



Case study

Clean air, rethought: High additional output with minimal energy consumption



Customer

Nencki AG



Location

Langenthal (CH)



Sector

Plant and vehicle construction/
heavy industry



Dust reduction

Up to 67 %

At a glance

“We spend a large part of our day at work. That’s why we want everyone at Nencki to not only feel safe, but comfortable. The introduction of air purification systems from Zehnder Clean Air Solutions was another important step towards a healthier working environment for us.”

Stephan Gudde, Operations Manager

Challenges

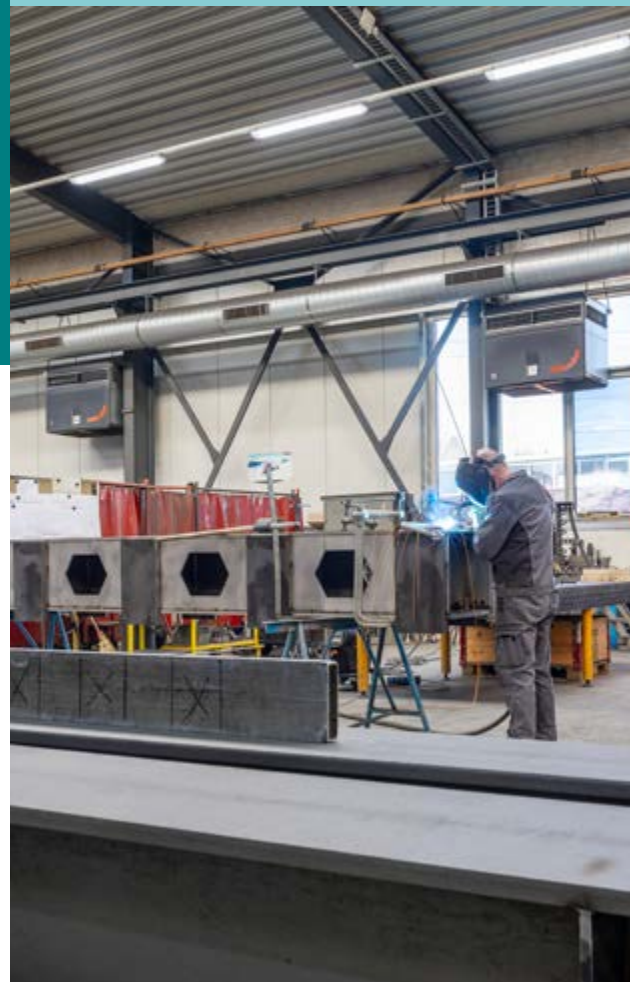
The steady growth of Nencki AG had not only led to a higher production volume over the years, but also to increasing smoke development in the halls. The fumes spread to other areas of the company and posed a potential danger to employees and the existing ventilation system could no longer keep up with this challenge. What’s more, it was already causing significantly high electricity costs. A more timeless solution was needed.

Benefits

By partnering with Zehnder, Nencki expected clean air, a no-fuss installation process and low power consumption. These benefits, combined with the attractive subscription model, which does not involve a high initial investment, provided the perfect conditions for meeting the company’s ambitious requirements. And the results are impressive: up to 67 % less dust, with significantly lower power consumption than before.

About Nencki AG

Nencki AG is a Swiss family business that specialises primarily in the manufacture of machines and systems. The main business areas are railway technology, plant engineering and vehicle technology. Every day, almost 100 employees put their heart and soul into ensuring that Nencki’s customers can expect the highest quality.



Air purification systems at Nencki: cleaner and more efficient

Nencki made a name for itself early on as a renowned family business from Switzerland in plant and vehicle construction. In this heavy industry sector, the company has long stood for innovation and quality in the field of railway, plant and vehicle technology.

In an industry where precision and reliability are crucial, the quality of the working environment is a factor that should not be underestimated. In order to continue to fulfil this requirement, Nencki was looking for an air purification system that could easily cope with the amount of dust and welding fumes in the two production halls.

Challenges and finding solutions

Before working with Zehnder Clean Air Solutions, Nencki relied on a ventilation system that had served them well for years but was not designed for the company’s steady growth and the resulting increase in dust and smoke. The system was too small from the outset and long air ducts further reduced performance.

The increasing smoke development meant that

ventilation had to be carried out more frequently as a temporary solution; to keep air pollution low and to continue to provide employees with adequate protection. Nencki immediately realised that this was not an ideal situation. After all, the ventilation system was intended to support the welders and not the other way round. In addition, ventilation also led to higher electricity costs, especially in winter, as the heated air escaped from the halls.

It was clear to those involved that an air purification solution needed to be found that:

- has the smoke and dust development in the Nencki halls effortlessly under control.
- is easy on the wallet in terms of electricity consumption.
- can adapt to the requirements of the company as it continues to grow, and to incrementally higher levels of smoke and dust.

An article in a trade magazine finally led the company to Zehnder Clean Air Solutions to find a solution.

The simple installation of the air purifiers, the low power consumption and the attractive subscription model quickly won them over. Especially because the flexible service package meant that there were no high initial investment costs.

Technical implementation and tangible results

Before installing the air purifiers, Zehnder Clean Air Solutions carried out a comprehensive air quality analysis of the two welding halls to develop a customised solution that uses the minimum number of air purification systems for the maximum amount of air purification. As a result, both the filter configuration and the installation of the units were customised specifically to Nencki's needs.

Zehnder Clean Air Solutions has installed a total of 11 individually configured air purifiers in two production halls. These provide a significant improvement in air quality with reduced power consumption. The results speak for themselves.

Comparison: Old ventilation system vs. Zehnder air cleaners

Old ventilation system:

- Energy consumption: 6.5 kW/h.
- Air circulation: 3,600 m³/h.
- Designed for smaller operating sizes; drops in performance with increased requirements
- Need for regular ventilation, inefficient and energy-intensive, especially in winter.

Zehnder air cleaners:

- Energy consumption: approx. 3.6 kW/h (for all eleven appliances together).
- Air circulation: approx. 55,000 m³/h (combined output of all units).
- Use of innovative flicker filters for maximum air purification performance, with minimum energy consumption.

Compared to the old air purification system, this means the customised solution for Nencki achieves 15 times the air circulation with just under half the energy consumption. Now, Nencki's hall doors can remain closed at any time of year, even in winter, with a clear conscience. The (heated) air stays where it should be.

Positive effects and a look into the future

The implementation of Zehnder air purification systems has not only dramatically improved the air quality at Nencki, but has also contributed to the general satisfaction and well-being of the employees. **The combination of cleaner air, lower energy consumption and easy maintenance represents a sustainable contribution to the working environment and efficiency in the production process.**

In view of these successes, Nencki is now planning the next step: dismantling the existing ventilation system in order to fully utilise the air cleaning system from Zehnder Clean Air Solutions. The Zehnder service team has already designed the installation so that further optimisation is possible once the ventilation ducts have been removed. This further emphasises Nencki's commitment to continuous improvement and demonstrates their confidence in Zehnder Clean Air Solutions' advanced solutions.

The bottom line?

The collaboration between Nencki AG and Zehnder Clean Air Solutions is a prime example of how innovative technologies and sustainable thinking can revolutionise working conditions in the industry. Nencki has not only cemented its position as a pioneer in air quality and energy efficiency, but is also setting new standards for the entire industry.