



VIRTUS

LONDON 14

Prologis Park

Weather Louvres

Technical Submission to:

Virtus

By: Caice

Bouygues Energies & Services

Reference: 551060.01 – TS004 – Louvres

Revision 1

APPROVAL

Revision	Description	Issued by	Date	Checked
1	1 st edition	BB	30/06/2023	BB

CONTENTS

LOADING BAY SCISSOR LIFTING PLATFORM

SECTION 1	DESIGN PARAMETERS
SECTION 2	DESCRIPTION & CONSIDERATIONS IN SELECTION
SECTION 3	APPENDIXES

External metal acoustic louvers to chiller plant including high level columns and secondary steelwork support; Pre-galvanised mild steel; Polyester powder coated finish; Double banked louver blade; Semi-aerofoil shaped profile; fixed to perimeter of plant gantry structure.

System outline

25-55-45/150 Louvre screen system

- Description: Horizontal Louvred Screens to gantry
- System performance: 25-55-45/205 Compliance with performance requirements and 25-55-45/220 Durability.
- System manufacturer: Calce Ltd.
- Manufacturer reference: PLS 100 Louvre System
- Screen framing: Aluminium mullions to the rear of the louvres.
- Louvres: -
 - Type: 45-25-50/360 Aluminium louver blades.
 - Operation: Fixed.
- Installation fasteners: Manufacturer's standard.
- System accessories: 45-25-50/335 Screening and ventilation louver access doors.

2 DESCRIPTION & CONSIDERATIONS IN SELECTION OF UNIT

Products

25-55-45/305 Product samples

25-55-45/150 Louvre screen system type A and type B.

- Manufacturer: Caice Ltd.
- Submittals: Samples of all profiles and finishes.
- Purpose: To demonstrate compliance with performance requirements.
- For aesthetic evaluation.
- Labelling: Clearly label all submitted samples.
- Timing: Before ordering for project.

45-25-50/335 Screening and ventilation louvre access doors

- Manufacturer: Caice Ltd.
- Size: 1000 x 2100
- Format: Single leaf, single action.
- Material: Manufacturer's standard.
- Finish: To match surrounding louvre screens
- Colour: To match surrounding louvre screens

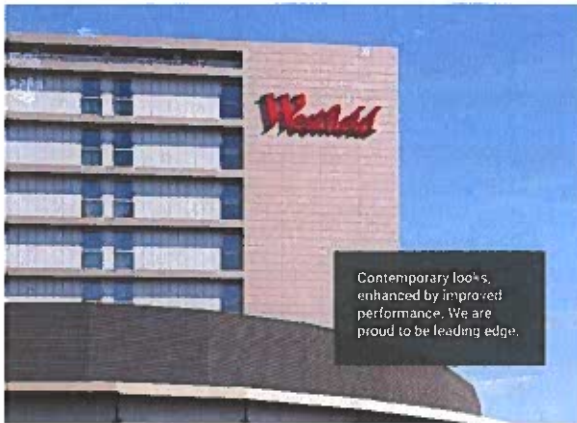
Aluminium louvre blades

- Shared by: 25-55-45/150 Louvre screen system type A and type B.
- Manufacturer: Caice Ltd.
- Profile: PLS 100 Louvre System (Type A)
- Material: Extruded aluminium alloy perforated plain sheet, to BS EN 755-1.
- Finish: Powder coating to BS 6496.
- Colour: To be confirmed
- Texture: Matt.
- Mounting arrangement: Clip fixing to mullions.



Weather Louvers





Contemporary looks,
enhanced by improved
performance. We are
proud to be leading edge.

Our distinctive & efficient Weather Louvre system

Aerodynamic with high resistance to weather that's
easy to assemble with our optional integrated steel
work support system.

Visually attractive and versatile

Enhance your building's appeal with our distinctive weather louvre cladding,
your unique style. Having high weather efficiency with aerodynamic performance
protects your ventilation openings.

Being the only company in the UK that manufactures Weather Louvres,
Continuous Line Acoustic Louvres and After sales service we will return and
the best performing and most cost efficient solution for your project.

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One multi-purpose system with many applications

Weather Louvre applications include fresh air intakes and exhausts for
ventilation systems, mechanical equipment screens or enclosures, natural
ventilation and facade cladding, all providing a seamless look wherever they
are used.

For a totally individual appearance, the Weather Louvres are fabricated from
extruded aluminium and can be finished in polyester powder paint to a wide
range of RAL colours.

You can be confident in our performance testing

We like to do things properly and our Weather Louvre range has therefore
been rigorously tested to offer performance data that you can trust. Applicable
standards:

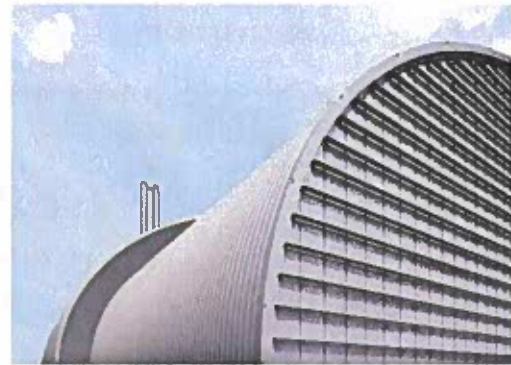
Rain Penetration, Pressure Drop and Coefficient of Entry – BS EN ISO 13053
2001 (BSRIA) More detail on this test standard is available upon request.

Class A rainwater penetration

Rain water will penetrate into a building through standard Weather Louvres. So
we have developed a high performance option to achieve Class A rainwater
penetration (when tested at BS EN ISO 13053 effective at 7.5m/s face velocity).

100%

Be 100% confident in the
quality and performance of
our products.



Supporting you every step of the way

We are always delighted to answer your questions
and provide you with detailed specifications, design
and pricing. If you have a complex project then we
can develop products or design solutions to meet your
specialist needs with our bespoke service.

Partner with experts who understand
you and your market

Beautifully designed

All our products are drawn by skilled
technicians, using AutoDesk InRoads,
building accurate 3D models of the products
to all elements fit perfectly with each other
and your building.



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Continuous investment in automated manufacturing

Advanced technology is central to our Production facilities in Dorset.
From automated engineering of component parts to high quality
polyester powder painting for a durable and long lasting finish, we have
waste of all kinds and so continuously drive them out. Guaranteeing
you the highest quality products, achieving your exact quote and all
delivered at the lowest possible cost.

Accurate installation, on time and budget

Our highly trained project managers will work with you to ensure
our products are installed on time and to budget, even for the most
challenging of projects.

The innovative assembly design of our Weather Louvres makes
installation faster, helping to save vital time on-site.

5%

Material waste is down
below 5% thanks to our
unique software. All unused
aluminium is recycled.

Table 1: Wind speed data

Wind speed (m/s)	Frequency (%)
0-1	0.1
1-2	0.2
2-3	0.5
3-4	1.0
4-5	2.0
5-6	4.0
6-7	7.0
7-8	10.0
8-9	12.0
9-10	13.0
10-11	12.0
11-12	10.0
12-13	8.0
13-14	6.0
14-15	4.0
15-16	2.0
16-17	1.0
17-18	0.5
18-19	0.2
19-20	0.1

Penetration classes

The penetration class is defined as the speed of the wind at the height of the building, taking into account the terrain and the surrounding buildings.

Entry or discharge loss coefficient classes

The entry or discharge loss coefficient class is defined as the loss of pressure when the air enters or leaves the building.

Weather Louvre doors

Weather Louvre doors are designed to provide a secure and weather-resistant entrance to a building. They are typically made of metal and feature a heavy-duty locking mechanism.

Consider the weather

When designing a building, it is important to consider the weather conditions in the area. This includes factors such as wind speed, direction, and frequency. The weather can have a significant impact on the performance of a building's envelope and its ability to maintain a comfortable indoor environment.

Weather Louvre applications

Weather Louvre applications are designed to provide a secure and weather-resistant entrance to a building. They are typically made of metal and feature a heavy-duty locking mechanism.

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VertiBlade – created with designers and architects in mind

We were asked by an architect to help solve an issue with a new building on the Greenwich Peninsula in London. They calculated that the inherited steel work structure would not support the full weight of the brick work all the way to the top of the building and the architect's client wanted the sub-station transformers on the roof to be completely out of sight of the nearby school and residential properties.

This light-weight cladding system solved all the issues on-site

Following a couple of meetings with the architect, we came up with the idea of using the VertiBlade system so that the transformers would not be seen and without adding a heavy load to the supporting wall structure. In effect, adding a light-weight, visually inactive form of parapet cladding, when viewed from different angles at ground level.

VertiBlade

CASE STUDY

Greenwich Peninsula Sub-station London

During the day, our VertiBlade provides a high definition profile, with crisp, clean lines and striking colour changes as the sunlight catches them. At night, this complete 3D screening to plant can turn into a light feature with an appropriate LED light system.



A detailed assessment was carried out by our acoustic experts

As the building was originally all brickwork there was no issue with noise emanating from the transformers. Acoustic experts at LDC our sister company, carried out a detailed assessment of the plant to ensure that the noise levels at the school and residential properties were not going to be exceeded with the blade system proposed.

A meeting on-site with the local planners was arranged, where colour samples of the blades were handed over. The black ones, matching the colour of an adjacent building along with the results from the acoustic assessment, were subsequently approved in a new planning application.



A bespoke 3D corner section maintains the aesthetic appearance

Due to the way that the building had been designed, we developed a bespoke way of fixing the VertiBlade to the existing steel system that would align with the concrete stairwells at the end of the building. A special 3D section was also designed to create a crisp corner detail enhancing the aesthetic appearance of the system.

Because of the tight proximity of the site within its boundaries, it was crucial that the access equipment had the appropriate height and reach to deliver the installation contract.

VertiBlade

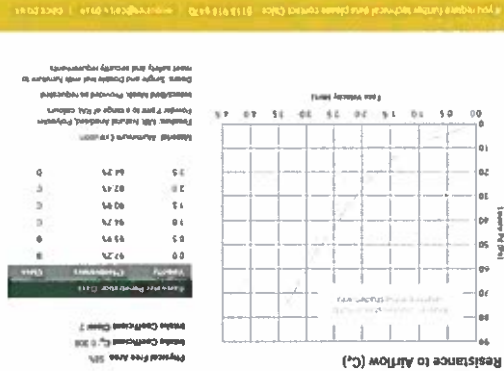
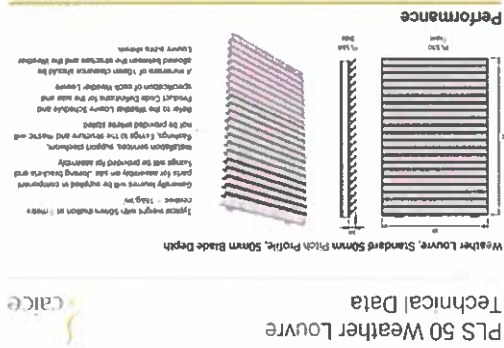
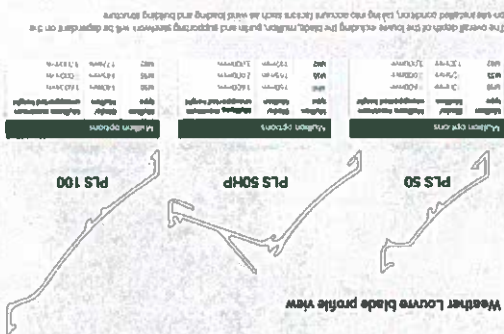
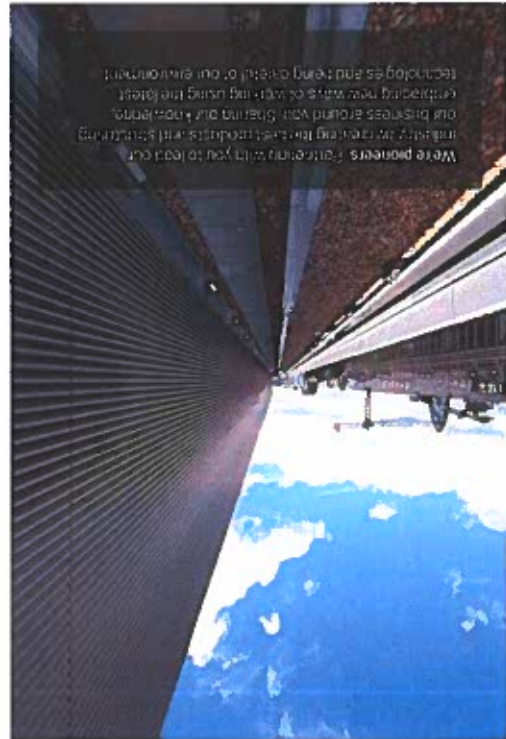


A very happy client

Our client said afterwards, 'the high level cladding has now been completed and Caice has undertaken a fantastic job. The detailing is crisp and all of the lines are straight and clean. Installing the top section the opposite way around has added definition to the profile and when the light catches it the colour changes are striking. I am very happy with the finished product.'

Weather Louvre options

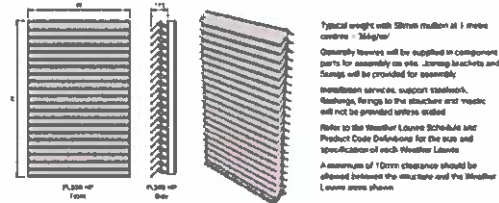
- 1 **How is the Weather Louvre system to be used**
 For greater windproofing the PWS (510) should be installed on the windward side of the building. The PWS (510) can be used on all PWS and PWS-Lite Louvres. Call 800-255-2555 to meet your needs.
- 2 **Multiton and Furin support**
 Multiton and Furin support is available on all PWS and PWS-Lite Louvres.
- 3 **Optional panels fitted behind the Weather Louvres**
 These options will make your building with Weather Louvres a more complete system.
- 4 **Fully integrated steelwork support system**
 We have developed a fully integrated steelwork support system for Weather Louvres. This system is designed to support the louvers and the panels. The panels are supported by a steel structure which is bolted to the building's steelwork.



PLS 50HP Weather Louvre Technical Data

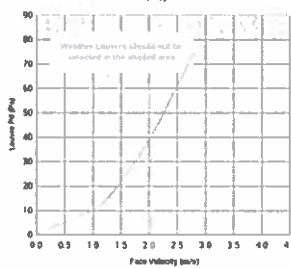


Weather Louvre, High Performance 50mm Pitch Profile, 110mm Blade Depth



Performance

Resistance to Airflow (C_p)



Physical Free Area: 50%
Intake Coefficient C_{pi} : 0.756
Intake Coefficient Class: 3

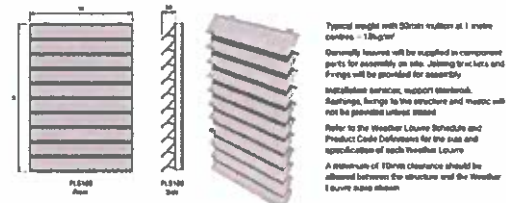
Velocity	Transmittance	Class
0.0	100%	A
0.5	100%	A
1.0	100%	A
1.5	100%	A
2.0	100%	A
2.5	99.4%	A

Material: Aluminium Extrusion
Finish: Mill, Natural Anodised, Polyester Powder Paint to a range of RAL colours
Insect/Bed Mesh: Provided as requested
Down: Single and Double leaf with hardware to meet safety and security requirements

PLS 100 Weather Louvre Technical Data

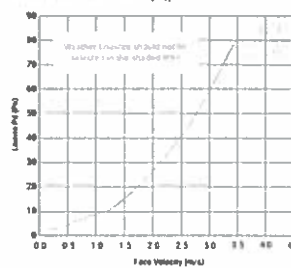


Weather Louvre, Standard 100mm Pitch Profile, 90mm Blade Depth



Performance

Resistance to Airflow (C_p)



Physical Free Area: 33%
Intake Coefficient C_{pi} : 0.796
Intake Coefficient Class: 3

Velocity	Transmittance	Class
0.0	96.02%	B
0.5	93.3%	C
1.0	91.4%	C
1.5	89.5%	C
2.0	87.3%	D
2.5	84.6%	D

Material: Aluminium Extrusion
Finish: Mill, Natural Anodised, Polyester Powder Paint to a range of RAL colours
Insect/Bed Mesh: Provided as requested
Down: Single and Double leaf with hardware to meet safety and security requirements

If you require further technical data please contact Caice: 0118 918 6470 or enquiries@caice.co.uk or www.caice.co.uk

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Specifying the Weather Louvre system

Weather Louvre specification

We're here to help and can provide a detailed Weather Louvre specification for inclusion within the overall specification for your project. This is also available in a short form NBS Specification format if required.

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Chippenham, Wiltshire
SN15 2SA

* Gold Award in the prestigious Command Wessex Awards 2001, with a "World Class" benchmarked score against thousands of other similar businesses throughout the UK and Europe.



Weather Louvre Door furniture

Hardware and Furniture



Standard Door Hardware and Furniture on Weather Louvre Doors Produced by Caice

Component Name	Image	Specification
Pivot Hinge		- Stainless steel - Custom milled manufacture
Lock Cylinder		- Euro Cylinder and Turn - Satin Chrome - MP10 restricted 10 pin cylinders - Secured by Design - Manufactured to BS EN BS EN 1303 Grade 6 - Key to differ (KTD), Keyed Alike (KA) and Under Master Key (UMA) options available
Door Handle		- Grade 304 stainless steel satin finish with solid investment cast stainless steel components throughout 128.5mm lever length with a 66mm projection - Suitable for internal and external use - BS EN 1906 : 2010 Grade 3 - BS EN 1670 : 2007 Grade 5
Escutcheon		- Grade 304 stainless steel satin finish rose 50mm diameter x 8mm screw on rose design - BS EN 1906 : 2010 Grade 3 - BS EN 1670 : 2007 Grade 5
Sashlock		Euro Profile Sashlock – 65mm Case, 44mm Backset radius

Weather Louvre Door furniture

Hardware and Furniture

Component Name	Image	Specification
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- Piston Gas Strut
- 200mm stroke
- 50N force



Gas Strut

- Spring Loaded shoot bolt
- 220 mm bolt length, 12mm diameter
- Mild steel Galvanised finish



Shoot Bolt

- Emergency Hardware
- Silver painted Finish



Push Pad

- Emergency Hardware
- Silver painted Finish
- BS8300



Exterior Handle

The information is based directly on manufacturers and agent's details and although correct at the time of writing will be subject to change.

Non-standard door furniture is available, charged at an additional rate. Caice can, upon request, issue additional optional standard furniture from or pre-approved range at an additional rate.

