

Knowledge Transfer - Haiti

Mark Stephen Taylor

University of Illinois, Urbana-Champaign

Shengxi Wu

University of Illinois, Urbana-Champaign

Between June 2010 and August 2013 a number of interconnected research investigations were undertaken in Léogâne, the town at the epicenter of the magnitude 7.0 Haitian Earthquake. The Kay Fanm Yo (Women's House) is one outcome of those investigations.

The Kay Fanm Yo is a 1,200 sq/ft midwifery training center. It was developed as a prototype for replication in the rural areas of Haiti where maternity healthcare is acutely lacking. In Léogâne the building was designed to function both as a classroom and as a maternity center, where expectant mothers could be accommodated through the later stages of pregnancy, childbirth, and recovery. The critical aspect of the design was it could be built to satisfy the requirements of a Seismic Category D rating in a coastal location susceptible to 3-second wind gusts of 135 mph.

The building was constructed in part to understand where inadequacies are likely to occur during construction in Haiti, but also to identify what steps can be taken to avoid potential problems. During the process of design and construction issues of material supply, craft proficiency, and cost were all encountered. Constructing a single building cannot change a construction culture. However, transferring knowledge should be a key component of any recovery process that aims to establish a more resilient built environment following a natural disaster.

The poster illustrates the context of the investigation, and the required steps to be taken to ensure a building can withstand the natural forces that are present in Haiti.

Knowledge Transfer

Context:

The Haitian Earthquake of January 2010 highlighted a desperate need for the transfer of construction and architectural knowledge to minimize the impact of any future natural disaster. Haiti is an island nation that faces two major sources of environmental disruption: seasonal hurricanes and seismic events. Severe hurricanes occur on the frequency of 1 or 2 per year. Severe earthquakes occur once every 50-200 years. Six research trips were taken over the course of a two-year period following the 2010 earthquake to study the construction needs in Haiti.

The Nature of the Investigations:

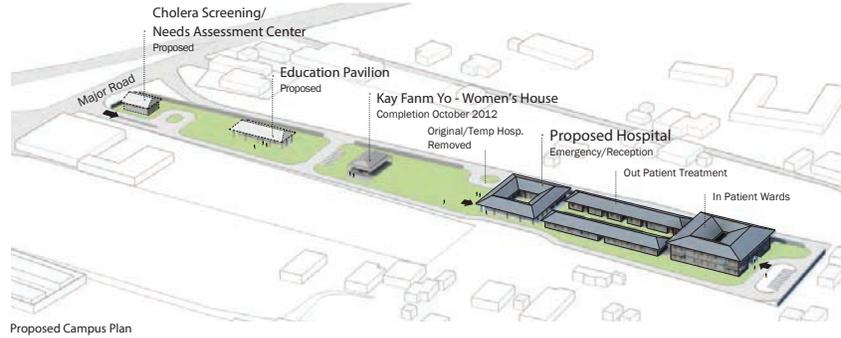
Between June 2010 and May 2012 four interconnected research investigations were undertaken in Léogâne: the town at the epicenter of the magnitude 7.0 Haitian earthquake. The initial visits established links with stakeholders invested in constructing safer buildings. Initial site visits to schools, hospitals and government buildings, constructed before 2010 established that key municipal structures, which should have served as places of refuge after the earthquake, fared no better than residential buildings built without professional guidance. Subsequent visits established collaborative relationships with local engineers, suppliers and construction crews to identify shortfalls in Haiti's building delivery supply chain. Establishing local links was critical to ensure the outcomes of collaborative efforts would facilitate long-term change in the region.



The Learning Outcomes:

Since the earthquake knowledge transfer has taken place at multiple levels:

Graduate architectural students have applied their theoretical knowledge to a critical real world problem. They exercised judgment in the assessment of historic drawings and data collected in Haiti, making recommendations, which will potentially save tens of thousands of dollars and hundreds of lives. Undergraduate students have studied the Kay Fann Yo construction methods as an introduction to building technology, seismic design, passive cooling design, and code compliance. Haitian engineers were introduced to the principles of seismic design, something that had not previously been included in their formal education. Local Haitian construction crews were introduced to critical improvements in building methods and approaches.



CAMEJO HOSPITAL
LÉOGÂNE, HAITI

