JIBC

Research Brief

Principal Researcher(s)
Albert Meesters

Advisor
Lee Patterson

Instructor
Beth Larcombe

Research Field
Earthquakes and Museums

Program
Bachelor Emergency Security Management Studies

Course
18 WI BESMS Capstone

Funding Sources

N/A: Course-based Project.

Major Earthquakes and the Renovation and Expansion of the Royal BC Museum

Earthquakes are one of the leading contributors to damage and loss for museums and archives around the world, and while the frequency and risk for earthquakes is not the same everywhere, potential losses due to breakage, loss of power to climate regulated exhibits, archive loss, and injury or loss of human lives are of crucial concern (Erturk, 2012).

The purpose of this research is to determine how Royal BC Museum staff, in Victoria, can plan for, prepare, mitigate and respond to the threat of a major seismic eruption as they prepare to build two new towers on museum property. To conduct this research, a critical appraisal of literature, thesis papers, docs, reports, news reports, and policies was conducted.

Prior to designing and building the future Royal BC Museum towers, a site assessment for seismic stability will be required that should include: (a) distance from the rupture zone, (b) magnitude and depth of the earthquake, and (c) the soil conditions of the building site (SEABC, 2017).

Erturk (2012) asserts that Museum curators and specialists who have received some formal emergency management training, are more effective in establishing how given types of objects, assemblages of objects and exhibition furnishings and fixtures, as well as collections held in storage will respond to earthquake forces. This combination of knowledge and expertise allows for better planning and mitigation efforts for prevention of exhibit damage or loss.

Prior to expanding, the RBC Museum must review and understand how shallow thrust earthquakes could impact building designs and exhibit displays, so that these risks can be reduced through proper planning and mitigation measures. Additionally, museum curators and specialists should receive some formal emergency management training that allows them to utilize their specific knowledge and expertise in areas that can help plan for and prevent exhibit damage, as well as response, recovery and removal of artifacts in conjunction with official emergency management response teams, after a major event.

JIBC

Research Brief

Structured Abstract

Introduction: The Royal BC Museum could face considerable consequences in the event of any severe seismic activity due to its location above the Devil's Mountain Fault. The research problem this paper addresses is, "In light of this recent earthquake data, how can museum staff, designers and planners utilize research from other areas that suffer similar types of seismic activity, in order to plan for, prepare, mitigate and respond to this threat as they move forward to build the new towers?"

Methods: To conduct this research, a critical appraisal of literature, thesis papers, docs, reports, news reports, and policies was conducted.

Results/Findings: The research shows that the future RBC Museum towers site will require a seismic assessment that factors: (a) distance from the rupture zone, (b) magnitude and depth of the earthquake, and (c) the soil conditions of the building site (SEABC, 2017).It was also shown that museum curators and specialists can become more effective by receiving some formal emergency management training that compliments their knowledge of how given types of objects, exhibits and fixtures, as well as collections held in storage will respond to earthquake forces (Erturk, 2012).

Discussion: These findings are important because they show that by reviewing and understanding the threat posed by Devil's Mountain Fault and how shallow thrust earthquakes could impact buildings and exhibits, RBC museum staff can more effectively reduce risks through proper planning and mitigation measures; and, that lead museum staff can be even more effective by receiving some formal emergency management training.

Practical Applications: The discovery of this new fault will require RBC Museum staff to delay expansion of the new towers so as to further study the possible impacts a major seismic event could have on the buildings, people and artifacts therein. This will give staff and planners time to implement planning and mitigation strategies that will greatly reduce the risks.

References:

Erturk, N. (2004). Earthquake preparedness and cultural heritage losses: the case study of Istanbul museums. In *Proceedings from the International Symposium of Cultural Heritage Disaster Preparedness and Response* (pp. 243-48). Retrieved from http://archives.icom.museum/disaster_preparedness_book/country/erturk.pdf

Structural Engineers Association of BC. (2017). British Columbia Earthquake Fact Sheet. (pp.1-12). Retrieved from https://www.egbc.ca/getmedia/4278c069-0374-4cc2-9e73-2b454a0f978a/SEABC-Eathquake-Fact-Sheet.pdf.aspx