



Certification Performance Criteria Guidance

B4.4 Earth Retaining Structures

Revision A

Performance Criteria

Certifiers must satisfy themselves that adequate details for any earth retaining structures have been prepared and that sufficient design calculations, which take account of the findings of the ground investigation report, have been undertaken to demonstrate the adequacy of the design.

Background

Retaining structures may occur within the footprint of the building but also may be required to retain slopes generally within the boundaries of the development comprising the warrant application.

Retaining structures may also provide support to existing buildings in the vicinity of the proposed works and it is a requirement of Standard 1.1 that the work being undertaken does not impair any part of another building. Certifiers should therefore satisfy themselves that adequate enquiry has been made regarding the effect of the construction of any retaining structures on existing buildings.

Guidance

Certification will embrace the performance of the retaining structure and also the overall stability of any slope against which the structure is located.

Loading parameters must reflect the support conditions (propped or cantilevered) and any surcharges.

Certifiers must see that calculations have been prepared in accordance with an accepted methodology, have been checked by a suitably experienced person and that the design output has been properly reflected in the warrant application drawings.

BS 8002:1994 Code of Practice for earth retaining structures was withdrawn in March 2010 and although it is still listed as an approved document within Appendix 1 of the Technical Handbook, care should be exercised when using withdrawn standards.

Eurocode 7 – BS EN 1997-1:2004 and National Annex EN1997-1 provide guidance on the geotechnical aspects of the design of buildings including retaining structures.

Further guidance can be found in the 'Manual for the geotechnical design of structures to Eurocode 7' published by the Institution of Structural Engineers May 2013.

The CIRIA publication 'C516 Modular Gravity Retaining Walls' provides useful guidance for the design and specification of low height proprietary wall types such as Gabion and Crib walls.

Examples of Major Non-conformances

Absence of or grossly inadequate evidence of the Certifier's review of the design for any earth retaining structures.

The design of any earth retaining structures clearly does not meet the requirements of Standard 1.1.

Absence of or grossly inadequate suitably checked structural calculations and/or details.

Calculations and/or details are grossly inadequate in relation to the size/complexity of the project.

Failure to document why there are discrepancies between the recommendations in the ground investigation report for the design of the earth retaining structures and the parameters used in the design.

Examples of Improvement Issues

Insufficient evidence of the Certifier's review of the design for any earth retaining structures.

Deficiencies in the building warrant plans e.g. failure to identify layout, level changes, dimensions, construction and typical reinforcement details.

Inadequate or insufficient calculations.

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