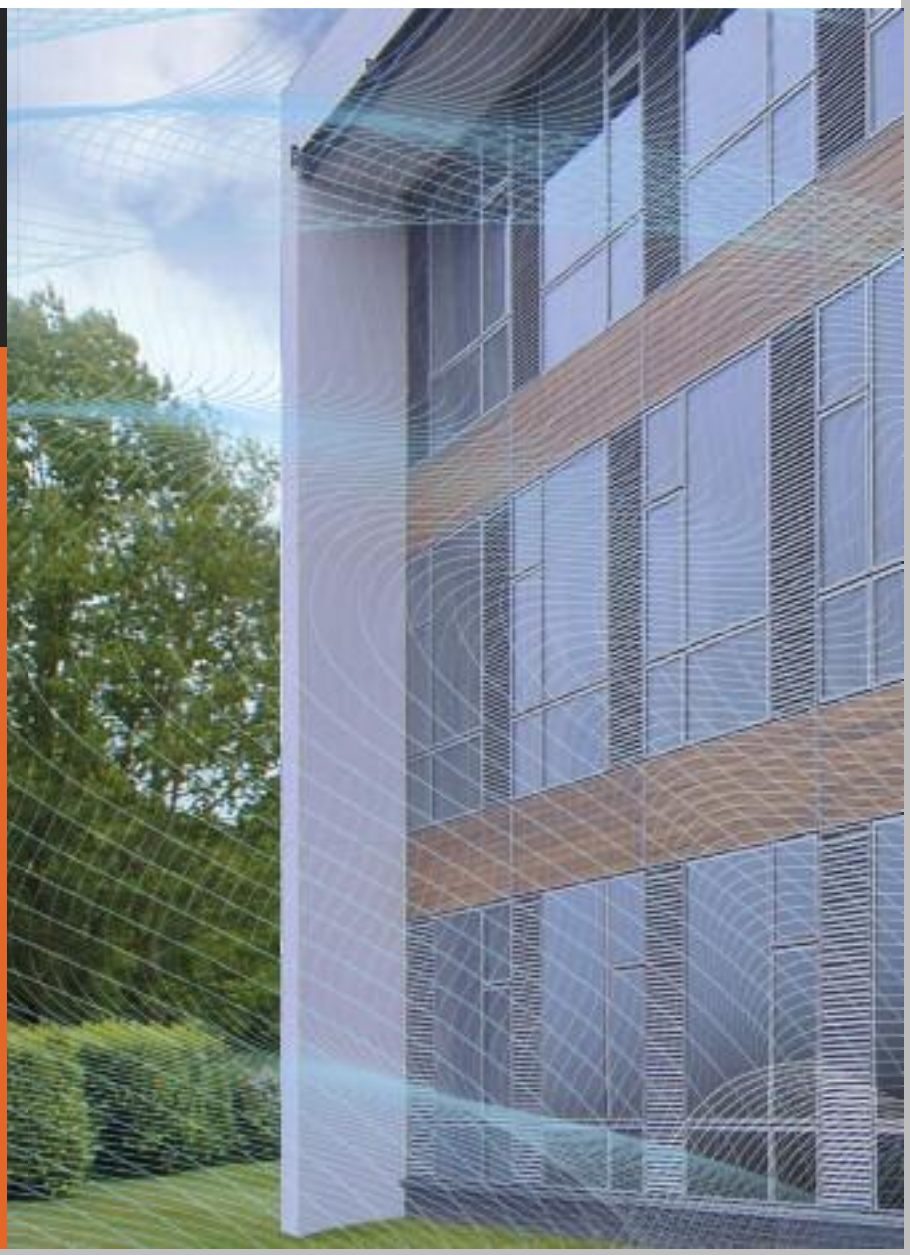
Ruskin
Air Management

Natural Air Ventilators

Metal louvre / damper combination

- Manual Control
- Motor Control
- Fail Safe Open/Close
- Anti-Finger Trap
- Heating Coils with Optional Fan Assistance
- Acoustic Options
- Roof Terminals
- Mixed Mode via Fan Coils
- Control Panels
- Choice of External Louvres
- Choice of Internal Grilles



naco

naco

There's a much bigger picture to be found at Ruskin Air Management.

Ruskin Air Management
actionair
Air Diffusion
naco

www.naco.co.uk

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Our ideas built with you in mind

When someone says it can't be done, they've obviously not spoken to us. So if anyone in the industry suggests that you are asking for the impossible, it will always be our privilege to prove them wrong yet again.

From start to finish

Because unlike most UK louvre companies, we design, detail, supply and install. So not only do our products match your requirements precisely in terms of function but also in style, finish and colour.

This determination to see things through to the finished result gives architects and designers a unique opportunity to create outstanding ventilation features or screening controls within the external cladding. And our can-do attitude makes those satisfied clients come back to us time and time again.

Past, present and future

Since the early sixties this customer-first philosophy has been enshrined in all our activities. Blended with manufacturing experience and practical expertise honed over almost half a century, it has seen Naco define everything from metal and glass louvres, natural air and smoke ventilators to mist separators, sunscreens and brise soleil. It even instigated a no-nonsense software program on our website to take the hassle out of sizing louvres and unscrambling such things as face, jet or core velocities and free areas.

An ideal environment

But user friendliness isn't the only challenge facing building design today. Increasingly environmental friendliness is now a design pre-condition, reflecting a growing duty to protect the natural environment whilst controlling our own internal environments.

Learning to harness nature's elements to our advantage rather than simply fighting against them is now driving forward our engineering and design teams more than ever. And their progress can be measured by the comprehensive range of Natural Air Ventilators featured here in our latest product portfolio.

Learning to harness nature's elements

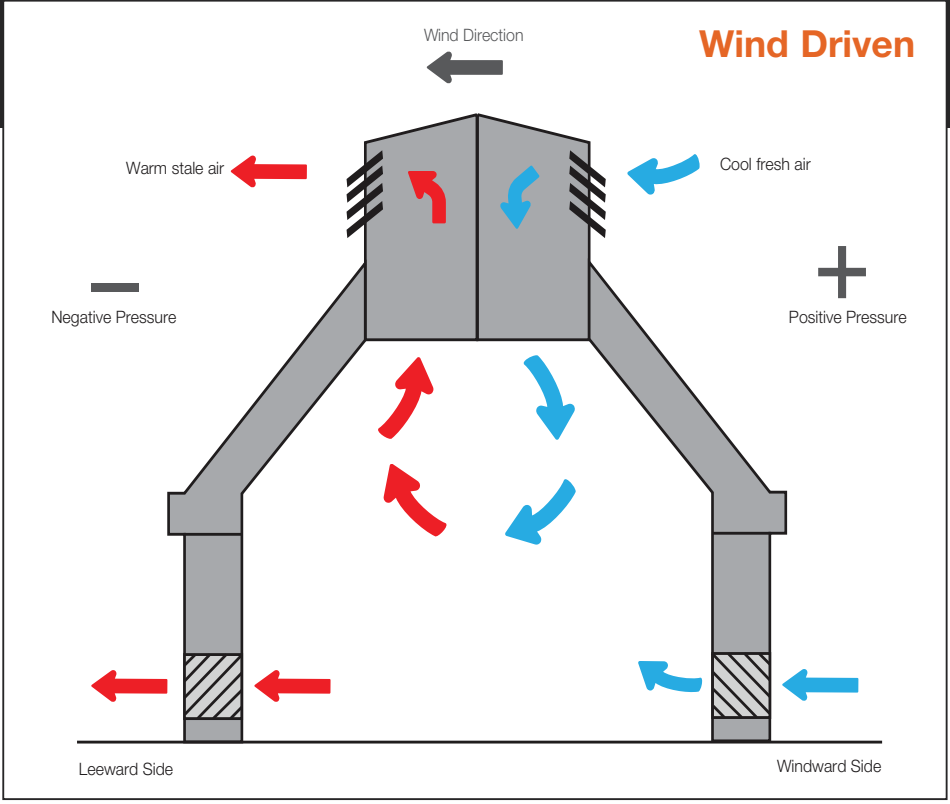
Natural Ventilation Theory / Naco Product Solutions

Natural Ventilation Principles

Wind Effect

The wind blowing against the building (Windward) side creates a positive pressure on that side of the building. This in turn creates a negative pressure on the opposite side (Leeward) side.

Through the correct positioning of ventilators to both sides of the building, often together with a roof terminal, airflow is produced flowing from the windward side towards the leeward side.

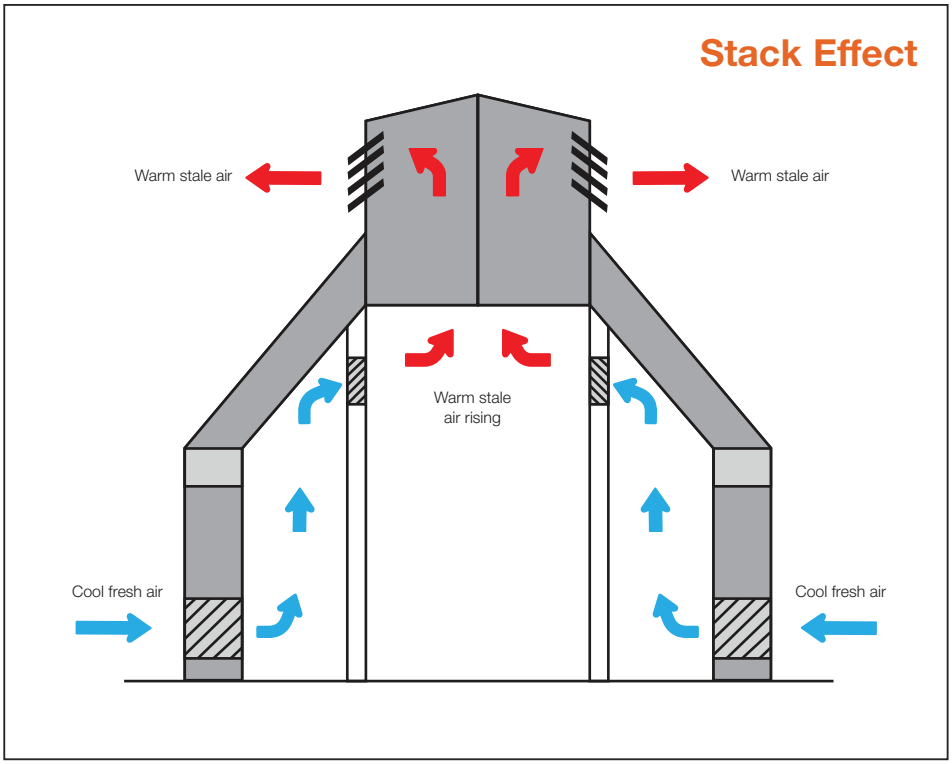


Stack Effect
(Chimney Effect)

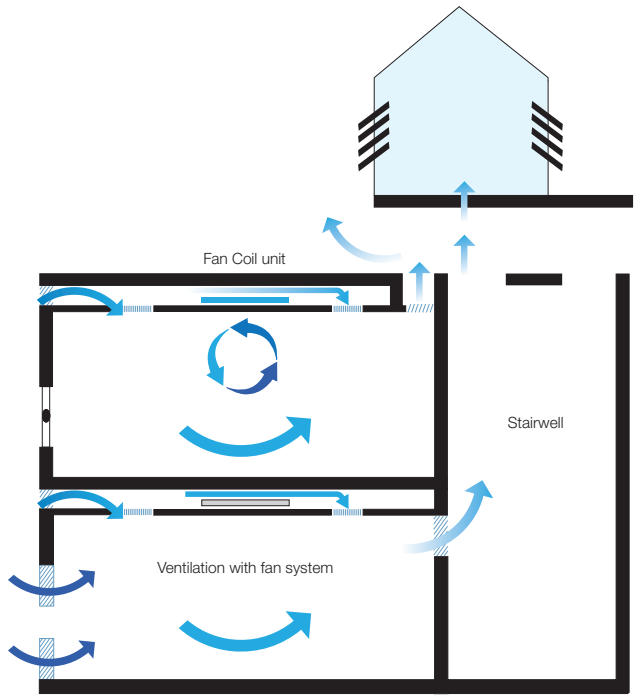
This method does not rely so much on the wind, but more on the buoyancy effect created by the warmer air inside the building being less dense than the outside cooler air.

By the use of a roof terminal or high-level ventilators, the warmer stale air will rise up and exhaust through the high level ventilators, and this movement of air will draw in the outside air at low level.

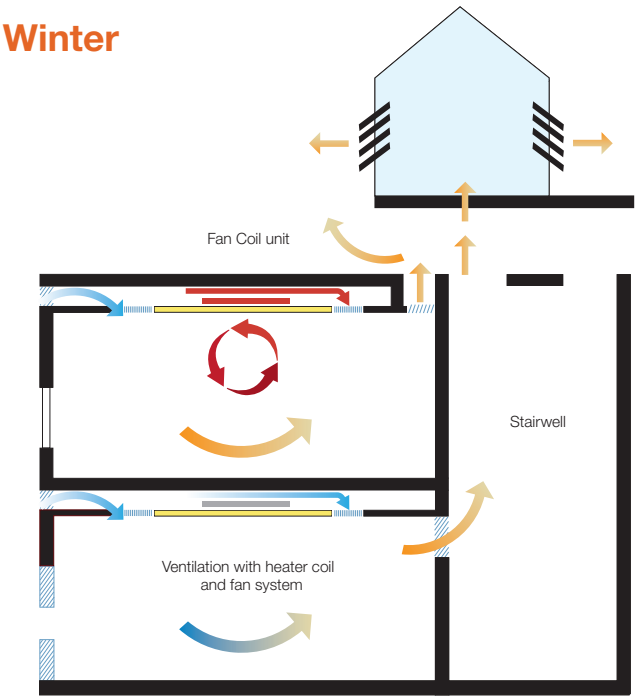
The stack effect method is usually more reliable than the wind driven one.



Summer



Winter



Mixed Mode (Hybrid System)

To allow building designers greater flexibility and to alleviate some of the vagaries that our weather can have on the efficient function of both the wind driven and stack systems, Ruskin can offer a mixed mode system, to complement a totally natural system.

This can encompass a range of NAV ventilators fitted with heating coils, either with or without fan assistance and fan coil units.

Control systems would enable the motorised items in the hybrid system to only be called on when deemed necessary.

Mixed mode is particularly useful for winter heating and summer cooling applications when the natural system might struggle to provide the optimum room ventilation conditions.

Natural Ventilation Benefits

- Natural ventilation systems have now become the favoured approach to providing the ventilation solutions for schools, universities and low-rise buildings in general.
- Natural ventilation offers significant benefits over mechanical systems on these types of buildings.
- Significant cost savings, both on the initial installation cost and the ongoing service and maintenance costs are evident.
- Running costs are also significantly lower, with little or no power consumption required, depending on the type of system selected.
- Construction costs can also be reduced, whilst giving the architect more room for manoeuvre, as there is no longer any need to allow for plant rooms.
- Free night cooling is also readily available to reduce energy loads on the building.
- There is also evidence that natural ventilation systems offer health benefits to the building occupants, with cases of ‘Sick Building Syndrome’ becoming a thing of the past.

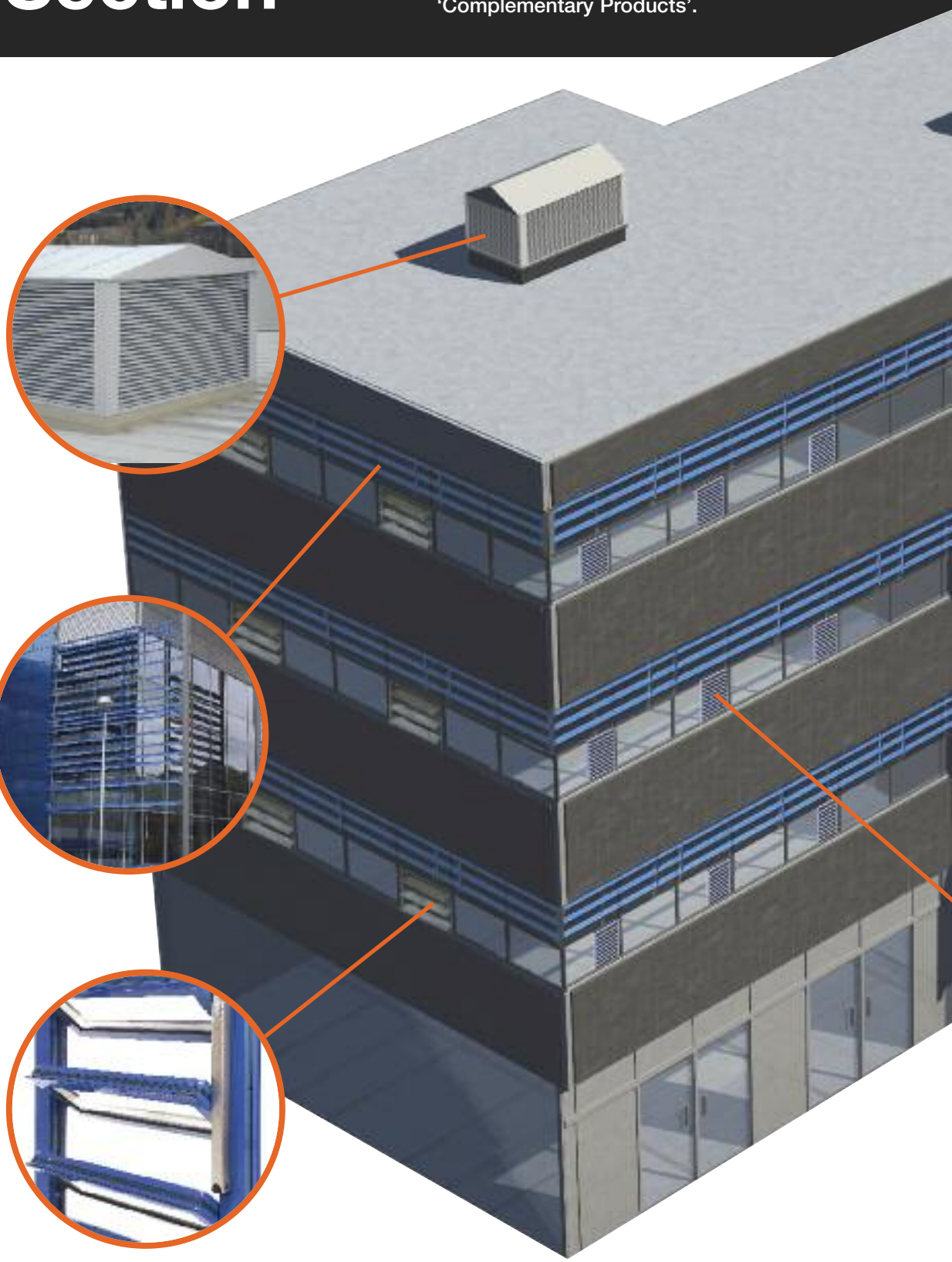
Generic Building Cross Section

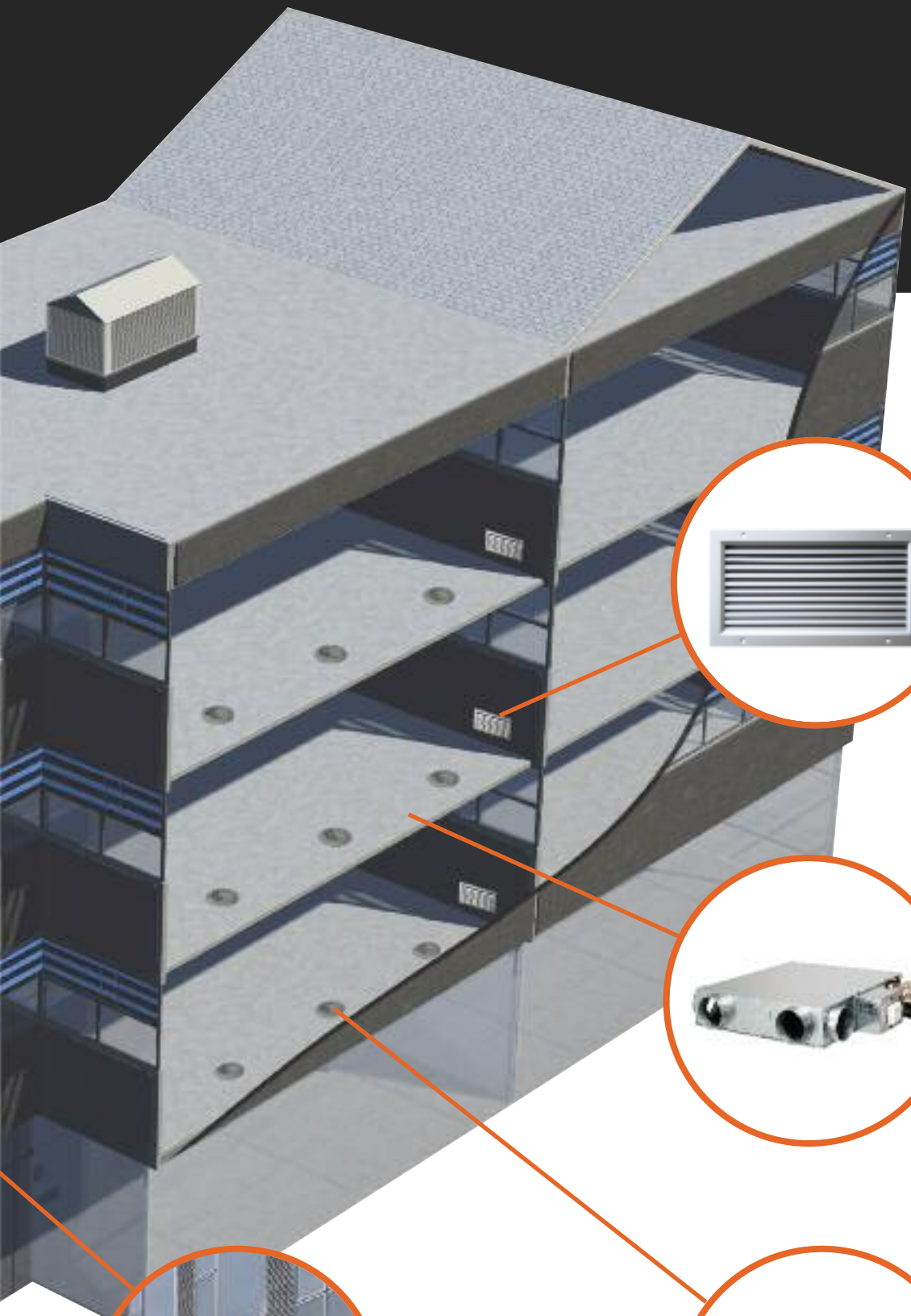
The primary components of our Natural Ventilation range are the NAV units detailed on pages 8-13. However several more products from Ruskin Air Management Ltd are available that are perfectly suited to enhancing a natural ventilation scheme. A number of these products are showcased on the building below and are described on page 17 under 'Complementary Products'.

Roof Terminals
Provide an efficient method of allowing the warm stale air to escape. Also they are used for allowing the entry of fresh outside air in wind driven applications.

Solar Shading
Reduces the heat gain into buildings and therefore lowers the ventilation and energy requirements.

Vengen Glass Louvres
Provide controlled ventilation with high free areas and the added benefit of daylight.





Transfer Grilles (G45)
A convenient way to allow air to pass through internal partitions, towards the roof terminal zones.

Fan Coils
Fan Coils have been chosen from the proven Actionair range and are based on the Hydropac eco friendly unit Model EC. Featuring low noise, low energy fans with minimal fan heat with full acoustic and thermal insulation.

Nav Units
Provide controlled natural ventilation and free night cooling. Optional tempering of the incoming air.

Fan Floor Swirls
Can be considered for use in floor void situations. The fan will induce cool fresh air at low level and this will displace the warm stale air through the extract or transfer grilles.

NAV WA & WI

A general purpose range of Natural Air Ventilators combining class leading air-tightness, together with excellent 'U' values and sound reduction..

Acoustic Ventilator – NAV WA
Insulated Ventilator – NAV WI

Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Thermally broken frame and damper blades. Screw joints as standard.

External Louvre Options
Slimtype, 50, 75, SLH-S.

Optional Internal Grille
If required NAV WA and WI can be specified with a choice of internal grilles from the Air Diffusion range.

Finishes
Extruded aluminium (mill finish) Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard,18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Free Area

SLH-S	53%
75S	50%
50S	47%
Slimtype	40%

Cd

SLH-S	0.312
75S / 50S	0.213
Slimtype	0.161

Air Leakage at 50 Pa
Length of joint: 0.1m^3/h/m
Area: 0.6 m^3/h/m^2

Wind Driven Rain Rating
SLH-S and Slimtype
Class A up to 1 m/s
75S and 50S
Class B up to 1 m/s

Operation
1. Manual handle
*(Not available if internal grille is specified).

2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

4. 24 V DC linear type motor with 'anti-finger trap' function.
*(A minimum ventilator height applies to this option).

Damper Blade Type WA
The acoustic panel provides approximately 32 Db sound reduction in the closed position.

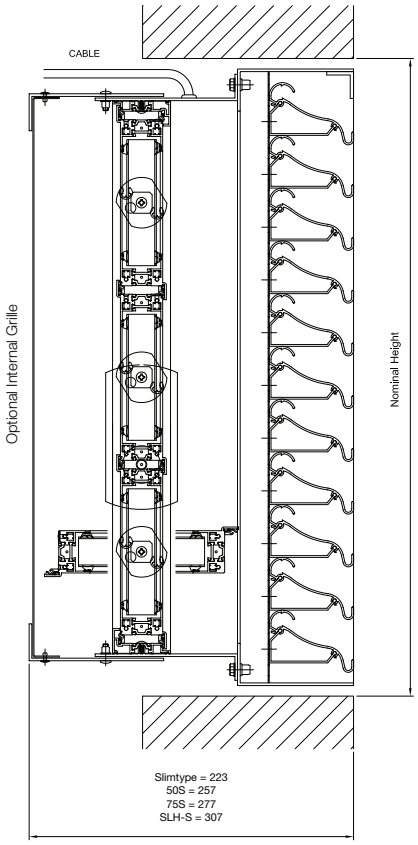
Damper Blade Type WI
The insulated panel is rated at 1.15W/m^2 K thermal value. (Specific U values for any given size of ventilator can be provided. Please consult our Sales Office).

Sizes
Single ventilator minimum
300 W x 330 H (7Nm and 10Nm actuators)
300 W x 403 H (Manual handle)
300 W x 565 H (Anti-finger trap)

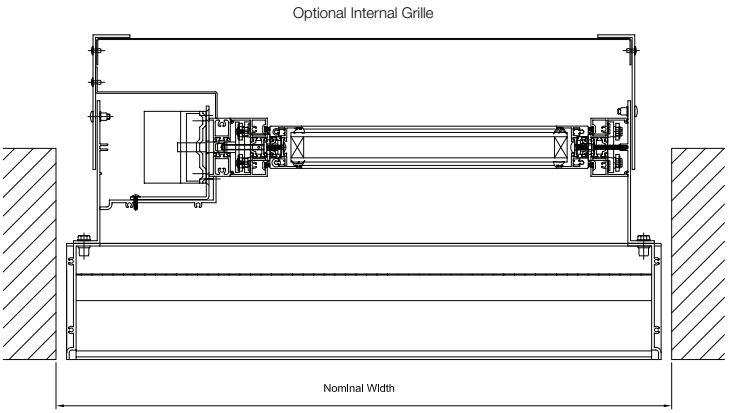
Single ventilator maximum
1400 W x 2400 H

Double ventilator maximum
2800 W x 1500 H

Note: Slimtype louvres will be restricted to a standard maximum size of either
1000 W x 2400 H or
2800 W x 1000 H

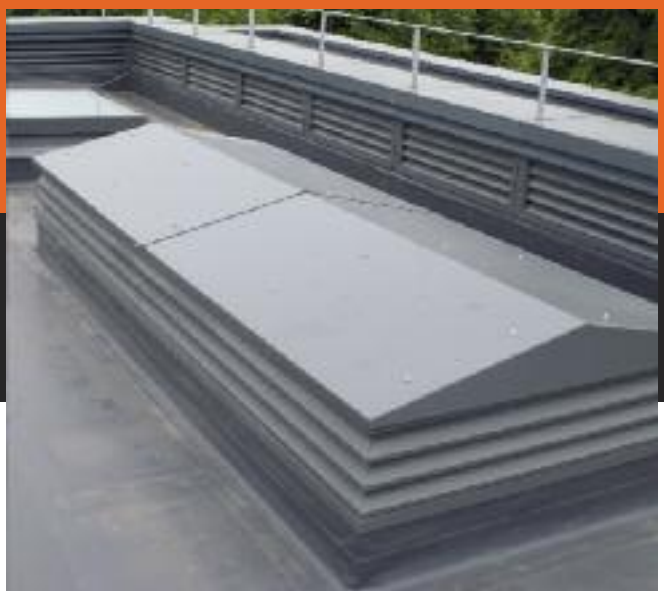


External Louvre featured = SLH-S



NAVWA +

Maintains the features of the NAV WA and WI and provides enhanced sound reduction capabilities.



Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Thermally broken frame and damper blades. Screw joints as standard.

Acoustic Treatment
Internal chevron type, acoustic louvre. Acoustic lining to interior of ventilator casing.

External Louvre Options
Slimtype, 50, 75, SLH-S.

Internal Grille Options
N/A

Finishes
Extruded aluminium (mill finish)
Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard,
18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Operation

2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

Damper Blade Type WA+
In most circumstances blade type WA would be used, however blade type WI is also available.

Sizes
Single ventilator minimum.
300 W x 330 H

Single ventilator maximum.
1400 W x 2400 H

Double ventilator maximum.
2800 W x 1500 H

Note: Slimtype louvres will be restricted to a standard maximum size of either
1000 W x 2400 H or
2800 W x 1000 H

Coupling
Ventilators may be coupled horizontally or vertically.

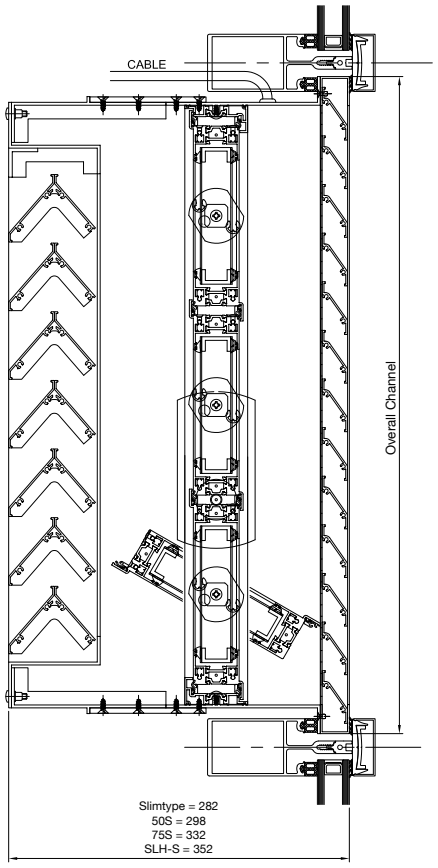
Free Area
Circa 40% (all variants)

Air Leakage at 50 Pa
Length of joint: 0.1$m^3/h/m$
Area: 0.6 $m^3/h/m^2$

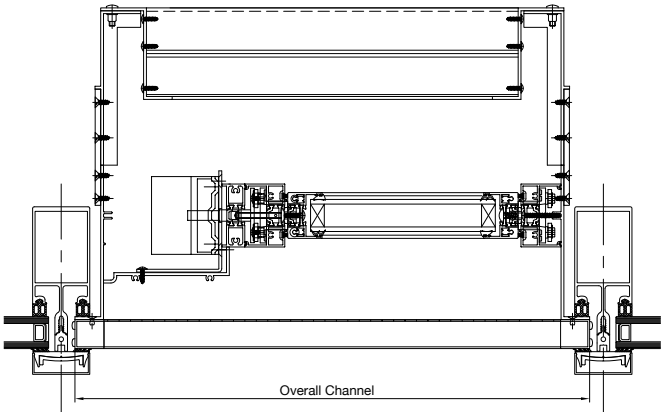
Wind Driven Rain Rating
Class A up to 1m/s (all variants)

Acoustic Rating

Closed	24 Db
25% open	15 Db
50% open	11 Db
75% open	8 Db



External Louvre featured = Slimtype



NAV WL & WLI

A budget range of ventilators maintaining very good air-tightness.

Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Screw joints as standard.

External Louvre Options
Slimtype, 50, 75, SLH-S

Optional Internal Grille
If required NAV WL and WLI can be specified with a choice of internal grilles from the Air Diffusion range.

Finishes
Extruded aluminium (mill finish) Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard, 18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Free Area

SLH-S	53%
75S	50%
50S	47%
Slimtype	40%

Cd

SLH-S	0.36
75S / 50S	0.24
Slimtype	0.19

Wind Driven Rain Rating
SLH-S and Slimtype
Class A up to 1 m/s
75S and 50S
Class B up to 1 m/s

Operation

1. Manual handle
*(Not available if internal grille is specified).

2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

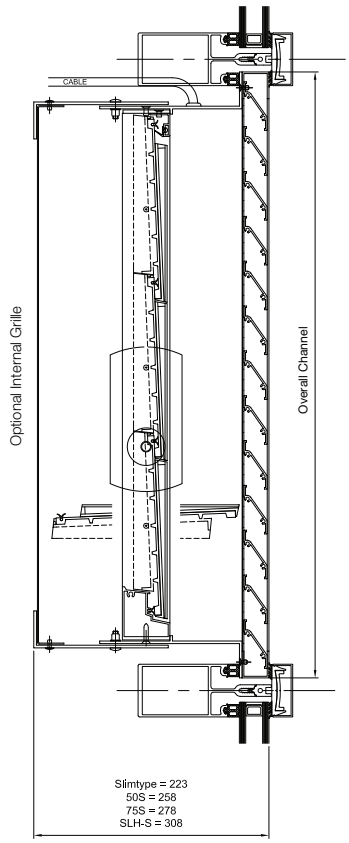
Damper Blade Type WL
Solid skin extruded aluminium.

Damper Blade Type WLI
31mm thick composite insulation panel xps and alveo foam bonded to 1.5 powder coated aluminium sheet. The insulated panel is rated at 1.15W/m^2 (Specific U values for any given size of ventilator can be provided. Please consult our Sales Office).

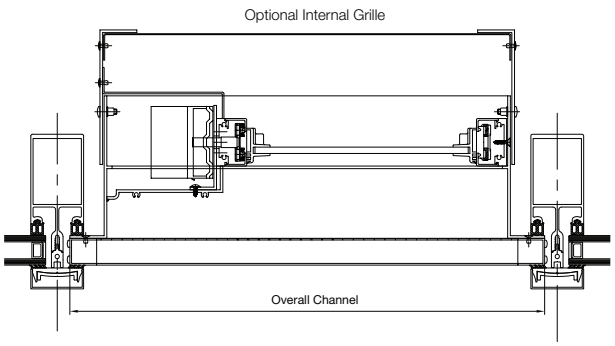
Sizes
Note: Slimtype louvres will be restricted to a standard maximum size of either
1000 W x 2400 H or
2800 W x 1000 H

Coupling
Ventilators may be coupled horizontally or vertically.

Air Leakage at 50 Pa
Length of joint: 0.5 m^3/h/m
Area: 4.1 m^3/h/m^2

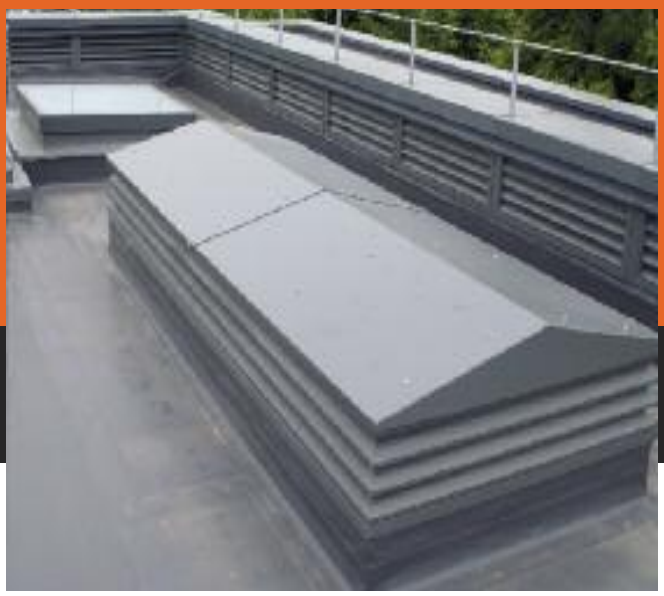


External Louvre featured = Slimtype



NAV WI/HC & WA/HC

Maintains the features of the NAV WA and WI but fitted with a heating coil to temper the incoming air.



Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Thermally broken frame and damper blades. Screw joints as standard.

Heating Coil
Refer to page 14 for technical details.

External Louvre Options
Slimtype, 50, 75, SLH-S

Internal Grille Options
A range of grilles are available from the Air Diffusion range.

Finishes
Extruded aluminium (mill finish) Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard, 18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Free Area
N/A

Cd
N/A

Air Leakage at 50 Pa
Length of joint: 0.1$m^3/h/m$
Area: 0.6 $m^3/h/m^2$

Wind Driven Rain Rating
SLH-S and Slimtype
Class A up to 1 m/s
75S and 50S
Class B up to 1 m/s

Operation
2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

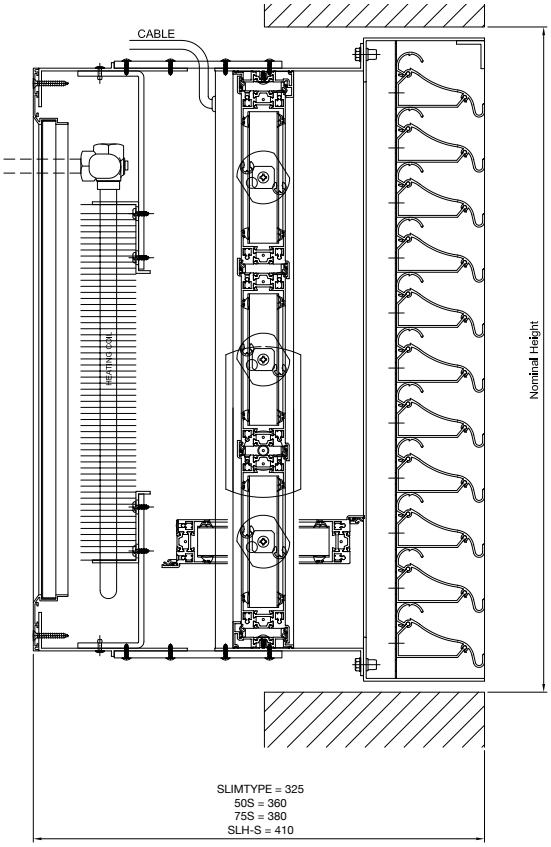
3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

Damper Blade Type WA
The acoustic panel provides approximately 32 Db sound reduction in the closed position.

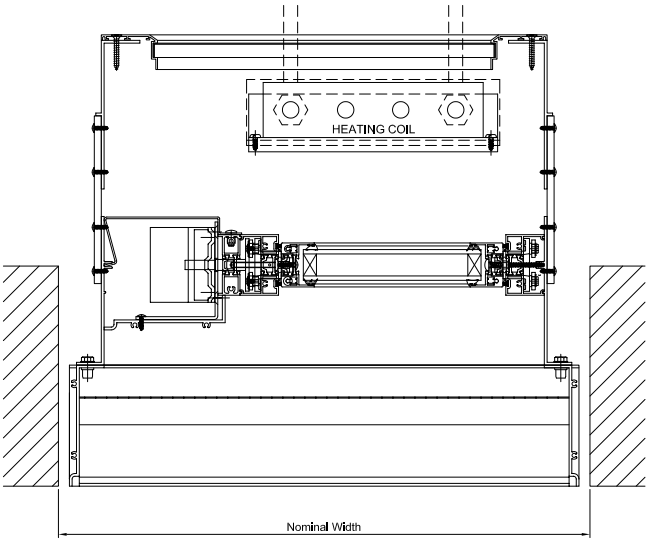
Damper Blade Type WI
The insulated panel is rated at 1.15W/m^2 K thermal value. (Specific U values for any given size of ventilator can be provided. Please consult our Sales Office).

Sizes
A wide variety of sizes are available, please consult our Sales Office for your specific requirements.

Coupling
Ventilators may be coupled horizontally or vertically.



External Louvre featured = SLH-S



NAV WI/HC/DBF & WA/HC/DBF

Maintains the features of the NAV WI/HC and WA/HC with the ability to temper the incoming air with fan assistance.

Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Thermally broken frame and damper blades. Screw joints as standard.

Heating Coil
Refer to page 14 for technical details.

Dynamic Boost Fan
Refer to page 15 for technical details.

External Louvre Options
Slimtype, 50, 75, SLH-S.

Internal Grille Options
A range of grilles are available from the Air Diffusion range.

Finishes
Extruded aluminium (mill finish) Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard, 18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Free Area
N/A

Cd
N/A

Air Leakage at 50 Pa
Length of joint: 0.1m^3/h/m
Area: 0.6 m^3/h/m^2

Wind Driven Rain Rating
SLH-S and Slimtype
Class A up to 1 m/s
75S and 50S
Class B up to 1 m/s

Operation
2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

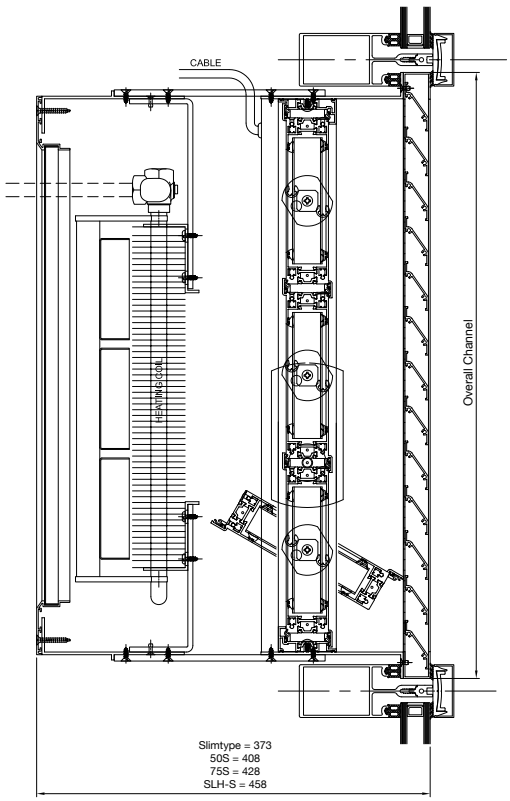
3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

Damper Blade Type WA
The acoustic panel provides approximately 32 Db sound reduction in the closed position.

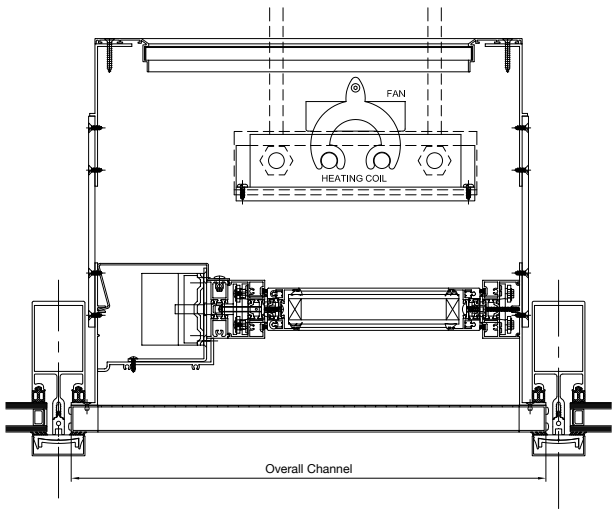
Damper Blade Type WI
The insulated panel is rated at 1.15W/m^2 K thermal value. (Specific U values for any given size of ventilator can be provided. Please consult our Sales Office).

Sizes
A wide variety of sizes are available, please consult our Sales Office for your specific requirements.

Coupling
Ventilators may be coupled horizontally or vertically.

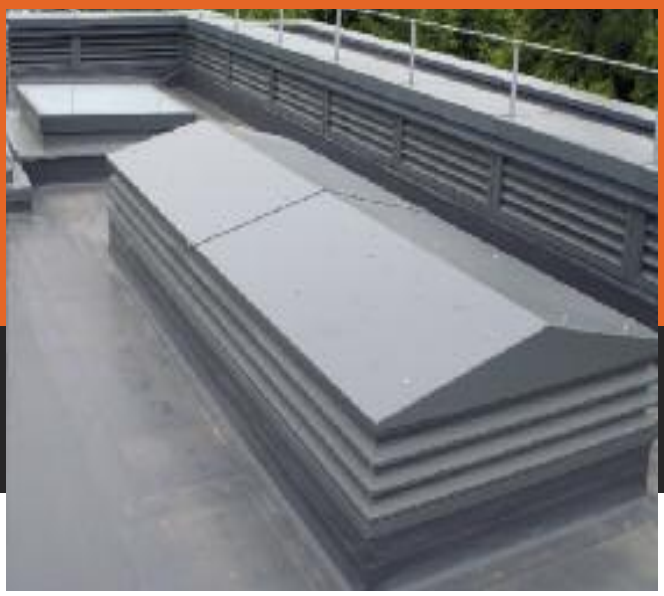


External Louvre featured = Slimtype



NAV RT/RTD

Roof Terminal Air Inlet – Air Exhaust



Specification

Materials
Louvre and damper frame extruded aluminium grade ENAW 6063T6 to BSEN 755.

Frame Construction
Screw joints as standard
Mitred and welded corners.
Pressed aluminium roof.

External Louvre Options
SLH-S.

Finishes
Extruded aluminium (mill finish)
Polyester powder coated to BS 6496. Anodised to BS 3987.

Bird Wire Guard
Fitted as standard,
18g expanded aluminium.

Insect Screen
If specified, 23g expanded aluminium.

Free Area
53%

Cd
0.261

Air Leakage at 50 Pa
Length of joint: 0.1m3/h/m
Area: 0.6 m3/h/m2

Wind Driven Rain Rating
Class A up to 1 m/s

Operation

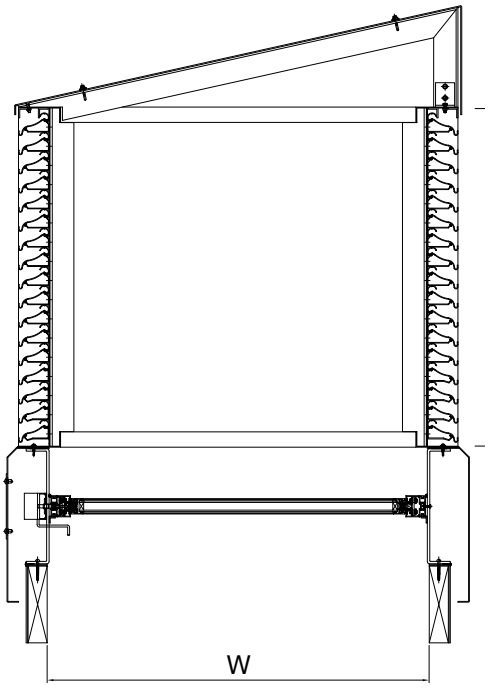
2. 24V AC 10Nm actuator with modulating action or simply drive open and drive closed.

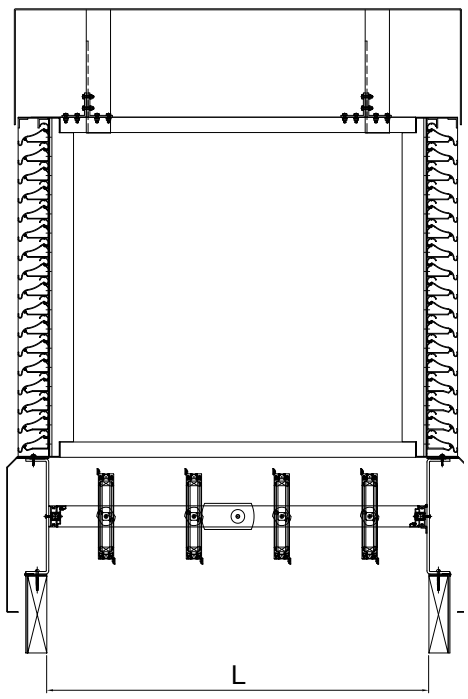
3. 24V AC/DC 7Nm 'fail-safe' spring open or close actuator with modulating action or simply spring open and drive close (or vice-versa).

Damper Blade Type WA
The acoustic panel provides approximately 32 Db sound reduction in the closed position.

Damper Blade Type WI
The insulated panel is rated at 1.15W/m^2 K thermal value. (Specific U values for any given size of ventilator can be provided. Please consult our Sales Office).

Sizes
L x W x H





Heating Coil

The inclusion of a heating coil allows extra flexibility to your natural ventilation system.

During certain times of the year outside air may be too cold for direct entry into the building. Therefore a heating coil can temper the incoming air to allow the desired ventilation rates to take place.

Specification

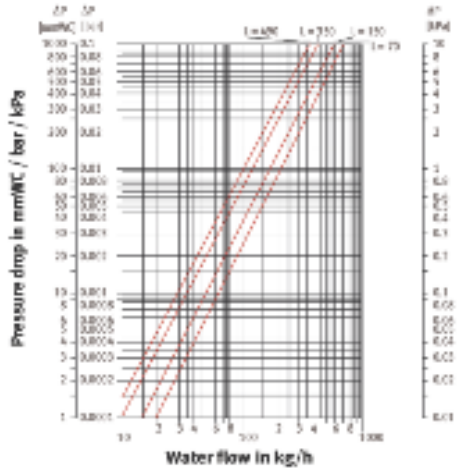
Heating Coil Type 19
Is a low-H_20 heat exchanger which enables efficient output to be received at low flow temperatures. Tested to 20 bar. Working pressure 10 bar.

Pipework Connections
1/2" BSP female connections can be of 'Standard' Type or 'Alternative' Type (see illustration)

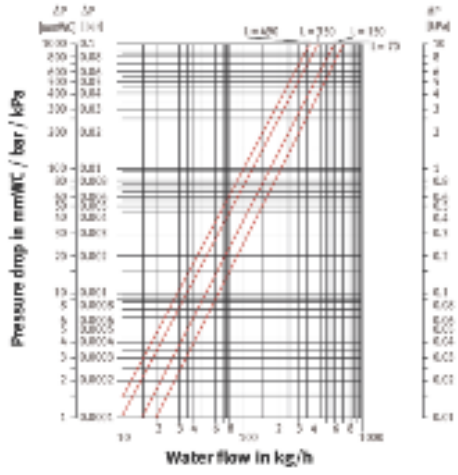
1/2" BSP Drain Connection
1/2" BSP Vent Connection

Pressure Drop Charts

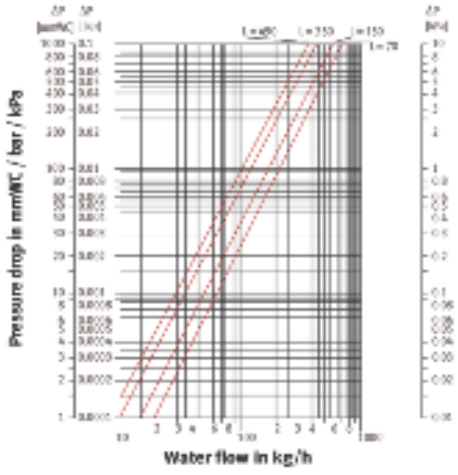
Type 19 Standard



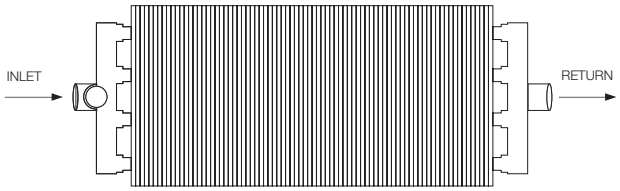
Type 19 Alternative



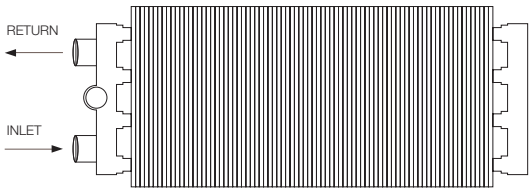
Heat Output Against Flow Rate

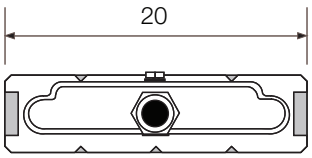


Type 19 standard connection

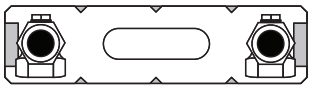


Type 19 alternative connection





Type 19
other end connection



Type 19

Dynamic Fan System

During times when the outside air movement is not favourable to a natural ventilation system, the Dynamic Fan System can assist to create passive ventilation of cool air in summer or increases the heat output from the heating coil to the occupied zone on colder days.

The Dynamic Fan System simply 'snap' fits over the heating coil and requires a 220V AC electrical supply locally to supply the 24V DC transformer supplied with the system.

Control of Dynamic Fan System

Every set includes a control panel, control unit, power supply and instruction manual.

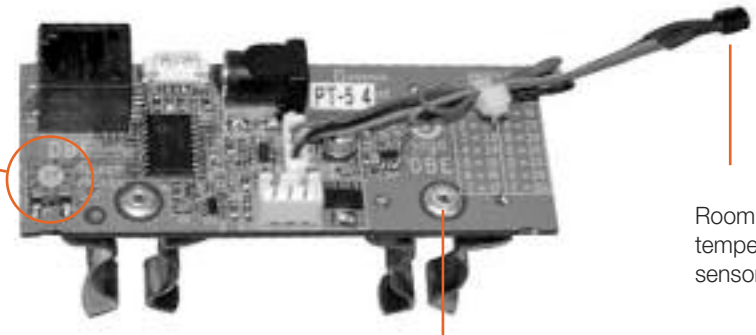
The panel is fitted with a water temperature sensor and a room temperature sensor both of which continue to operate the system in Automatic Mode simply by selecting a room temperature (the factory setting is position 6 that configurates to a value of 22°C).

Modes

Automatic: The speed of the fan will automatically modulate until desired temperature is reached with the fan speed dropping to a standstill at the set level.

Boost: Fan will run at maximum speed for 15 minutes before returning to automatic.

Control Panel
Set desired room temperature at its maximum



Control Unit

Room temperature sensor

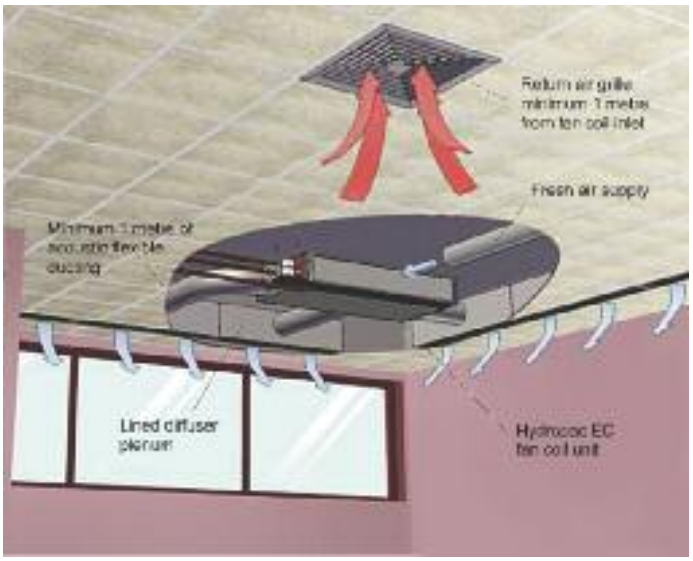
Water temperature sensor

Fan Coils

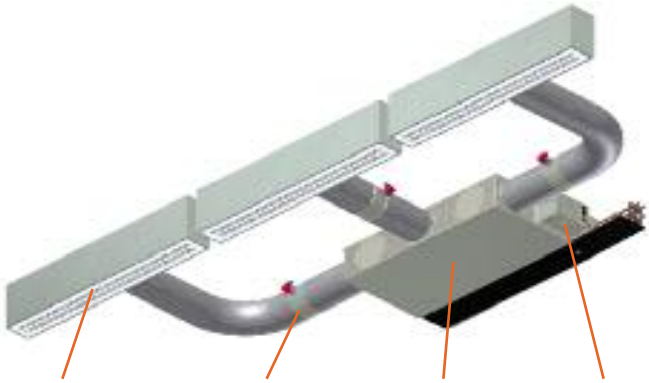
Fan coils have been chosen from the proven Actionair range and are based on the Hydropac eco friendly unit Model EC.

Specification

- Low noise levels
- Outputs available (6.4 Kw cooling) and (6.9 Kw heating)
- Very low energy fans
- Full acoustic and thermal insulation
- BMS control
- Minimal fan heat



Hydropac EC Fancoil Units



EHW230
Hydropac EC (Series EHW)
Actionair Hydropac horizontal ceiling void mounted type fan coils are waterside control, suitable for operation against moderate duct resistances, using chilled water cooling medium and low pressure hot water heating medium. Temperature control is by means of modulating 2 or 4-port diverting valves on heating and cooling, operated by stand alone or BMS controller with room or return air temperature sensor. Designated 'EHW', the series consists of standard 230mm (EHW230) deep. A total of 6 modes are available to achieve the required room conditions. The table below shows data for the smallest model EHW232 and largest model EHW235X.

Hydropac EC (Series 230 EHW) Waterside control 230mm deep ceiling void mounted chassis unit.

Model	Speed Setting	Airflow (l/s)	11 °C min air off ChW 6°C flow, 11°C return		14 °C min air off ChW 10°C flow, 14°C return	LPHW 82°C flow 72°C return	Fan Input (Watts) EHW	N.R. Guide*
			Sensible Cooling (Watts)	Total Cooling (Watts)	Sensible/Total Cooling (Watts)	Heating (Watts)		
EHW232	2	110	1530	1890	1180	2150	33	30
	3	125	1710	2080	1300	2290	40	32
	4	150	2020	2430	1520	2500	50	35
	5	175	2320	2800	1730	2700	61	38
	6	185	2400	2890	1780	2800	68	40
EHW235X	2	230	3300	4010	2550	4910	67	30
	3	275	3900	4720	2990	5410	87	32
	4	340	4800	5800	3640	5910	109	35
	5	405	5400	6370	4290	6510	134	38
	6	445	5600	6450	4670	6910	160	40

The Fan Coil selections are based on the following entering air conditions:

Cooling:
Summer On-coil air 23 °C Dry Bulb, 16 °C Wet Bulb.
Max Coil Pd = 20kPa

Heating:
Winter On-coil air temperature 20 °C Dry Bulb.
Max Coil Pd = 10kPa

General: External Resistance 30Pa. Electrical Supply 230 Volts/ 1 phase /50 Hz. Please refer to our Fan Coil Technical Department for alternative conditions. See page 11 for NR Predictions.

Complementary Products

Roof Terminals

Provide an efficient method of allowing the warm stale air to escape. Also they are used for allowing the entry of fresh outside air in wind driven applications.

Transfer Grille (G45)

A convenient way to allow air to pass through internal partitions, towards the roof terminal zones.

Solar Shading

Reduces the heat gain into buildings and therefore lowers the ventilation and energy requirements.

Fan Coil

The fan coils have been chosen from the proven Actionair range. Featuring low noise, low energy fans with minimal fan heat with full acoustic and thermal insulation.

Nav Units

Provide controlled natural ventilation and free night cooling. Optional tempering of the incoming air.

Fan Floor Swirls

Can be considered for use in floor void situations. The fan will induce cool fresh air at low level and this will displace the warm stale air through the extract or transfer grilles.

Vengen Glass Louvres

Provide controlled ventilation with high free areas and the added benefit of daylight.

Wide Blade Bar Grille (WB)

An alternative robust grille that is suitable for use in areas such as gymnasiums.

Control Options

NATURAL VENT CONTROL PANEL
MODELS VCP-01 / VCP-04

Description

Natural Vent Control Panel Models VCP-01/ VCP-04 are especially designed for use in separate rooms or small zones. Due to the large amount of Naco accessories various functions can be added, e.g. automatic weather, room temperature and indoor air quality (CO_2) control. It is possible to connect several ventilation control panels in order to enable central switching, e.g. closing in case of wind or rain or time-controlled ventilation.

Product Information

- Compact ventilation control
- For separate rooms and small zones
- For triggering of 24V DC drives
- 1 ventilation group
- 1A or 4A actuating current
- Single or central switching (OPEN/CLOSED)

Specification

Material
Plastic

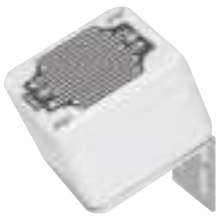
Features

- Compact design for 1A or 4A actuating current in one group.
- Plastic housing, surface mounting type.
- Connection of drives with TMS function possible.
- Ventilation safety function (deadman's principle OPEN/CLOSED), can be firmly encoded.
- Entry for external control, e.g. timer.
- Possibility of connecting rain detector or wind/rain detector without supplementary module.
- Possibility of central weather monitoring (central CLOSED) in conjunction with several VCP-0X.
- Vent buttons, window drives, weather sensors, indoor air quality sensor (CO_2) and room temperature controllers available as accessories.

Components

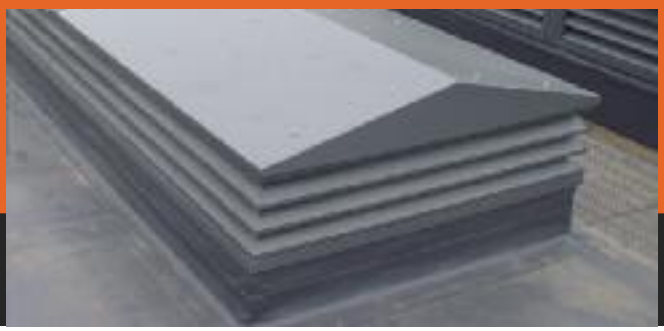
Models VCP-01/ VCP-04

Temperature Sensor



Rain Detector

Vent Open/Close Switch



Technical Data

Type	VCP-01	VCP-04
Power supply	230V AC/50Hz, 30VA	230V AC / 50Hz, 160VA
Output	24V DC, maximum 1A	24V DC, maximum 4A
Class of rating	Short-time duty, 20% ED	Short-time duty, 20% ED
Protective system	IP 50	IP 30
Range of temp	–5°C to +60°C	–5°C to +40°C
Housing	Plastic	Plastic
Colour	RAL 7035, light grey	RAL 7035, light grey
Size W x H x Dmm	139 x 119 x 70	170 x 135 x 85

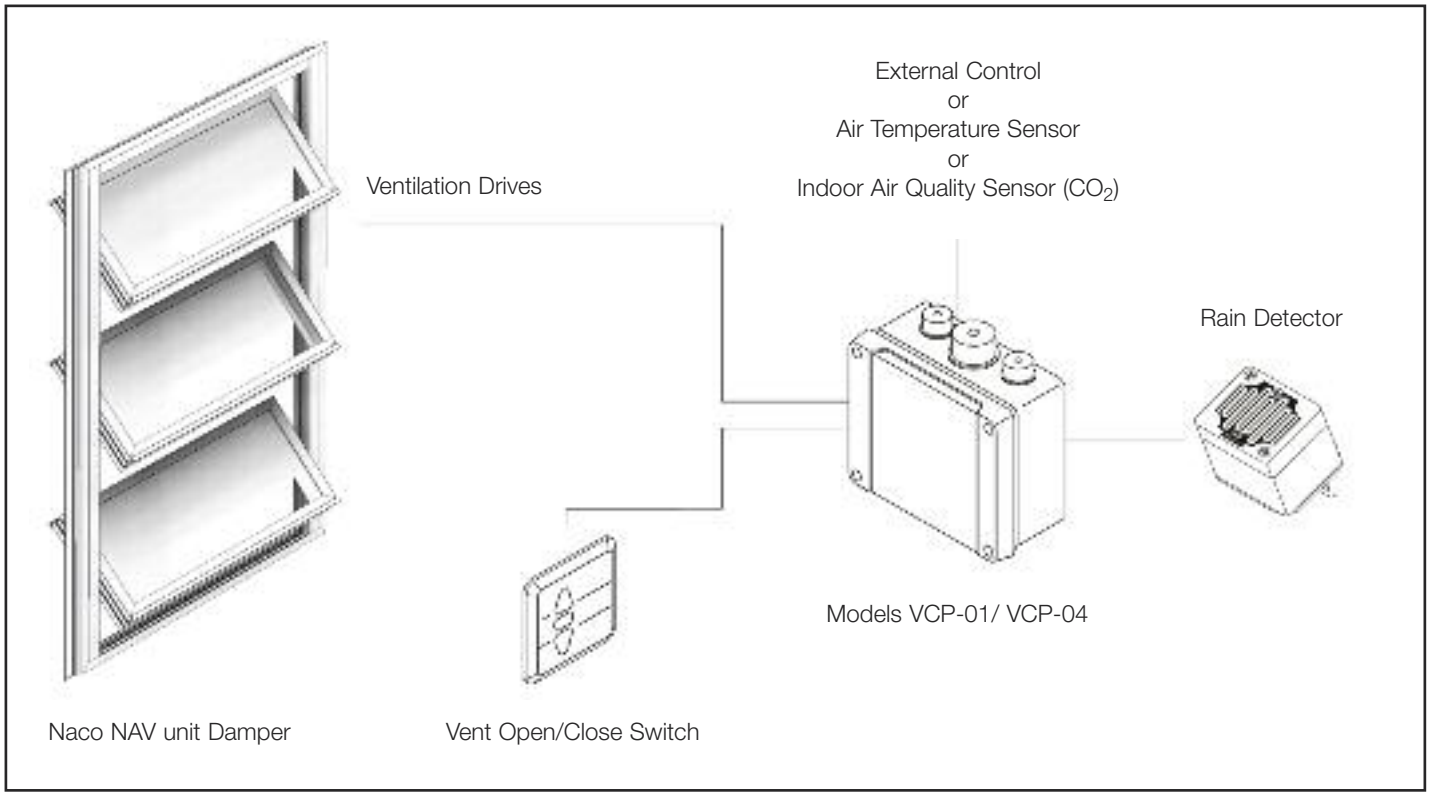
Other Control Options

For situations that do not call for the features of the VCP Control Panel, the ventilation can be controlled by the following two methods.

MOTOR CONTROL
Via the vent open/ close switch

MANUAL CONTROL: Via lever handle

Application Example



For larger systems we can offer a full design, manufacture and installation package. Please contact Naco for full details.

Specification Details

Manufacturing Sizes:

The external louvre sizes will determine the dimensions of the damper assembly and optional interior grille.

Finishes:

The finish selected for the external louvre will as standard be applied to the damper assembly and optional interior grille unless specified differently.

EXTERNAL LOUVRE

50 / AC / ---- / I.S / RAL 9010 / 1400 x 600

Blade Type
Slimtype, 50, 75, SLH-S

Border Type
A, AC

Glazing Adaptor
GA28 (standard)
(other options available, please specify)

Screening
Bird Wire Guard (standard) BWG
Insect Screen (optional) I.S

Finish
Polyester Powder Coating
RAL-Ref No
Satin Anodised
SA
Mill Finish
MF

Screening
Manufacturing Sizes (W x H)
GA = o/a channel
A, AC = Nominal opening

INTERIOR GRILLE OPTIONS

PG / STD

Model
PG (perforated grille)
EC (egg crate grille)
WB0 (wide blade grille)

Finish
STD (as for external louvre)
(Other, please specify)

DAMPER

NAV / WA / HC / - / - / 2 / RH / STD

Model

Damper Type
WA, WI, WI +, WL, WLI

Heating Coil
HC

Dynamic Boost Fan
DBF

Operation
1, 2, 3, 4

Operation Handing
LH or RH (viewed from inside)

Finish
STD (as for external louvre)
(Other, please specify)

ROOF TERMINAL

NAV / RTD / WA / 3 / RAL 9007 / 1400 x 1200 x 950

Model
NAV

Damper Option
RT (without damper) RTD
(with damper)

Damper Type
WA, WI

Operation
2, 3

Finish
Polyester Powder Coating
RAL-Ref No

Satin Anodised
SA

Mill Finish
MF

Manufacturing Sizes (L x W x H)
(to suit builders up stand dimensions)

Natural Air Ventilators

Ruskin
Air Management

Distributor for Scotland

HASL

SPECIALIST H&V DISTRIBUTORS

10 Grange Road, Houstoun Industrial Estate
Livingston West Lothian, EH54 5DE
Tel: +44 (0)1506 438083
Fax: +44 (0)1506 433441
Email: sales@hasl.co.uk
Website: www.hasl.co.uk

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Ruskin Air Management Limited,
Stourbridge Road, Bridgnorth,
Shropshire, WV15 5BB England.

Tel: 01746 761921
Fax: 01746 766450

www.naco.co.uk

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