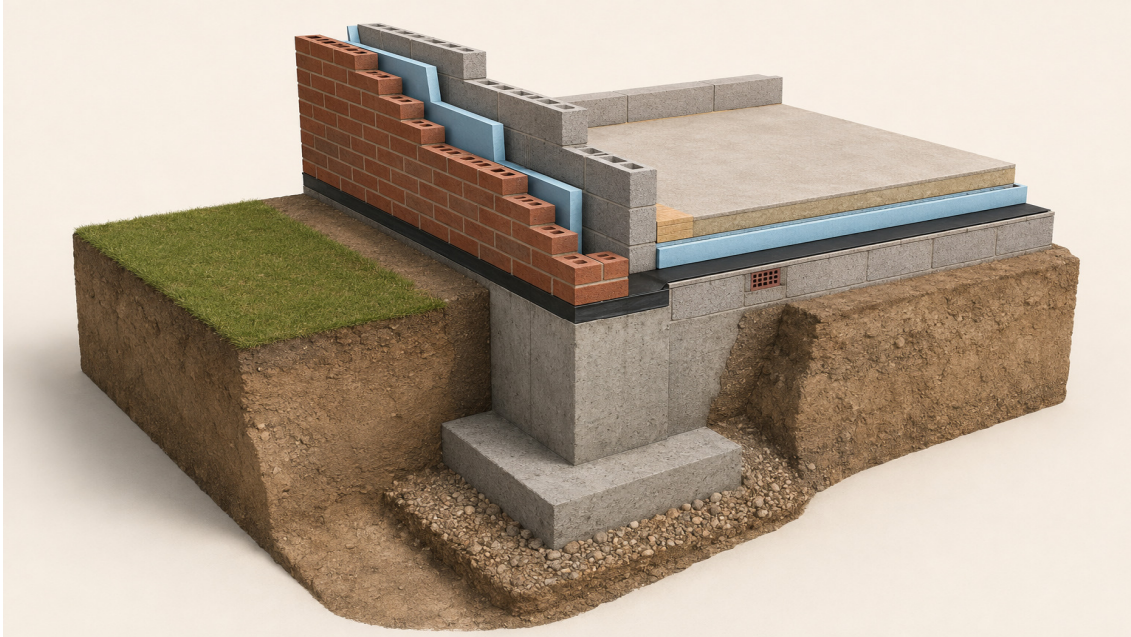


HOUSEPLANSDIRECT TECHNICAL GUIDES

FOUNDATION TYPES EXPLAINED

A complete guide to strip, trench-fill, raft and piled foundations



Typical masonry construction supported on a concrete strip foundation.

NINE-PART PUBLICATION EDITION

Principles · Ground · Types · Load paths · Construction · Integration · Compliance · Inspection

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About this guide

This guide explains the principal foundation systems used for low-rise housing in England. It is intended for clients, designers and site teams who need to understand ground conditions, structural load paths, selection, construction, interfaces and inspection. A foundation is project-specific: the site investigation, structural design, Building Control requirements and specialist instructions always take precedence.

SCOPE Foundation depths, widths, reinforcement and pile arrangements are project-specific. Ground information, structural calculations, approved drawings, specialist instructions and Building Control decisions take precedence. Figures are explanatory and must not be scaled.

Part 1 – Introduction: What Do Foundations Do?

Supporting the building safely on suitable ground

Foundations spread and transfer building loads into the ground without unacceptable settlement, movement or instability. They must reach suitable bearing material, remain durable in the ground environment and coordinate with walls, floors, drains, services, damp protection and any ground-gas measures. The correct arrangement depends on both the building and the site; depth alone does not make a foundation adequate.

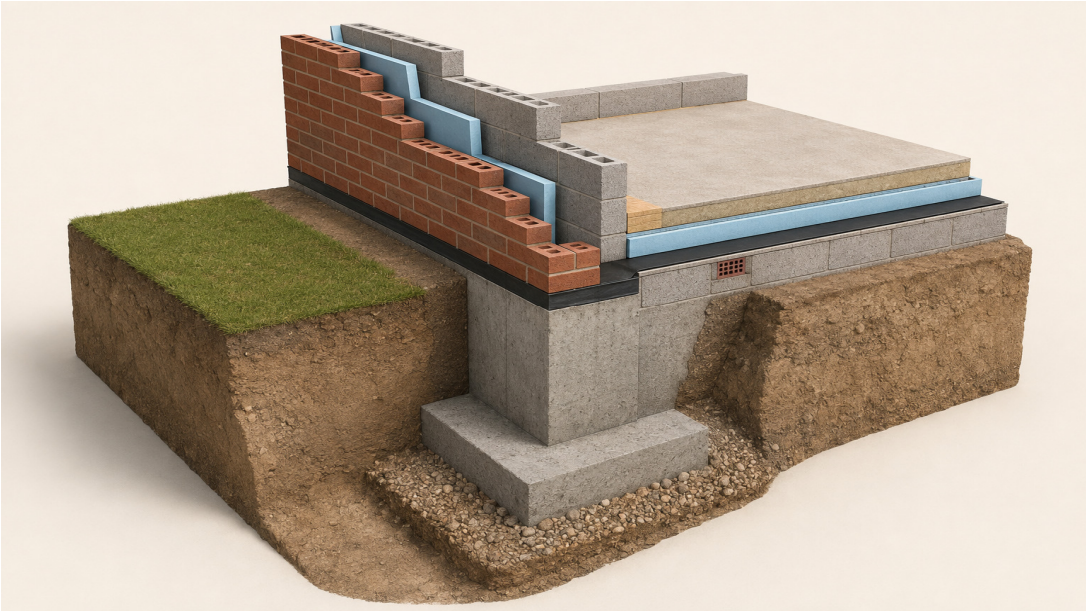


Figure 1 – Typical masonry construction supported on a concrete strip foundation.

1.1 Principal components

Component	Purpose
Supporting ground	Provides the resistance and stiffness assumed by the design.
Foundation concrete	Spreads or transfers structural loads into suitable ground.
Reinforcement / piles	Provides designed strength, stiffness or deep load transfer where required.
Walls and ground beams	Collect building loads and deliver them to the foundation system.
DPC, DPM and floor edge	Coordinate moisture, gas, thermal and airtightness continuity above.

1.2 Benefits and limitations

- Shallow concrete foundations are economical where competent ground is reasonably close to the surface.
- Trench-fill construction can reduce below-ground masonry and shorten the programme.
- Rafts and piles provide alternatives where loads, fill, variability or movement risk make shallow strips unsuitable.
- Every system still requires verified ground, coordinated load paths, competent construction and inspection before concealment.

KEY PRINCIPLE Select foundations from verified ground conditions and calculated building loads. Extra depth or concrete is not a substitute for a coherent design.