

## Practice Advisory 2: Pay attention to the basics – structural concepts and load paths

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You need to make sure you provide enough information about the structural concepts and load paths of your design in your building consent application. We have provided guidance to help.

This information was confirmed as current in December 2016.

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1st edition

**Of interest to** Building consent authorities, Builders, Designers, Engineers

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### Issues of concern

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Designs carried out and information supplied for Building Consent should show sufficient consideration of the basic structural concepts and load paths.

Inadequately defined structural concepts and poor selection of load paths can lead to the as-built structure performing below expectations.

### Background

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Sound structural concepts are recognised as critical to the performance of structures, particularly in earthquakes. Reports such as the Hunn Report and our report on the Scarry letter, indicated that some designs and drawings did not adequately demonstrate the designer's intentions in a clear and concise manner that enabled accurate checking at building consent stage.

#### Don't

Don't assume the structural concepts are always sound and well defined, especially in unique or complicated structures.

#### Do

Do insist that a brief Design Features Report (DFR) (such as, a clear statement of structural concepts, load paths and loading assumptions) is included at the start of all design calculations.

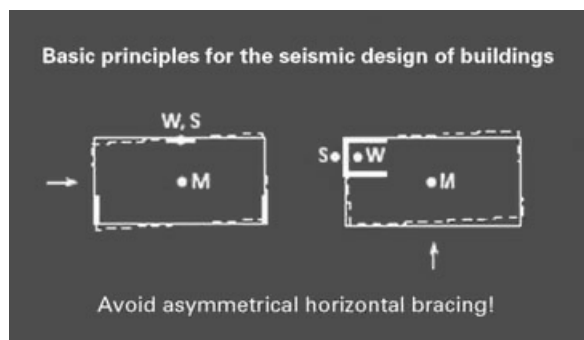
Do have an independent check done by an experienced designer on the basic structural concepts at concept design stage, developed design stage and on completion of construction documentation.

Do submit a formal Design Features Report summarising all key design parameters and describing the structural design concept with all building consent applications.



**Figure 1:** Example of building with poor structural layout of bracing elements

**Source:** Seismic Conceptual Design of Buildings, Bachmann H.



**Figure 2:** Plan of building with poor conceptual layout for resisting lateral loads

All guidance related to B1 Structure (<https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/>)

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