

STRUCTURAL DESIGN

An Overview



Structural design is the methodical investigation of the stability, strength and rigidity of structures. The basic objective in structural analysis and design is to produce a structure capable of resisting all applied loads without failure during its design life.

Basis of structural design

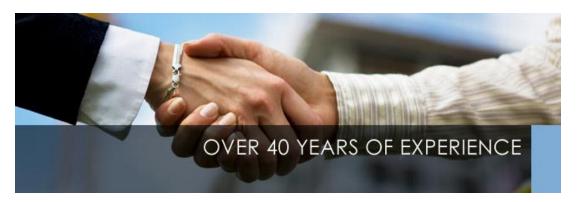
Structural analysis and design calculations are carried out in accordance with British and European Standards and Codes of Practice.

Typically these would be:

British Standards

BS6399	Loadings for Buildings
BS5950	Structural use of steelwork in building
BS8110	Structural use of concrete
BS5628	Code of practice for the use of masonry
BS5268	Structural use of timber
BS8002	Earth retaining structures
BS8004	Foundations





European Standards

BS EN1991 Actions on structures

BS EN1992 Design of concrete structures

BS EN1993 Design of steel structures

BS EN1994 Design of composite steel and concrete structures

BS EN1995 Design of timber structures

BS EN1996 Design of masonry structures

BS EN1997 Geotechnical design

What is generally included in our designs

Structural calculations for the items agreed in our quotation or confirmation.

A layout drawing showing the general location of any beams, padstones, piers, columns and foundations.

The section size, dimensions and depth of structural members.

Details of beam to beam connections, beam to column connections where required or the loads at steel connections to allow the fabricator to design the connections.

We will consider elements of structure covered by building regulations Approved Document A – Structure and included within the services listed on our quotation.

We produce details on CAD and require a copy of the architectural drawings in dwg or dxf format for us to overlay our information.

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What is generally excluded

Setting out dimensions and lengths of members for fabrication or manufacture.

Dealing with party wall matters or agreeing position of party walls or boundaries.

Design of staircase, handrails and barriers unless specifically included in the scope of work agreed.

Design of precast concrete, roof trusses, glass structures or items of specialist manufacture.

Detailing and design of piled or reinforced foundations. If no site specific ground investigation is provided then an assumed bearing pressure will be used and will need to be confirmed when construction starts on site. Dimensional survey of the site or existing building. Where architectural

drawings or other information is provided dimensions will be taken from them or scaled from.

Temporary works design. The design of temporary supports to allow the permanent works to be installed is normally carried out by the contractor. We are able to carry this out is requested and agreed separately to the design of the permanent works.

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