ENS

clean air solutions

AIR QUALITY IMPROVEMENT

advice, development & support

ENS CLEAN AIR SOLUTIONS

Our mission is to create a healthy living environment that prioritizes quality of life

ENS Clean Air is a Dutch company specialising in air quality improvement strategies and technologies. Our particular focus is on reducing exposure to particulate matter and emission control in the built environment and industry.

We offer customized advice, insight and solutions that fit everyone's unique situation. With over 15 years of experience, we've built extensive expertise in measurement, modeling, and practical improvement strategies.

CUSTOMIZED SUPPORT FOR UNIQUE SITUATIONS AND LOCATIONS

ANALYSIS & RESEARCH

We combine advanced technologies with years of expertise to provide clear insights into your location.

- Building and environmental analysis
- Source identification and risk analysis
- Measurements and data reporting
- 3D modeling of the building & emission points
- Temporary trial installation of Aufero

ADVICE & STRATEGY

We turn insights into practical advice and strategic decisions that are aligned to your situation.

- Impact assessment
- Process and building improvement advice
- Impact on risk inventory & evaluation (RI&E)
- Installation advice

PROJECT & IMPLEMENTATION

We implement solutions in practice and guide every step – from concept to execution – with a focus on quality and results.

- Project management
- Product design and development
- Product installation
- Process innovation

EDUCATION

We provide support, guidance, and educational services to share knowledge and expertise and offer assistance.

- Consulting and educational services
- Knowledge sharing
- Research partner

STRATEGIES FOR A HEALTHY AND FUTURE-PROOF ENVIRONMENT

QUICK SCAN

Quick insight into the situation at your location

Orientation
- ✓ Building analysis
- ✓ Source identification
- + Risk analysis

Analysis
- ✓ Indicative measurement
- + Detailed measurements

FROM €2500,-

IMPACT ANALYSIS

Insight into the situation at your location and impact assessment

Orientation
- ✓ Building analysis
- ✓ Source identification
- ✓ Risk analysis
- + Environment analysis

Analysis
- ✓ Indicative measurement
- + Detailed measurements
- + Temporary placement Aufero
- + 3D modeling and CFD

Advice
- ✓ Effect indication
- + Implementation proposal

FROM €5000,-

CUSTOM IMPROVEMENT ADVICE

Insight into the situation at your location and improvement advice

Orientation
- ✓ Building analysis
- ✓ Source identification
- ✓ Risk analysis
- + Environment analysis

Analysis
- ✓ Indicative measurement
- + Detailed measurements
- + Temporary placement Aufero
- + 3D modeling and CFD

Advice
- ✓ Effect indication
- ✓ Implementation proposal
- + Impact assessment

Implementation
- ✓ Project management
- + Market analysis
- + Engineering

FROM €7500,-

*Prices excl. VAT

INNOVATIVE AIR PURIFICAITON FOR A HEALTHY FUTURE

DEMONSTRATION

Experience temporary clean air at your location

Analysis
- Temporary placement Aufero
- Indicative measurement
- Detailed measurements

Advice
- Effect indication
- Implementation proposal
- Impact assessment

FROM €3500,-

PRODUCT INNOVATION

Developing a custom product with our technology

Analysis
- 3D Product modeling & CFD
- 3D Environmental modeling
- Indicative measurement
- Detailed measurements

Advice
- Effect indication
- Implementation proposal
- Impact assessment
- Testing Proof-of-Concept

Implementation
- Project management
- Market analysis
- Engineering

PRICE ON REQUEST

*Prices excl. VAT

CASE STUDY **PRORAIL - DUSTLESS RAILWAY**

SITUATION

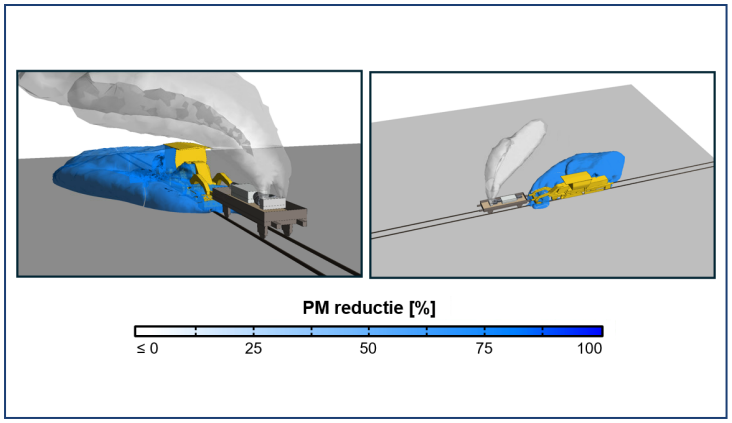
During railway maintenance work, a significant amount of dust is released, which may contain quartz and pose health risks to railway workers when inhaled. That is why, in 2023, ProRail challenged the market to develop innovative solutions that reduce dust formation while also being economically and environmentally efficient. This process consumes a large amount of water, which is not always readily available and is also very costly. Drawing on experience from previous applications in mobile machinery, such as with **BOMAG**, ENS Clean Air proposed a **product development** that does not rely on consumables like water or filters.

OUR SOLUTION

- Market analysis & Business case
- Design and engineering of a custom solution
- 3D airflow analysis and impact assessments
- Proof-of-concept testing and measurements

THE RESULT

Following a feasibility study, a development and testing phase was initiated, during which the solution was precisely calculated and engineered. Strukton Rail provided ballast profiling machine 'Ploeg 14' to carry out field tests, focusing on dust generation during the brushing of remaining ballast stones in the track. Tests were conducted on a dedicated test track under operational conditions to evaluate the principle, yielding convincing results. Hardly any dust was released in the immediate vicinity of the brush housing, and airflow models demonstrated a reduction in exposure of over 80%.



CASE STUDY **MUNICIPALITY OF WEERT**

SITUATION

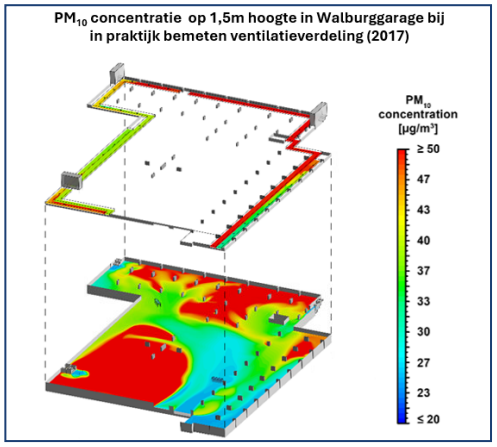
In 2017, the municipality of Weert asked ENS Clean Air to investigate the added value of air quality improvement in its municipal parking garages. The city center of Weert has six municipal parking garages that contribute to the accessibility and connectivity of the area. At the same time, they play an important role in improving the urban living environment. To assess the impact of implementing Aufero units, ENS Clean Air conducted an **impact analysis** in the Walburg Garage.

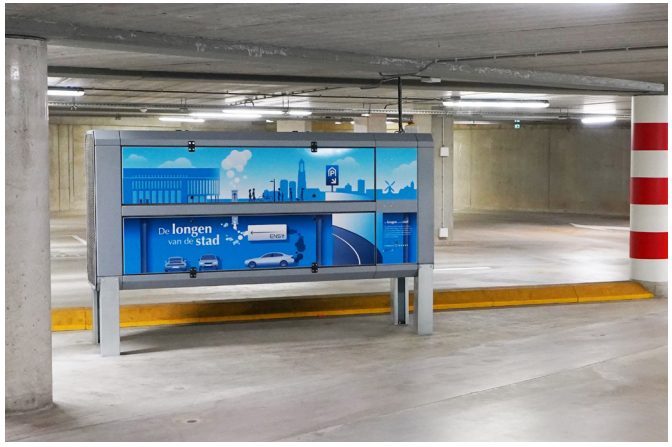
OUR SOLUTION

- Indicative measurements to map the situation
- Impact assessment based on CFD simulations (using measurements as input)
- Recommendations for air purification units at strategic locations to maximize purification efficiency

THE RESULT

In the Walburg Garage, a **building analysis** and baseline measurement were carried out. After an **extensive airflow analysis**, two Aufero systems were installed and their effect was determined. As part of the evaluation, it was also recommended to reconfigure the existing ventilation system. The results of the impact study showed that fine dust concentrations in the garage were reduced by more than 50%. This evidence was sufficient to convince the municipal council to equip the remaining five garages— including the Centrum Garage beneath City Hall— with air purification systems as well. To raise awareness among parking garage visitors, the installations were fitted with engaging infographics explaining the added value of the systems and highlighting the importance of clean air.





CASE STUDY **NEFIT INDUSTRIAL**

SITUATION

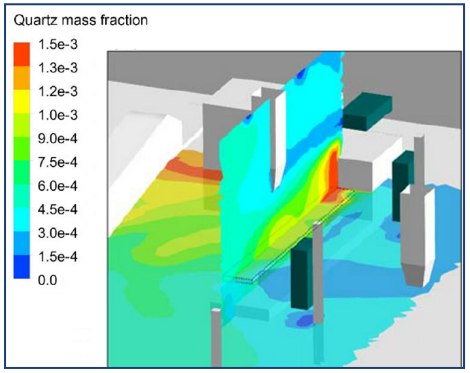
Nefit Industrial is a leading high-tech manufacturer of cast metal components for the automotive, construction, and installation sectors. At a specific workstation where castings are removed from the mold and processed, high quartz concentrations have been measured. Over the years, various solutions—such as water misting and extraction—have been tested, but a definitive solution has not yet been found. In collaboration with ENS Clean Air, a **customized improvement strategy** has been initiated with the goal of consistently and verifiably staying below the occupational exposure limit for respirable quartz.

OUR SOLUTION

- Situation analysis and on-site measurement
- Pilot installation
- Impact assessment based on CFD simulations
- Recommendations for air purification units at strategic locations to maximize purification efficiency
- Effect measurement (by an accredited agency)

THE RESULT

Based on input from a **pilot installation** and **on-site measurements**, an improvement strategy was developed using **airflow analysis**. This strategy directs clean air from **air purification systems** specifically toward the workstations, creating an air-controlled environment. As a result, employees can work safely without the need for personal protective equipment (PPE). Through the targeted integration of six Aufero air treatment systems, employee exposure to respirable quartz and dust remains well below European legal limits. Annual evaluations, conducted by an accredited organization, confirm the continued effectiveness of these systems. The Aufero systems operate continuously during production hours and are seamlessly integrated into our regular maintenance routines.



CASE STUDY **PEPSICO**

SITUATION

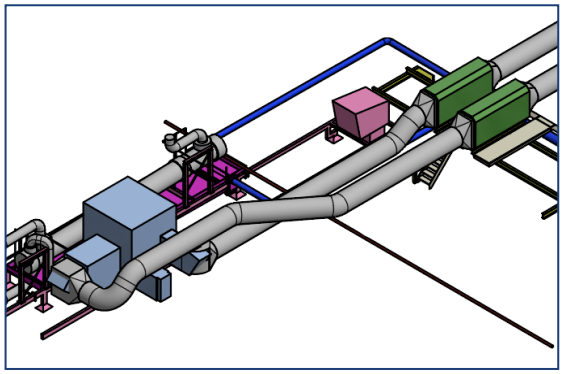
Food production can release odors that may be perceived as a nuisance by the surrounding community. At its facility in Broek op Langedijk, PepsiCo produces chips, where odor control is required—due to environmental permit conditions—at several production lines, including those involving flavorings and ovens. ENS Clean Air oversaw the **engineering** and **implementation** of a combined solution for aerosol capture and odor control.

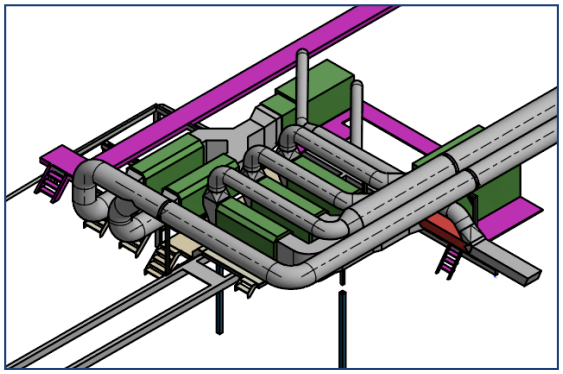
OUR SOLUTION

- Project management
- Effect indication
- Implementation proposal
- Effect measurement (by an accredited agency)

THE RESULT

After the initial installation at the flavoring production line, a **verification measurement** showed that the required odor reduction of 70% was more than achieved. Following this, a similar solution was implemented across multiple production lines, including the frying ovens. Each production line has its own characteristics, such as airflow rate, odor concentration, temperature, and humidity. Frying also emits oil vapor. For each line, a **customized improvement strategy** was developed, and after installation, the system's effectiveness was tested, including maintenance considerations. A neighborhood survey conducted after installation showed that the nuisance had been significantly reduced, which satisfied both PepsiCo and the local community.





GET IN TOUCH

Would you like to make an appointment or are you curious about how we can help you? Feel free to contact us - our team is here to help you

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