



Certification Performance Criteria Guidance

B4.6 Superstructure – Principal Loadbearing Elements

Performance Criteria

Certifiers shall satisfy themselves that adequate details have been prepared for all principal load-bearing structural elements, including structural frames, beams, columns walls, floors, roofs, and that sufficient calculations have been prepared in accordance with an acceptable methodology to demonstrate the adequacy of the design.

Background

In order to be safe, a building should be capable of resisting all loads acting on it as a result of its intended use and geographical location. To achieve this, the structure of a building should be designed with appropriate margins of safety.

The principal load bearing elements are those structural elements which ensure that all applied loadings are transmitted through the structure down to their foundations. Such elements will include beams, columns, walls and structural elements within walls, floors, roofs, etc.

Guidance

Calculations for the principal loadbearing elements should be carried out in accordance with the Codes and Standards listed in 'Technical Guidance Document Part 1: Structure'. Where design methodologies have been used which are not based on these then Certifiers must be satisfied that the alternative approach still meets the standard required by the Bye-laws and clearly demonstrate how they have satisfied themselves in this regard.

All principal loadbearing elements must be clearly shown and described on the plans and should be consistent with the design calculations.

The output from structural calculations must be properly reflected in the drawings and details submitted to the PED in support of the permit application.

The level of checking undertaken will depend on a wide range of factors which include the complexity of the design and the risk associated with structural failure. For more detailed guidance refer to SER Guidance Note 7, 'Guidelines for Checking the Structural Design of

Buildings’

Examples of Major Non-conformances

The design of any of the principal loadbearing elements clearly does not meet the Requirements 1.1, 1.2 and 1.3.

Absence of suitably checked structural calculations, load/span tables, test certification or other justification for the design of any primary loadbearing element, or for any other important elements of structure.

Absence of suitably checked drawings/details.

Grossly inadequate details for superstructure elements on the drawings

Absence of evidence demonstrating that the Certifier made adequate enquiry regarding the design any element and/or the experience of those undertaking the design where this was prepared by an external specialist/third party.

Examples of Improvement Issues

Inadequate or insufficient details on the plans

Inadequate or insufficient structural calculations, load/span tables, test certification or other justification for the design of any primary loadbearing element of structure.

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