

BB101: VENTILATION FOR SCHOOLS

VENTILATION STRATEGY CHECKLIST:

- ✓ **Air quality:** Natural ventilation cannot exceed a daily average of 1500ppm CO₂, dropping to a limit of 1000ppm for mechanical and hybrid
- ✓ **Temperature:** Incoming air supply must be within 5°C of classroom temperature (normally at 20°C)
- ✓ **Operational cost:** Schools spend £150m per year heating and ventilating empty buildings due to overly complex building services*
- ✓ **Emissions:** Natural ventilation has a significantly lower carbon footprint, compared to mechanical (2X) and hybrid (3X)**
- ✓ **Acoustics:** Ventilation systems in classrooms or places of study cannot exceed 40dB, dropping to a limit of 35dB for mechanical systems
- ✓ **Versatile:** Systems must provide cooling in the summer, and heat recovery during the heating season
- ✓ **Mechanical load:** Interviews with schools show a clear preference for less complex systems that can be managed*
- ✓ **Performance:** Systems must adapt to how building usage changes over time

* 'Better places for learning', RIBA

** 'An in-use comparison of classroom ventilation' BAM



Mechanical ventilation

- Fan operated
- Expensive
- High lifecycle cost
- Overheating risk

Hybrid ventilation

- Combination of MV & NV
- Fan turns on when needed
- Recirculation of stale air
- High running costs & heat loss

Natural ventilation

- Low carbon emissions
- Low cost of ownership
- Easy to install & maintain
- Users have sense of control

Pure Natural Ventilation with Intelligent Heat Recovery

Ventive designs natural ventilation systems with the intelligence to adapt to any environment. Our patented technique of Passive Ventilation with Heat Recovery (PVHR™) delivers 100% fresh air while reducing heat loss by up to 72%. All Ventive systems are cloud-connected to enable remote commissioning, real-time performance monitoring, system adaptation and proactive maintenance.

Windhive®



Roof-mounted system combining natural ventilation, heat recovery and system intelligence to deliver 100% fresh air and comfortable temperatures, whatever the weather.

Ventilation rate:

200 l/s, 0W

Heat Recovery:

0W, up to 72% heat recovery efficiency

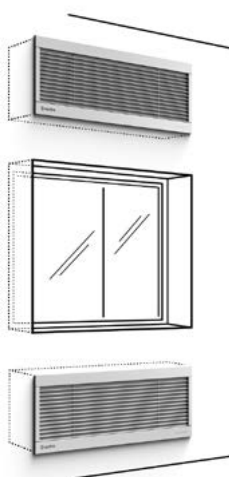
Night time cooling:

Up to 4 ACH, 10°C

Daytime cooling:

Up to 2.2kW cooling output

In-Vent Active



The most efficient ventilation and comfort heating and cooling system in the UK. Enhanced PVHR with an innovative heat pump to deliver fresh air and comfort, whatever the weather.

Ventilation rate:

50 - 200 l/s
(demand responsive)

Heat Recovery:

Up to 2.2kW at 30°C

Night time cooling:

Up to 4 ACH, 10°C

Daytime cooling:

Up to 2.2kW at 18°C

In-Vent Passive



A sophisticated passive ventilation system that fits inside of a single wall-mounted unit. Intelligent air flows provide free heat recovery with fresh air

Ventilation rate:

30 - 150 l/s
(demand responsive)

Heat Recovery:

Up to 55%

Night time cooling:

Up to 2 ACH, 5°C

Learn more:

Send an email to contact@ventive.co.uk quoting "CPD design package" to get a free consultation on your next project. We offer a full design package that includes IES report, thermal performance and BIM objects that give precise modelling data.