOUVRES



Modular RSV-5700 Rain Defence Louvres met this project's functional and aesthetic needs.



CASE STORY

A building that *exudes classy vibes.*

One Bank Street, an iconic addition to Canary Wharf, London, symbolises a fusion of modern architectural aesthetics and sustainability. To provide efficient ventilation and rain defence while merging with the exterior envelope design, architects sought a high-performance louvre solution with vertical blades.

View the full story:

c-sgroup.co.uk/38184



CASE STORY

Powering the digital age.

Arkon Energy, a 100% renewable data centre infrastructure company, expanded its network by acquiring the Hydrokraft data centre in Glomfjord, Norway, which operates on eco-friendly hydroelectric power.

A key aspect of the project was the installation of rain defence louvres for the facility, located just 400 metres from the ocean. The system needed to provide efficient airflow, withstand strong wind loads, and complement the design while ensuring durability and cost-effectiveness.





**ARKON ENERGY DATA CENTRE
GLOMFJORD, NORWAY**
RSH-5700 RAIN DEFENCE LOUVRES

View the full story:

csgroup.co.uk/38241





LEIPZIG SOUTH COMBINED HEAT AND POWER PLANT
LEIPZIG, GERMANY
RSH-5700AL RAIN DEFENCE LOUVRES

Modular RSH-5700AL Rain Defence Louvres provide excellent rain defence and efficient airflow.

View the full story:

c-sgroup.co.uk/38797

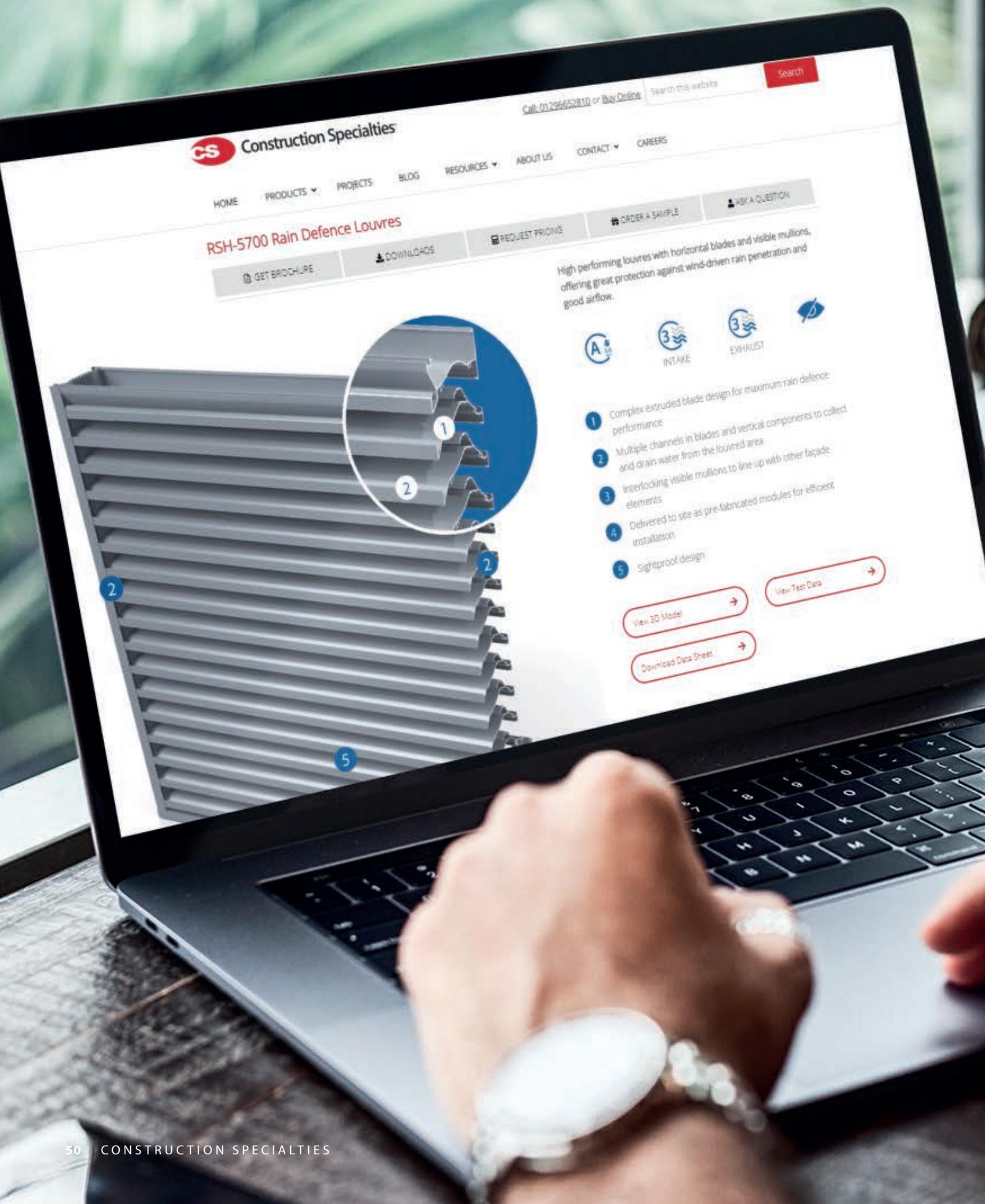


Pioneering *sustainable energy.*

The Leipzig South Combined Heat and Power (CHP) plant is a cutting-edge, low-emission facility that combines gas turbines and hydrogen capabilities. With over 93% efficiency, it generates both electricity and heat, supporting Leipzig's district heating network. Set to increase its use of climate-neutral hydrogen, the plant plays a key role in the city's climate neutrality goals.

Integral to the design of the main power plant building, gas supply building, and pump hall are high-performance louvres, ensuring efficient airflow while preventing rainwater ingress.





Construction Specialties

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RSH-5700 Rain Defence Louvres

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ORDER A SAMPLE

ASK A QUESTION

High performing louvres with horizontal blades and visible mullions, offering great protection against wind-driven rain penetration and good airflow.



- 1 Complex extruded blade design for maximum rain defence performance
- 2 Multiple channels in blades and vertical components to collect and drain water from the louvred area
- 3 Interlocking visible mullions to line up with other facade elements
- 4 Delivered to site as pre-fabricated modules for efficient installation
- 5 Sightproof design

View 3D Model

View Test Data

Download Data Sheet





Need more *information?*

Browse our website for detailed information on architectural louvre options, guidance on specifying and case studies.

Learn more about
Architectural Louvres.

c-sgroup.co.uk/2369



View a complete set of
Product Sheets.

c-sgroup.co.uk/ps-lvr-uk



Specifyng
louvres.

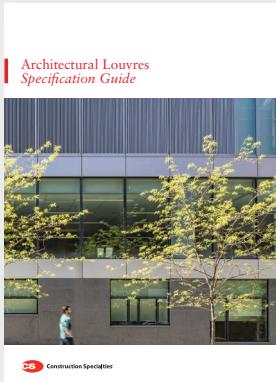




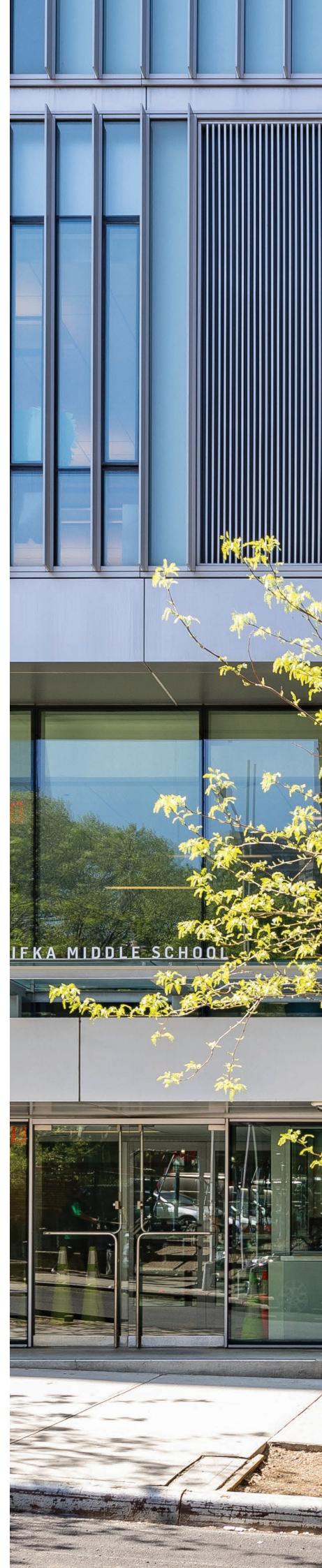
Form and Function

Louvre specification is a balance between design vision and performance, with the appearance of the louvred façade playing an important role in the selection process.

On the next few pages, we highlight the key specification considerations that can affect the success of a louvre installation.



For more information on the specification process, guidance on selecting the right louvres for your project, or to download our comprehensive, free '*Architectural Louvres Specification Guide*', please visit: c-sgroup.co.uk/23410



HESCHEL SCHOOL
NEW YORK, US
RSV-5700 RAIN DEFENCE LOUVRES



Performance Considerations

The main purpose of using louvres is to allow air movement, but other factors must also be considered. Each project should be assessed individually to ensure the solution meets all performance criteria.

For more information on louvre performance testing, visit:

c-sgroup.co.uk/23431



AIRFLOW PERFORMANCE

With the exception of projects where louvres are specified solely to provide vision screening, their effectiveness in allowing air to enter and exit a building will always be a critical performance consideration.

When selecting and sizing your louvre solution, avoid using Free Area. Instead, calculate the correct louvre area size using the model-specific Entry/Discharge Loss Coefficient. Additionally, ensure that the louvre's Pressure Drop meets the project requirements for the specified air intake velocity.

See pages 16-17 for airflow testing and classification information.

RAIN DEFENCE PERFORMANCE

Many projects require protection against wind-driven rain ingress. The prevailing weather conditions and the position of louvres on the building should be considered when assessing the risk of water ingress and potential damage.

One way to mitigate the risk is by using a ducted plenum chamber with appropriate drainage to protect sensitive equipment. In such cases, standard ventilation louvres are often chosen.

A more space-saving option is to use weather louvres, which offer both efficient airflow and rain protection. These products should be independently tested to EN 13030 to verify their performance.

See pages 16-17 for more EN 13030 testing information.



ACOUSTIC PERFORMANCE

If noise emission is a concern, acoustic louvres should be considered to reduce factory or plant room noise, especially near pedestrian walkways or other buildings.

Acoustic louvres can be installed as standalone screens or integrated into the façade, and fitted behind rain defence or ventilation models if needed.

Their depth and weight should be considered early to ensure sufficient support structure is provided.

SECURITY REQUIREMENTS

Some projects, like government buildings, data centres, or power plants, may require robust solutions to meet heightened security demands.

Louvres can be seen as a weaker point of the façade, alongside doors and windows. Where required, burglar-resistant models (e.g. tested to EN 1627-1630 standards and RC class rated) or blast-resistant configurations should be considered.

ACCESSORIES

All louvres can be supplied with additional accessories and fittings.

Bird/vermin guards or insect meshes can be fitted to the back of the louvres but may impact airflow performance, so test data should be reviewed. Insect meshes also need to be cleaned regularly.

In non-active façade areas, louvres are usually blocked off with single-skin or insulated blanking panels.

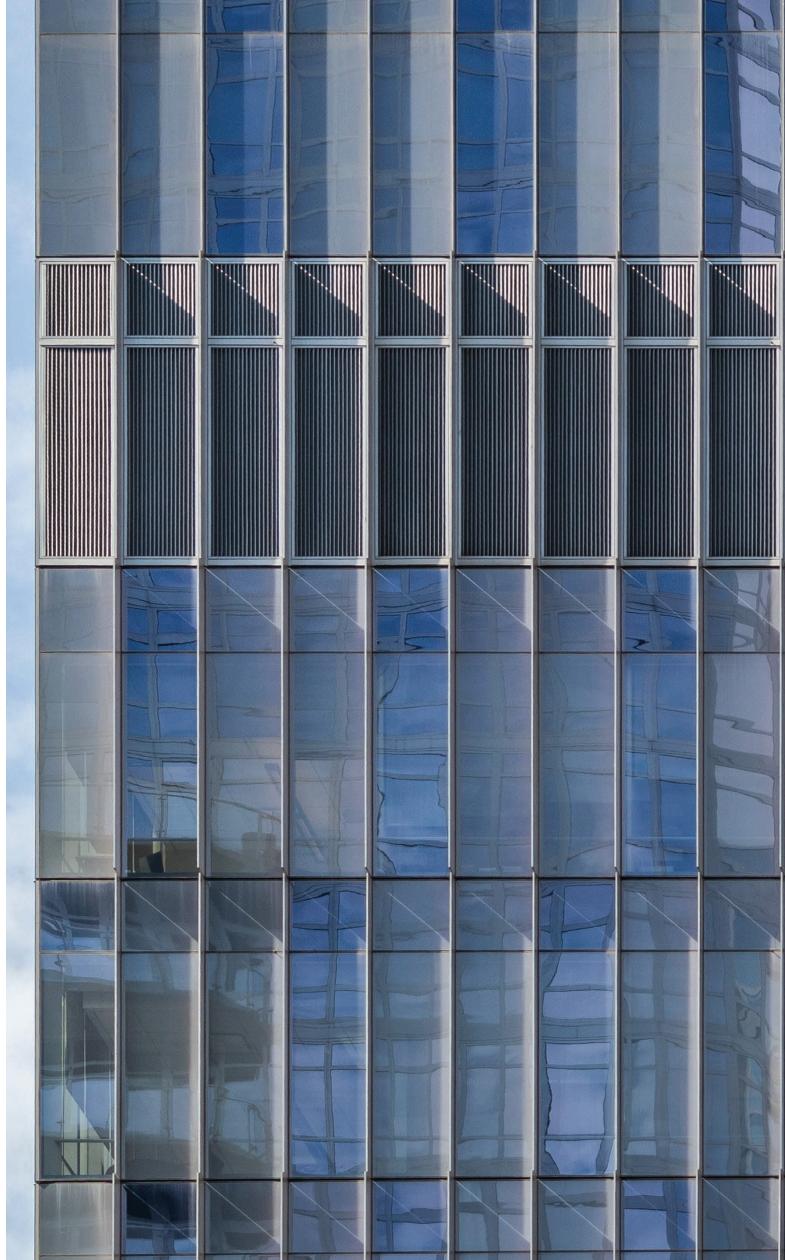
Dampers can also be used behind louvres, typically where natural ventilation is employed.

Design Considerations

With a wide range of options available, louvres can either stand out as a bold feature or blend in with the surrounding materials and style, enhancing the overall aesthetics of the structure.

For more design inspiration, visit:

c-sgroup.co.uk/23432



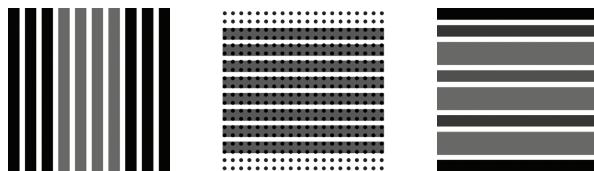
BLADE ORIENTATION AND JOINTS



Although horizontal louvre blade arrangement is most common, vertical blade models are particularly effective for rain defence and may be preferred for their appearance.

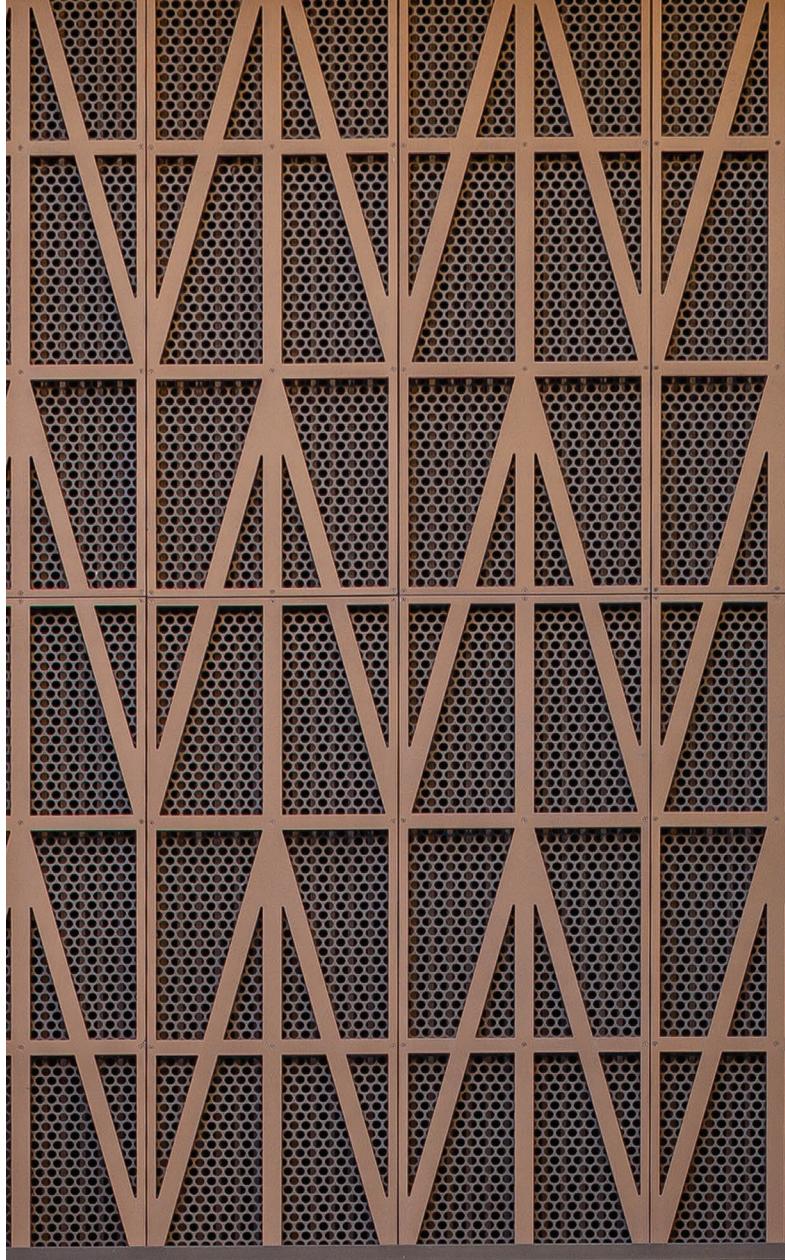
Larger installations can be designed with visible or invisible joints, depending on the desired aesthetic and model chosen. Hidden joints create a continuous line, ideal for irregular openings, while visible joints offer a framed look, aligning with other façade features.

BLEND, HIDE OR FEATURE



Louvres can be installed behind decorative grilles or screens to conceal their appearance; however, the impact of such features on airflow performance should always be carefully considered.

Some louvre models offer great flexibility in creating a truly bespoke façade, allowing for the incorporation of accent blades that add visual interest and shade, or multiple colours to complement the building's design.



SHAPES, CURVES AND SLOPES

Most louvres can be cut to create arches or other interesting shapes. Some models can be curved in plan or faceted to create the illusion of a curve. However, the potential impact on performance should always be considered.

Additionally, some rain defence louvres can be integrated into sloping façades without compromising their performance.

LOUVRE INTEGRATION

Louvres can be a key element of any façade design and are typically fitted into prepared openings or fixed to a secondary supporting steel structure.

Some modular louvre options are available with glazing frames, making them easy to integrate into curtain walling.

When designing, it is important to consider the louvre depth, weight and the maximum self-supporting unit size.

COLOURS AND FINISHES

Louvres can be anodised or powder-coated in a wide range of colours to suit design requirements.

Anodising offers a clear finish for a natural look or a coloured finish for a wider range of hues, both providing durability and corrosion resistance. Powder coating is available in matt or gloss finishes, offering flexibility to achieve the desired aesthetic.

Louvre Terminology

Louvres play a crucial role in building ventilation, and understanding key terms related to their performance is essential for effective design and selection. Below are important definitions.

AERODYNAMIC COEFFICIENT

A unitless number, determined by airflow testing, representing the aerodynamic effectiveness of the louvre.

Unlike **% Free Area**, it accounts for the design and configuration of the louvre, providing an accurate measure of its airflow performance.

Values are recorded for both air intake (Entry Loss Coefficient C_e) and exhaust (Discharge Loss Coefficient C_d) and typically range from 0.1 to 0.5 (the higher the number, the more efficient airflow).

AERODYNAMIC FREE AREA

The product of **Core Area** and the **Aerodynamic Coefficient**. Equal to the total area of a theoretically perfect opening.

This value is used for calculating **Pressure Drop**.

BLADE PITCH

The individual spacing of blades within the louvre system, typically expressed in mm.

BSRIA

Based in the UK, the Building Services Research and Information Association is one of Europe's leading independent test laboratories for the testing and certification of building services products.

CORE AREA

The louvre core area is the product of the minimum height and minimum width of the front opening in the louvre assembly with the louvre blades removed, usually expressed in m^2 .

It is used with the **Aerodynamic Coefficient** to calculate the **Aerodynamic Free Area** and, thus, the **Pressure Drop**.

CORE VELOCITY

The velocity at which air passes through the **Core Area**, typically expressed in m/s.

Core Velocity = Volumetric Flow Rate / Core Area

EN 13030

EN 13030:2001 'Ventilation for buildings - Terminals - Performance testing of louvres subjected to simulated rain' is the European standard to which louvre performance is tested.

The EN 13030 test procedure is based on a nominally 1 m x 1 m sized louvre panel. While allowing direct performance comparisons between different louvre designs, the test does not measure or consider how water is collected and drained from larger louvre installations.

AMCA 500-L is a similar test used in the US and some other parts of the world.

FREE AREA

The minimum area through which air can pass. It is determined by multiplying the sum of the minimum distances between intermediate louvre blades, the top blade and head, and the bottom blade and cill, by the minimum distance between jambs.

Although commonly used by Building Services Engineers as a 'rule of thumb' for louvre sizing, Free Area does not provide an accurate assessment of actual louvre performance, as it does not account for the effects of louvre design on airflow efficiency. Instead, a louvre's **Pressure Drop** and **Aerodynamic Free Area** should be considered.

PRESSURE DROP

The pressure differential between two sides of the louvre, typically expressed in Pascals (Pa).

As air is mechanically drawn or pushed through a louvre, pressure is created due to the turbulence. The increasing pressure measurement of this turbulence or 'Pressure Drop' at higher air velocities is an important factor in overall mechanical system design and louvre selection and sizing.

SPECIFIC DENSITY OF AIR

Used in louvre airflow performance calculations. When taken at 20°C and 101.325 kPa, air has a density of 1.225 kg/m³.

VOLUMETRIC FLOW RATE

The specific volumetric flow rate of air (entry or discharge) to pass through the louvre system, expressed in m³/s or m³/hr.

WEATHER / RAIN DEFENCE LOUVRE

A louvre designed to allow the passage of intake or exhaust air while minimising the ingress of rain.

MANCHESTER ENGINEERING
CAMPUS (MECD), UK
RSV-5700 RAIN DEFENCE LOUVRES





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