

Geology of the Manitoba Legislative Building

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GAC–MAC 2013: FIELD GUIDE SUMMARY

Geology of the Manitoba Legislative Building

GAC–MAC Winnipeg 2013,
syn-meeting field trip

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FIELD TRIP OBJECTIVES

The Manitoba Legislative Building (Fig. 1) is a grand neoclassical structure located near the banks of the Assiniboine River in central Winnipeg. It rests on glacial Lake Agassiz clays, but its mass is supported by caissons that extend down to bedrock. Brick bearing walls are supported by a steel structure that rests on the caissons. Construction started in 1913 but was hampered by World War I, financial problems and problems with defective caissons. The Legislative Building was officially opened in 1920, and provides a unique case history into the geologic controls on foundation design.

Dimension stones from selected localities across North America and Europe decorate the bearing walls, floors and stairways of the Legislative Building. The building offers some of the best exposures of Manitoba Ordovician Tyndall Stone including classic burrow mottling and microfossils. Early Paleozoic Appalachian marbles, from Tennessee to Quebec, are represented on hallway floors, steps, risers and landings. Botticino marble



Figure 1. The Manitoba Legislative Building viewed from the north.



Figure 2. The Grand Staircase of Botticino marble is surrounded by walls and pedestals of Tyndall Stone. Red and black marbles make up the floor.

from the northern Italy is well exposed on the grand staircase (Fig. 2), and an Ordovician black marble adorns the walls of the legislative chamber. The steps to the entranceways are underlain by Neoproterozoic Butler granite from northwestern Ontario (Fig. 3).

This trip will focus on the unique geological characteristics of the several types of dimension stone, the processes recorded in their formation, and the paleoenvironmental conditions under which the rocks formed. We will also discuss the history of the building, its construction and foundation conditions.



Figure 3. Statuary of Bedford limestone sits on a pedestal of Tyndall Stone at the east entranceway. The stairs are made of Butler granite.

OTHER INFORMATION

This half-day field trip is designed for the non-specialist. Emphasis will be placed on the engineering geology of the building and the geologic processes recorded in the different types of dimension stone. The Legislative Building is a short distance from the Winnipeg Convention Centre where the conference is being held. We will depart from the main entrance of the Convention Centre and walk to the Legislative Building. Most of the field trip will be touring inside the building, but we will spend some time outside. The time spent outside will be dependent on weather.