# 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

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| 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 |


**Anderson Consulting Engineers** is a trading name of Anderson Engineering (UK) Ltd
One Kingdom Street, Paddington, London, W2 6BD Tel: 0203 755 5084
Mottram House, 43 Greek Street, Stockport, Cheshire, SK3 8AX Tel: 0161 406 2033


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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