

In an era where environmental stewardship and regulatory compliance are no longer optional, industrial facilities must increasingly balance operational performance with sustainable practices. Among the most pressing environmental concerns is air pollution, particularly in sectors involving chemical processing, wastewater treatment, and manufacturing. Emissions of noxious fumes, corrosive gases, and unpleasant odours not only pose health and safety risks but can also damage equipment and tarnish a company's environmental credentials.



Enter fume scrubbers and odour control units (OCUs)—vital technologies that capture and neutralise airborne contaminants before they are released into the atmosphere. These systems are the unsung heroes of clean air compliance, and companies like **Roperhurst**, a leading UK-based manufacturer and installer of industrial ductwork and containment solutions, are pioneering their integration into modern infrastructure.

What Are Fume Scrubbers and OCUs?

Fume scrubbers—also known as gas scrubbers—are devices designed to remove harmful components from industrial exhaust gases.

The process often work through wet scrubbing, where the contaminated gas stream is brought into contact with a scrubbing liquid that absorbs or reacts with the pollutants.



Dry and semi-dry scrubbers also exist, utilising absorbents like activated carbon or lime. Odour control units, on the other hand, focus primarily on the treatment of malodorous compounds, particularly hydrogen sulphide (H₂S), ammonia (NH₃), and volatile organic

compounds (VOCs), common in wastewater, food processing, and composting operations. These systems typically use a combination of physical (e.g., filtration), chemical (e.g., neutralisation), or biological (e.g., biofilters) techniques to mitigate odours.

The Business Case for Air Treatment Solutions

1. Regulatory Compliance

The UK Environment Agency, along with European and global environmental regulations, mandates strict emission controls, especially for sectors like water utilities, chemicals, and pharmaceuticals. Non-compliance can lead to fines, shutdowns, and reputational damage. Fume scrubbers and OCUs are essential tools for meeting these standards, ensuring emissions stay within allowable limits.

2. Health and Safety

Workplace exposure to harmful gases like chlorine, sulphur dioxide, and acidic vapours can result in acute and chronic health issues. Scrubbing systems protect employees by maintaining safe air quality levels, contributing to a safer and more compliant working environment.

3. Asset Protection

Corrosive fumes don't just affect people—they damage infrastructure. Acid gases can corrode metal structures, degrade paintwork, and reduce the lifespan of expensive equipment. By capturing these fumes at the source, scrubbers extend asset life and reduce long-term maintenance costs.

4. Community and Social Responsibility

Odours may not be toxic, but they are disruptive. Facilities near residential areas must be especially vigilant about their odour footprint. Effective odour control helps maintain good neighbourly relations and protects the company's social licence to operate.

5. Sustainability Goals

Today's businesses are increasingly evaluated on environmental, social, and governance (ESG) metrics. Clean air technology supports decarbonisation, improves environmental performance, and aligns with corporate sustainability frameworks.

Roperhurst: Engineering Clean Air Solutions

For over 50 years, **Roperhurst** has been at the forefront of fabricating and installing industrial plastic ductwork and fume containment systems across the UK. Their extensive experience working with corrosion-resistant materials like PVC, polypropylene, and GRP makes them a trusted partner in sectors where chemical resistance and structural integrity are paramount.



Roperhurst's fume scrubber systems are customised to client specifications and designed with lifecycle performance in mind. From water utilities managing odours at treatment works, to chemical plants needing multi-stage scrubbing for complex gas streams, Roperhurst delivers tailored solutions that balance efficiency, durability, and cost-effectiveness.



One recent project highlights this expertise: Roperhurst designed and installed a multi-stage wet scrubber system for a large municipal wastewater treatment plant in the South of England. The system was built using PVCu and GRP components to resist the corrosive effects of hydrogen sulphide and organic acids. Not only did the project

significantly reduce odour complaints from nearby residents, but it also met the client's sustainability objectives and was delivered ahead of schedule.

Innovation in Materials and Fabrication

Roperhurst stands out for its commitment to innovation—not only in design but also in fabrication techniques. Using CNC routing and precision welding, they achieve high-quality standards in both pre-fabricated and site-built installations. This attention to detail translates to longer service life and lower maintenance requirements for fume control systems.

Furthermore, the company is adept at integrating fume scrubbers and OCUs with broader ducting systems, ensuring optimal flow rates, pressure drops, and energy efficiency. Their ability to model system dynamics and provide turnkey installations reduces risk and ensures compliance from day one.

Looking Ahead: The Future of Air Quality Engineering

As environmental expectations tighten and public awareness increases, the demand for effective air treatment technologies will only grow. New developments, such as hybrid scrubber systems that combine physical, chemical, and biological processes, and real-time emissions monitoring, are pushing the boundaries of what's possible in emission control.



Roperhurst is well-positioned to lead in this space, leveraging decades of experience and a reputation for quality and reliability. Their continued investment in skilled personnel, materials science, and project management means clients get not just a product, but a partner committed to environmental excellence.

Conclusion

Clean air is not just a regulatory requirement—it's a business imperative and a moral responsibility. Fume scrubbers and odour control units offer industries a reliable, proven way to meet their environmental goals while maintaining operational efficiency. Through custom solutions, expert fabrication, and a track record of successful installations, Roperhurst exemplifies how engineering can align with sustainability.

For facilities looking to future-proof their operations, investing in high-quality air treatment solutions isn't just good practice—it's smart business.

About Roperhurst

Roperhurst has been providing bespoke plastic ductwork and containment solutions since 1976. With expertise across the water, chemical, manufacturing, and pharmaceutical sectors, they deliver durable, efficient systems for fume extraction, odour control, and process ventilation. Learn more at www.roperhurst.com.

Roperhurst is part of the Safety Critical Plastic Solutions Group, with four locations across England and Wales. SCPS Group offers turnkey plastics engineering solutions from consultancy and design through manufacture and commissioning to on-going maintenance. Learn more at www.scps-group.com.
