Volatile Organic Compounds (VOCs)

Volatile Organic Compounds (VOCs) are a group of organic chemicals that can easily evaporate at room temperature. They are colourless and odourless gases released from a variety of household products, including paints, varnishes, cleaning supplies, and building materials.

In the context of house building and retrofitting, VOCs are significant because they can contribute to indoor air pollution and have potential health impacts on occupants. Understanding and managing VOC emissions is crucial for creating healthier living environments.

Sources of VOCs in Homes

- **Paints and Solvents:** Many paints, especially oil-based ones, release VOCs during application and drying. For instance, a newly painted room may have elevated VOC levels, which can lead to headaches and respiratory issues.
- **Adhesives and Sealants:** Products used in flooring and cabinetry often contain VOCs. For example, some laminate flooring adhesives can emit VOCs long after installation, affecting indoor air quality.

Health Implications

Prolonged exposure to VOCs can lead to various health problems, including eye, nose, and throat irritation, headaches, and in severe cases, damage to the liver or kidneys. For example, studies have shown that individuals living in homes with high VOC levels may experience increased asthma symptoms.

Regulatory Standards

The UK has established regulations to limit VOC emissions from products used in construction. The EU’s VOC Directive sets maximum allowable levels for various categories of products, encouraging manufacturers to develop low-VOC or VOC-free alternatives.

Mitigation Strategies

- **Low-VOC Products:** Builders and homeowners are encouraged to use low-VOC paints, adhesives, and finishes to minimise indoor air pollution. For instance, water-based paints typically have lower VOC content compared to solvent-based options.
- **Ventilation:** Ensuring adequate ventilation during and after the use of VOC-emitting products can help dilute and disperse these compounds. Incorporating mechanical ventilation systems in retrofitted homes can significantly improve air quality.