

Practice Note: Limit States Design - Foundations

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It has come to the attention of the Engineers Geoscientists Manitoba's Investigation Committee that some members have attempted to design foundations for buildings using a methodology that falls below the acceptable standard of professional engineering. The methodology in question relies on analyzing the prescriptive aspects of the Manitoba Building Code (MBC) found in section 9.15.2.5, which includes a prescriptive description of piles acceptable for single-storey attached garages. The methodology, which the IC does not condone, involves the calculation and prediction of soil capacities based on reverse-engineering these prescriptive details.

All of Engineers Geoscientists Manitoba's practitioners must employ Limit States Design (LSD) methodology for the design of foundations of buildings that fall under the MBC. The prescriptive details illustrated in the figures presented in 9.15.2.5 are only appropriate for the specific use described in each detail. Therefore, the design of piles other than those for single-storey attached garages must include an appropriate establishment of soil capacities for the site in question.

Some Authorities Having Jurisdiction (AHJ) may have established soil capacity values that can be used for ULS and SLS foundation designs for specific Part 9 structures in their jurisdiction. These AHJ's may be consulted in the absence of site specific geotechnical information.

Engineers Geoscientists Manitoba's Investigation Committee wishes to further provide direction regarding sentence 9.4.1.1.b of the MBC. This sentence allows for "structural members and their connections" to "be designed according to good engineering practice such as that provided in CWC 2009, Engineering Guide for Wood Frame Construction". It is not 'good engineering practice' to rely on this sentence as justification to use Working Stress Design methodology for the design of foundations.

The Investigation Committee encourages all of Engineers Geoscientists Manitoba's practitioners to embrace Limit States Design as the only acceptable methodology for the engineered design of all building structural elements (including foundations).