

HOUSEPLANSDIRECT TECHNICAL GUIDES

MASONRY CONSTRUCTION EXPLAINED

A complete guide to modern brick, block and cavity-wall construction



Modern masonry construction combines structure, weather protection, insulation and durable finishes.

NINE-PART PUBLICATION EDITION

Principles · Systems · Loads · Anatomy · Openings · Construction · Compliance · Defects · Inspection

Version 3.0 | 4 August 2026 | England

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About this guide

This guide explains masonry construction for low-rise housing in England, with emphasis on modern brick-and-block cavity walls. It is intended for clients, designers and site teams who need to understand materials, structural behaviour, moisture and thermal control, openings, junctions, workmanship and inspection. Project drawings, calculations, specifications, product instructions and Building Control requirements always take precedence.

SCOPE Masonry walls are project-specific. Units, mortar, ties, insulation, lintels, restraint, movement and fire details must follow approved design and current product information. Figures are explanatory and must not be scaled.

Part 1 – Introduction: What Is Masonry Construction?

Building with bonded brick, block or stone units laid in mortar

Masonry construction forms walls from individual units arranged in a bonded pattern and joined with mortar. Modern external walls commonly use two leaves separated by an insulated cavity: the outer leaf resists weather, wall ties connect the leaves and the inner leaf normally carries floors and roofs. Performance depends on the complete system, including foundations, DPCs, cavities, insulation, openings, restraint, finishes and workmanship.



Figure 1 — Typical modern masonry house with principal construction exposed.

1.1 Principal components

Component	Primary role
Masonry units	Provide structure, weathering, finish or combinations of these roles.
Mortar and bond	Join units, distribute load and create a coherent wall.
Cavity and insulation	Manage rain transfer and reduce heat loss.
Ties and restraint	Connect leaves and stabilise walls at floors, roofs and returns.
DPCs, trays and finishes	Control moisture and complete weathering and appearance.

1.2 Benefits and limitations

- Masonry provides durable, robust and familiar construction with good fire and acoustic performance.
- Brick, block, stone and render allow varied appearance and structural arrangements.
- Wet trades, weather, sequencing and tolerances can affect programme and quality.
- Cavity cleanliness, insulation continuity, movement and junction detailing require close control.

KEY PRINCIPLE The wall must be understood and designed as a complete system: structure, weathering, moisture, heat, air, fire, finishes and junctions cannot be separated.