What is Forced Ventilation?

Forced ventilation refers to the mechanical movement of air using powered systems (e.g., fans, ductwork, or heat recovery units) to ensure adequate air exchange in a building. Unlike natural ventilation, which relies on passive airflow through windows or vents, forced ventilation provides controlled and consistent air circulation, improving indoor air quality (IAQ), moisture control, and thermal comfort.

Explanation & Application in UK Building Practices

Forced ventilation is commonly used in modern UK homes, retrofits, and extensions where airtightness (as per **Part L** and **Part F** of the Building Regulations) restricts natural airflow. Key applications include:

- **Extractor Fans** (e.g., in kitchens and bathrooms) to remove humidity and odours (required under **Approved Document F**).
- **Mechanical Ventilation with Heat Recovery (MVHR)** – Recovers heat from extracted air, improving energy efficiency (aligned with **Part L1B** for existing dwellings).
- **Positive Input Ventilation (PIV) Systems** – Introduces filtered air to reduce condensation (common in retrofit projects).

Related Terms

1. **Natural Ventilation** – Passive airflow through openings (e.g., trickle vents, windows).
2. **Airtightness** – Minimising uncontrolled air leakage (measured in **$m^3/(h \cdot m^2)$** under **Part L**).
3. **Heat Recovery Ventilation (HRV/ERV)** – Systems that retain heat/coolth from exhaust air.
4. **Part F (Ventilation)** – UK Building Regulations governing ventilation standards.
5. **Condensation Risk** – Addressed via forced ventilation to mitigate mould (referenced in **BS 5250:2021**).