Learning is like a sea voyage ... 

... in an airless atmosphere, you’re in the doldrums.

Put fresh wind into pupils’ sails for greater concentration.
Ensure the very best pupil performance and specify
LTG Facade Ventilation Unit Univent® Type FVS.
Unique: the compact, stand-alone ventilation unit for schools, nurseries, conference rooms and meeting rooms.

Expel bad air quality from your school now!

It’s an everyday scene in schools all over the country – after a 45 minute lesson, the windows are opened wide. In comes the fresh air, out goes the stale. But even if the air is renewed completely, CO₂ levels rapidly start to rise again a few minutes into the next lesson. That's how quickly it happens when 30 pupils are together in one classroom and breathing steadily in and out.

Permanent ventilation instead of bursts of fresh air when needed fosters concentration and saves energy.

Windows sometimes cannot be left be kept open permanently – so classrooms are aired in short bursts. The result is that CO₂ levels soon exceed 2,000 ppm, and pupils’ concentration and performance rapidly sink by 15–20%. These are the findings of a team led by Professor Oelsen in Denmark. However, besides improving concentration, letting fresh air in has another effect. Airing a room in the conventional way – by frequently opening the windows – lets valuable energy escape. The radiators must then heat up the cooled air in the room, raising energy costs. An effective way of avoiding this is now available.

With the stand-alone LTG Facade Ventilation Unit Univent® Type FVS, you keep the air fresh AND save energy.

With the LTG Facade Ventilation Unit Univent® Type FVS, local authorities have a cost-efficient and easily implemented solution for lowering the energy costs of buildings such as schools, nurseries and meeting rooms. Highly efficient heat recovery – at a rate of 83% – and very low power consumption make the LTG Facade Ventilation Unit Univent® Type FVS a real energy-saver. The compact and ready-to-install ceiling unit with its slim design is simple and quick to retrofit. It doesn’t interrupt routine work inside the building – and it can even be installed over the weekend if required.

The key advantages:

- Better indoor air quality
- Filtered air
- High thermal comfort
- Lower energy costs
- Low power consumption
- Self-regulating
- High sanitation standards
- Quick and easy to install – even when retrofitted
1. Dauphutal Primary School
2. Theodor Litt School, Giessen
3. IGS Waldschule Egels Secondary School, Aurich
4. Setzen Primary School
The evidence is compelling: pupils have better motivation and better concentration. The days of stuffy classrooms are over at last.

Ventilation problems in schools – a thing of the past.

Even today, a slew of information handouts provide advice on the right "techniques" for airing classrooms – opening all the windows on one side of a room, opening opposite windows to create a through-draught, or opening windows just a crack over longer periods of time. They even recommend appointing people to be responsible for airing in schools, and even introducing "airing rotas". All that is becoming a thing of the past, because efficient airing is becoming increasingly difficult. Energy-saving windows, rising energy costs, safety aspects and outside noise prevent effective use of manual room airing routines.

The FVS ventilation unit automatically provides filtered, fresh air.

If CO₂ levels in the room rise, the LTG Facade Ventilation Unit Univent® Type FVS starts automatically. Air is drawn in from the outside and flows into the classroom filtered and pre-heated. Needless to say, it does not prevent the windows from being opened if so wished. The ventilation unit then simply switches itself off automatically. This not only saves energy, but also ensures that there's always sufficient fresh air to breathe – the best means for guaranteeing concentration during lessons.

Advantages for you and your class:

- CO₂ levels are kept permanently low, ensuring high concentration ability all day long.
- Good news for allergy-sufferers, as incoming air is effectively filtered.
- Low, barely perceptible sound level. A great advantage for a teaching environment, especially during tests.
- Fresh air at all times, even during the winter months when temperatures remain below freezing for days on end.
A stroke of genius – Effective ventilation of classrooms has never been simpler.

Automatic, low on maintenance and completely independent.

Concerning building thermal performance is generally on roofs, facades and windows to improve thermal and air insulation. However a significant problem exists in terms of the ventilation of rooms with reference to heat loss, especially in classrooms. This is where the LTG Facade Ventilation Unit Univent® Type FVS provides really effective help. By providing a nominal flow of 680m³/h, it supplies up to 30 pupils with a constant flow of fresh air. And in doing so, it consumes less energy than a radiator, which has to keep warming up the air in the room each time the room is aired manually.

The LTG Facade Ventilation Unit Univent® Type FVS: your system solution for mechanical ventilation

One of the key advantages of the LTG Facade Ventilation Unit Univent® Type FVS lies in its stand-alone design. Unlike with centralised ventilation systems, it requires no air distribution network, no costly structural work or installations. First and foremost, this stand-alone solution gives you the freedom to ventilate all classrooms on an individual basis – automatically depending on the CO₂ level, without the need for someone to switch the system on and off. The only constraint is the annual filter change, which can easily be done by the building management.

Advantages of the LTG Facade Ventilation Unit Univent® Type FVS

- Lower energy costs despite greater intake of fresh air
- Automatic air intake on the basis of CO₂ levels, removing the risk of incorrect use
- Lower primary energy requirement compared with conventional window airing
- Simple to install; can be installed even during school hours
Compact, stand-alone design: a fully integrated ventilation system in itself.

- **Weather protection grille**
  - Outside air, exhaust air

- **Ventilation unit**
  - Combined cut-off and mixing valve
  - Supply and return air fan
  - Supply and return air filter
  - Heat recovery unit
  - Bypass valve
  - Regulator

- **Sound absorber**
  - Supply and return air
  - Temperature sensor for supply and return air

- **Air connection box**
  - for supply and return air

Contact us today for more details – phone us on

Tel.: +49 (711) 8201-0
The Fresh-air Maker: Selection and performance data.

Technical data

<table>
<thead>
<tr>
<th>Operating mode</th>
<th>Air volume (m³/h)</th>
<th>Sound level* $L_{PA}$ dB(A)</th>
<th>Electrical consumption** $P_e$</th>
<th>Heat reclaim</th>
<th>Minimum supply air*** temperature</th>
<th>Energy efficiency class</th>
<th>F7 filter class (dust spot efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>450</td>
<td>31</td>
<td>50 W</td>
<td>0.85</td>
<td>17°C</td>
<td>(SFP 1)</td>
<td>Coarse pollen → 99% breathable fine dust PM 10 → 95%</td>
</tr>
<tr>
<td>100%</td>
<td>680</td>
<td>34</td>
<td>130 W</td>
<td>0.83</td>
<td>17°C</td>
<td>(SFP 1)</td>
<td>Coarse pollen → 99% breathable fine dust PM 10 → 95%</td>
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</tbody>
</table>

Nighttime ventilation 450 or 680
Regulated night-time ventilation cycle to cool the building

* Values measured in typical classrooms with 11dB noise attenuation  ** Full supply and return air fan  *** with optimised regulation strategy for all external air

Unit data

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVS-DI built-in version</td>
<td>3,842 mm</td>
<td>832 mm</td>
<td>434 mm</td>
<td>300 kg</td>
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<tr>
<td>FVS-S exposed</td>
<td>4,444 mm</td>
<td>1,192 mm</td>
<td>434 mm</td>
<td>340 kg</td>
</tr>
</tbody>
</table>

Cabling and connection requirements:
- 230V/50Hz mains supply
- Condensate connection

Fine dust concentration curve in window-aired classrooms [1/h] or classrooms with mechanical ventilation / FVS [3.3/h]

FVS-S sound pressure level in the classroom
Outside air and discharge air fan, 100% operation mode: 680 m³/h, bypass valve 100%