MASHWORTH SERVICES
Professional - Reliable - Electrical

Extractor Fans Explained - Choosing the Right Ventilation for Your Bathroom

Introduction

Extractor fans are an essential part of any bathroom installation, helping to remove moisture, prevent condensation, and reduce the risk of mould over time.

While they are often overlooked, choosing the correct type of extractor fan - and designing the installation properly - makes a significant difference to how well your bathroom performs day to day.

Why Extractor Fans Matter

Bathrooms naturally produce high levels of moisture through showers, baths, and general use.

Without effective ventilation, this moisture can lead to:

- Condensation on walls and ceilings
- Mould growth over time
- Damage to paint, plaster, and finishes
- Poor air quality

A correctly selected and installed extractor fan helps remove this moisture efficiently, protecting both the space and the installation.

Types of Extractor Fans

Wall-Mounted (Axial) Extractor Fans

Wall-mounted extractor fans are the most common type and are typically installed directly through an external wall.

They are generally suitable for smaller bathrooms where the fan can vent straight outside with minimal ducting.

Best suited for:

- Small bathrooms or cloakrooms
- Installations with a direct external wall

Typical wall-mounted extractor fan installed through an external wall for direct ventilation.

- Simple layouts with short duct runs

While simple and cost-effective, their performance can be limited in larger spaces or where longer duct runs are required.

Inline Extractor Fans

Inline extractor fans are installed within the ducting, usually in a loft space or ceiling void, rather than directly in the wall or ceiling.

This allows for more powerful extraction and quieter operation, making them ideal for larger bathrooms or where duct runs are longer.

Best suited for:

- Larger bathrooms or en-suites
- Installations with longer duct runs
- Situations where quieter operation is preferred

Typical inline extractor fan installed within ducting to improve performance and reduce noise.

Other Features to Consider

Extractor fans can also include additional features depending on the requirements of the space:

- **Humidity sensors** – automatically activate when moisture levels rise
- **Timer overrun** – continues running after the light is switched off
- **Low noise operation** – important in quieter environments

Choosing the Right Extractor Fan

Selecting the correct extractor fan isn't just about the fan itself - it depends on the overall layout of the property.

Key factors include:

- The size of the bathroom
- The distance to an external wall
- The route and length of ducting
- How the space is used day to day

This is why extractor fans should be considered as part of the overall design, not added as an afterthought.

We assess this as part of the wider installation, ensuring the fan, ducting, and layout all work together effectively.

Core Drilling and Extractor Fan Sizes

Extractor fans are typically installed through a core-drilled hole in the wall or ceiling, allowing air to be ducted safely to the outside.

These openings are usually sized at 4", 5", or 6", depending on the type of fan being installed and the requirements of the space.

While smaller 4" fans are common in basic installations, larger 5" and 6" fans are often more effective in bathrooms where higher levels of moisture are produced.

Larger duct sizes allow greater airflow, helping to remove moisture more quickly and improve overall ventilation performance.

Where space and installation conditions allow, we consider whether a larger fan and duct size would be beneficial, rather than defaulting to the smallest option.

Ducting and Installation - What Makes the Difference

The performance of an extractor fan depends just as much on how it is installed as the fan itself.

Ducting layout, materials, and routing all have a significant impact on how effectively moisture is removed from the space. Poor installation can reduce performance dramatically, even when a suitable fan has been selected.

Insulated ducting used to reduce condensation and maintain airflow, particularly in colder areas such as loft spaces.

Where possible, we aim to use insulated ducting - particularly on longer runs or where ducting passes through colder areas such as loft spaces.

This helps prevent condensation forming inside the duct, which can otherwise lead to moisture build-up, reduced airflow, and potential long-term issues.

This is especially important on vertical duct runs to roof terminals, where warm, moisture-laden air travels upwards and can cool quickly.

Without insulated ducting, condensation can form within the duct itself, reducing performance and, in some cases, allowing moisture to track back towards the fan.

These details are often overlooked but make a significant difference to long-term performance and reliability.

Our Approach to Extractor Fan Installation

As part of our installation process, we take a considered approach to the full ventilation system — not just the fan itself.

This typically includes:

- Use of insulated ducting where required to reduce condensation and maintain airflow
- Solid or rigid ducting through external walls for improved performance and durability
- Careful routing of ducting to minimise resistance and maximise extraction efficiency
- Consideration of noise levels, particularly where fans are installed close to living areas
- Selection of suitable fan types based on layout and performance requirements, not just availability

Common Mistakes

Common issues we see include:

- Fans installed that are too small for the space
- Poor ducting layouts reducing performance
- No consideration of noise levels
- Fans installed purely to meet minimum requirements
- Water build up within ductwork.

These issues often result in poor ventilation, even when a fan is present.

Summary

Extractor fans play an important role in maintaining a healthy and long-lasting bathroom environment.

By selecting the correct type of fan and ensuring it is installed properly, you can avoid common issues and ensure the space performs as intended.

As part of any bathroom installation, we assess what is required and recommend a solution based on the layout, usage, and long-term performance - not just the minimum requirement.

If you're planning a bathroom renovation, you may also find our **Kitchen & Bathroom Electrical Work page** helpful for understanding how the electrical installation fits into the overall project.