Installers notes

The ventilation ductwork is schematic - it is the responsibility of the installer to follow best practice.

Ensure the ductwork minimises bends and maximises bend radius where possible.

Extract ceiling boxes placed in the wall need to be as close to the ceiling as possible.

Extract ceiling boxes in the wall can be placed in a more favourable stud wall to minimise additional work, however, it is suggested that this should be kept within the shower enclosure.

Floor boxes within joist work may need reorienting and positioning once the joist orientation is known.

All drawings are preliminary until all supporting drawings and documentation are finalised and the ducting layouts are signed off as final.

Ducting

"Intake and Exhaust" - Ducts connecting the Compact P to the outside SPIGOTS 1&4

Inlet and Exhaust 200mm diameter ductwork outside of the thermal envelope is not required to be insulated as it is at ambient or lower temperature. (I.e through a cold roof space)

Inlet and exhaust 200mm diameter ductwork inside of and up to the position it leaves the thermal envelope is to be insulated with a minimum of 50mm of foil backed insulation, with a conductivity of 0.044W/mK or better, to avoid condensation and heat loss.
In the case of certified Passive House design duct insulation may need to be 100mm.

1,5m minimum separation of the inlet and exhaust vents and positioned in same orientation. Be aware of neighboring properties - 1.5m should be maintained from their properties too.
In the case of certified Passive House design the separation needs to be 2m.

Position inlet vent to avoid any unwanted odours entering the ventilation system, e.g. bins, car fumes, bathroom smells, etc.

"Supply and Extract" - Ducts connecting the Compact P to the manifolds - SPIGOTS 2&3

It is recommended to insulate the 160mm diameter supply ductwork between the Nilan Compact P and the supply manifold, to reduce heat loss, when the supply air is used for heating. It is recommended to use a layer of 25mm foil backed insulation with a conductivity of 0.044W/m2K or better.

It is recommended to position the supply manifold(s) **centrally in the property** so to maximise the even distribution of heat.

It is recommended to insulate the supply manifold/s with 50mm of foil backed insulation, with a conductivity of 0.044W/mk or better.
This is to minimise the possibility of over heating locally to the supply manifold(s) and achieve better heat distribution.
It is the clients preference wether to insulate the 75mm supply distribution duct work.

It is not necessary to insulate the extract manifold/s, 75mm diameter or 200mm diameter ductwork.
Extract Manifolds can be positioned close to the Compact P.

Maintain the 75mm diameter supply and extract duct work within the thermal envelope

Drainage

A condensate drain is needed for the Nilan Compact P.

Sound

Sound attenuation with effective reduction of at least 15dBA on intake, extract and exhaust trunk ductwork.

Sound attenuation with effective reduction of at least 30dBA on supply trunk ductwork.

Consider the sound proofing properties of the room the Nilan Compact P is located in. 40dB sound proofing is recommended but is dependent on the location of the Nilan and external noise sources. If installed in a lighweight structue, additional soundproofing maybe necessary.

Consider mounting the Nilan Compact P on vibration canceling footings if installed on a lightweight base.

Consider short sections of flexible ducting between Nilan Compact P and rigid ductwork to minimise vibration transfer to the building fabric.

Fire

The Ducting layout attached DOES NOT account for regional Fire Regulations.
Fire proof collars, valves or louvres may be needed if the ductwork passes through a fire rated element - It is the responsibility of the building designer to satisfy and advise on Fire Regulations.

Testing and commissioning

To maintain factory warranty, Nilan equipment must be commissioned by an engineer from Nilan.green.

As per any MVHR system, once installed the ventilation system must be balanced by an independent testing company.

All plumbing, electrical and ventilation subcontractors must have appropriate level of competence when installing and factory installation manuals must be adhered to.

Important Notes

General
The values below are a guide to help maximise the performance of the Nilan Compact P system.
The system will work even if one or all of the values below are not achieved, but the system may not be as efficient. There are other aspects of low energy dwellings that should also be considered e.g. solar gains, building location and orientation, thermal bridging etc.

Fabric values
The Nilan Compact P is designed and optimised to work with a low energy building and therefore, recommended minimum U-Values for the following thermal elements are:
- Walls - 0.18W/m2K
- Floor - 0.18W/m2K
- Roof - 0.18W/m2K
- Windows - 0.85W/m2K

Air-tightness
Typically an onsite target of 1ACH@50pa should be achievable with a good level of air-tightness detailing.
An achieved air tightness result of over 2ACH@50pa is not advised.

Structure
Any modifications to the structural elements of the building as part of the ducting layout and installation require assessment by a structural engineer to ensure the integrity of the building and all applicable building regulations are adhered to.

Structural calculations, assessments and re-working of technical drawings are not included as part of the service provided by GP-D and Nilan.Green.

Potential Building Modifications and retrospective designs.

Minimum Posi-Joist depth of 304mm. Any less and an EQUIVALENT CSA rectangular PVC ducting arrangement may be needed.

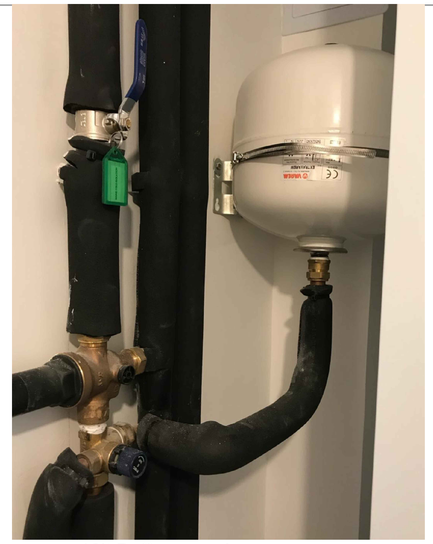
Max Posi-Joist timber width 72mm. Any wider and it is not possible to fit the NilAir manifold between the joists and connect the 75mm ductwork.

Minimum 600mm CLEAR spacing of joists to fit NilAir manifold between joists. Otherwise design into a central services chase.

Note here any building modifications that might be needed. e.g.

Dropped ceilings to accommodate supply or extract manifolds
Minimum Posi Joist depth of 304mm. Any less and an alternative ducting arrangement will be needed.
Posi joists to enable ductwork to be routed
Posi joist central channel widening to 600mm to fit manifold.
Posi Joist orientation to allow central channels for positioning of manifold and/or positioning ductwork in the ceiling void.
Boxed sections to allow for the positioning of the vents 2m apart.
Slight room alterations to fit the Nilan in.

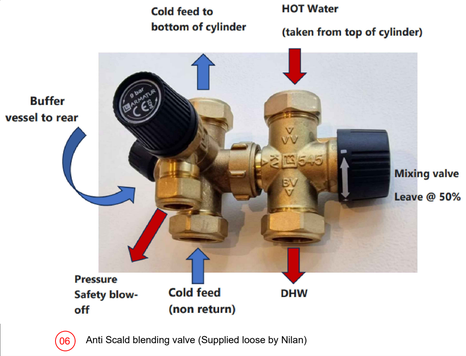
Inlet control group & Tun dish



12lt Buffer vessel

Typical install #1

Typical install #2



06 Anti Scald blending valve (Supplied loose by Nilan)

*Note, waste outlet shown inside unit for illustrative purpose
Waste can be positioned outside unit

Notes for Building Control

HEAT RECOVERY INSTALLATION

THE SYSTEM IS DESIGNED TO OPERATE CONTINUOUSLY TO PROVIDE VENTILATION RATES IN LINE WITH THE REQUIREMENTS OF PART K: 2012 -SYSTEM 4 CONTINUOUS SUPPLY AND EXTRACT VENTILATION WITH HEAT RECOVERY.

THE UNIT SPECIFIC INSTALLATION INSTRUCTIONS AND HOMEOWNER GUIDE ARE SUPPLIED WITH EACH UNIT AND THIS PRODUCT MUST BE INSTALLED INLINE WITH THE MANUFACTURERS GUIDANCE AND DOMESTIC VENTILATION COMPLIANCE GUIDE (2010). THE HOMEOWNER GUIDE MUST BE LEFT WITH THE UNIT.

DUCTING
THE SPECIFIED UNIT MUST BE DUCTED IN ACCORDANCE WITH THE VENTILATION DESIGN. CLEAR PATHS THROUGH THE CEILING/FLOOR VOID FOR THE DUCT TO BE INSTALLED MUST NOT BE ASSUMED - MECHANICAL CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF ANY ISSUES WITH THE DESIGNED DUCTWORK LAYOUT PRIOR TO COMMENCEMENT OF FIRST FIX DUCTWORK.

SEMI-RIGID DUCT - MINIMUM CEILING VOID DEPTH REQUIRED 90MM. GRILLES -MINIMUM CEILING VOID DEPTH REQUIRED 135MM.

DUCTING SHOULD BE INSULATED WHERE IT PASSES THROUGH UNHEATED AREAS AND VOIDS (E.G. LOFT SPACES) WITH THE EQUIVALENT OF AT LEAST 25MM OF A MATERIAL HAVING A THERMAL CONDUCTIVITY OF <0.04W/mK TO REDUCE THE POSSIBILITY OF CONDENSATION FORMING. WHERE A DUCT EXTENDS ABOVE THE THERMAL ENVELOPE OF THE BUILDING, THE SECTION ABOVE THE THERMAL ENVELOPE SHOULD BE INSULATED OR A CONDENSATE TRAP SHOULD BE FITTED JUST BELOW THE THERMAL ENVELOPE LEVEL.

THE MVHR UNIT SHALL BE SUPPLIED WITH A CONDENSATE DRAIN. WHICH SHOULD BE CONNECTED TO THE NEAREST WASTE WATER NETWORK. WHERE UNITS ARE SITED IN A POSITION THAT MAKES THE CONNECTION OF PIPING TO ALLOW A FALL, IMPRACTICAL, A CONDENSATE PUMP MAY BE INCORPORATED AS PART OF THE INSTALLATION.

STANDARD UNINSULATED DUCT REQUIRES MANUAL LAGGING ON SITE.

THE PERFORMANCE OF THE VENTILATION SYSTEM RELIES ON EFFICIENT AIR DISTRIBUTION AND IT IS VITAL THAT DUCT INSTALLATION IS NOT LEFT UNTIL THE LAST MOMENT. FLEXIBILE DUCTWORK WILL NOT BE ACCEPTED

IF TERMINATING TO A TILE VENT CONSIDERATION SHOULD BE PAID TO THE EFFECTIVE EQUIVALENT AREA OF THE TERMINAL TO ENSURE THAT THIS DOES NOT ADVERSELY AFFECT THE FAN PERFORMANCE. PLEASE REFER TO THE PRODUCT INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS. ALL ROOF TERMINATIONS SHALL BE AGREED WITH THE ARCHITECT AND PROJECT ENGINEER PRIOR TO INSTALLATION.

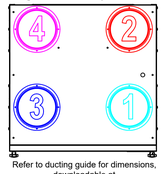
BACKGROUND VENTILATION
NO BACKGROUND VENTILATORS ARE REQUIRED.

EXTRACT VALVES SHOULD NOT BE INSTALLED DIRECTLY ABOVE A HEAT SOURCE. MINIMUM DISTANCE OF 500MM FROM THE NEAREST EDGE SHALL APPLY. PLEASE REFER TO THE PRODUCT INSTALLATION INSTRUCTION FOR FURTHER GUIDANCE.

KEY

01 Flexible Condensate Drain (Supplied pre-fitted by Nilan)
02 12lt Expansion Vessel (Supplied loose by Nilan)
03 Pressure & Temperature Relief Valve (Supplied pre-fitted by Nilan)
04 Tundish (Supplied pre-fitted by Nilan)
05 Inlet Control Group (Supplied loose by Nilan)
06 Anti Scald blending valve (Supplied loose by Nilan)
07 Various drain-down and isolation valves (Supplied by installer)
08 Drainage Pipework C/w air-tight trap (Supplied by installer)

Spigot numbering on top of Compact S
(Spigots on gables also)



Refer to ducting guide for dimensions, downloadable at www.nilan.green/installers.php

Rev.	Date	Description:	Drawn By

CLIENT: SCOTLAND COMPACT "S" PLUMBING INSTALL
PROJECT: XXXXX-XXXXX
TITLE: XXXXX-XXXXX

DRAWN BY:	DATE:	SCALE:	CHECKED BY:
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