

Construction safety theories and human factors theory regarding quebec bridge

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Kranakis (2004) explains that the Quebec bridge had a world record for the longest cantilever and bridge span. Such a mega structure being built for the first time has to experience some problems as no one had the experience at that time to undertake such a project. The design problems and stress overloading that resulted in the failure of the bridge were part of the management faults since through proper design; the situation could have been rectified. The collapse could have also been caused by faults during construction as a result of workers overlooking some important issues regarding construction safety.

There were some concerns about the safety of the bridge before the project started. The company had a lot of financial constraints before the project started. Kranakis (2004) argues that the government was not willing to part with large sums of money at that time and hence the safety issues became overlooked due to an exorbitant budget. The company, however, went ahead with the construction despite its financial conditions that could not have allowed the construction of the project. These were all calculated human errors that led to the collapse of the final project.

Systems Theory

According to Cleveland State University (n, d), system theory is aimed at controlling and preventing the hazards. This is done through identifying the interactions between components rather than the failures of the components which include the nontechnical elements of the system.

In the case of the Quebec bridge collapse, the elements making up the bridge were not in harmony to create safety. The environmental conditions might have affected the bridge leading to swinging beyond the stress limits provided. This might have been caused by poor welding or jointing between the various parts making the bridge. The bridge design might not have been designed to carry the total weight of the bridge or the supporting beams used to strengthen and support the bridge may have failed due to unforeseen circumstances. It could also have happened that part of the ground that the bridge was elected yielded due to weight leading to the collapse.

Kranakis (2004) explains that the design drawings and the plans of the bridge were reviewed by a single engineer before the project was started.