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Catholic Churches in the Visayas and the Earthquake of 15 October 2013

Photo gallery: Reynaldo Lita

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Photo Gallery

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Catholic Churches in the Visayas and the Earthquake of 15 October 2013

On 15 October 2013 an earthquake of 7.2 magnitude struck the Central Visayas. It caused huge devastations, reducing to rubble some centuries-old Catholic churches in Bohol. Past architectural interventions enabled some edifices to survive the quake, but inappropriate additions made quite recently rendered other structures vulnerable to destruction. Partially damaged structures have been undergoing restoration by the National Historical Commission of the Philippines (NHCP). The NHCP's permission to publish these photographs is gratefully acknowledged.

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Our Lady of Light Church façade, 12 Dec. 2010; photo courtesy of the NHCP

Ruins of Our Lady of Light Church, 18 Oct. 2013; photo courtesy of the NHCP

Our Lady of Light Church, Loon, Bohol

Cultural properties are most vulnerable during earthquakes. In the history of architecture and its technological achievements, old construction methodologies formed part of the evolution of design and styles. Builders developed construction technologies through time to correct a structure and enhance its strength. Seismic considerations established the strength of a structure. Building technologies were constantly changing to create earthquake-responsive buildings. The Our Lady of Light Church in Loon, Bohol, built in 1755, completely collapsed after the 7.2 magnitude earthquake that hit the Central Visayas on 15 October 2013. The stone church, declared a National Historical Landmark and National Cultural Treasure, was the largest and most symmetrical religious edifice in Bohol.

Santa Cruz Church façade, 13 Oct. 2010; photo courtesy of the NHCP

Ruins of the Santa Cruz Church, 18 Oct. 2013; photo courtesy of the NHCP

Santa Cruz Church, Maribojoc, Bohol

Churches in the Visayas, particularly in Bohol and Cebu, were made of corals. Rene Javellana (1991) described the corals, or *piedra de Visayas*, as handsome building materials because of their unusual texture. It could be as hard as marble or as soft as limestone. Corals were quarried during low tide and hewn either on the shore or near the building site. The structural capabilities of corals, which are equivalent to 22 megapascals or 3,191 psi, are still appropriate by contemporary standards. However, given the age and degree of maintenance work done in the church, corals become weak. Months before the earthquake, the Santa Cruz Church in the town of Maribojoc, built from 1852 to 1872, had been up for repair work since the coral stones at the bell tower detached from its rubble core. Unfortunately, the entire structure collapsed during the earthquake.

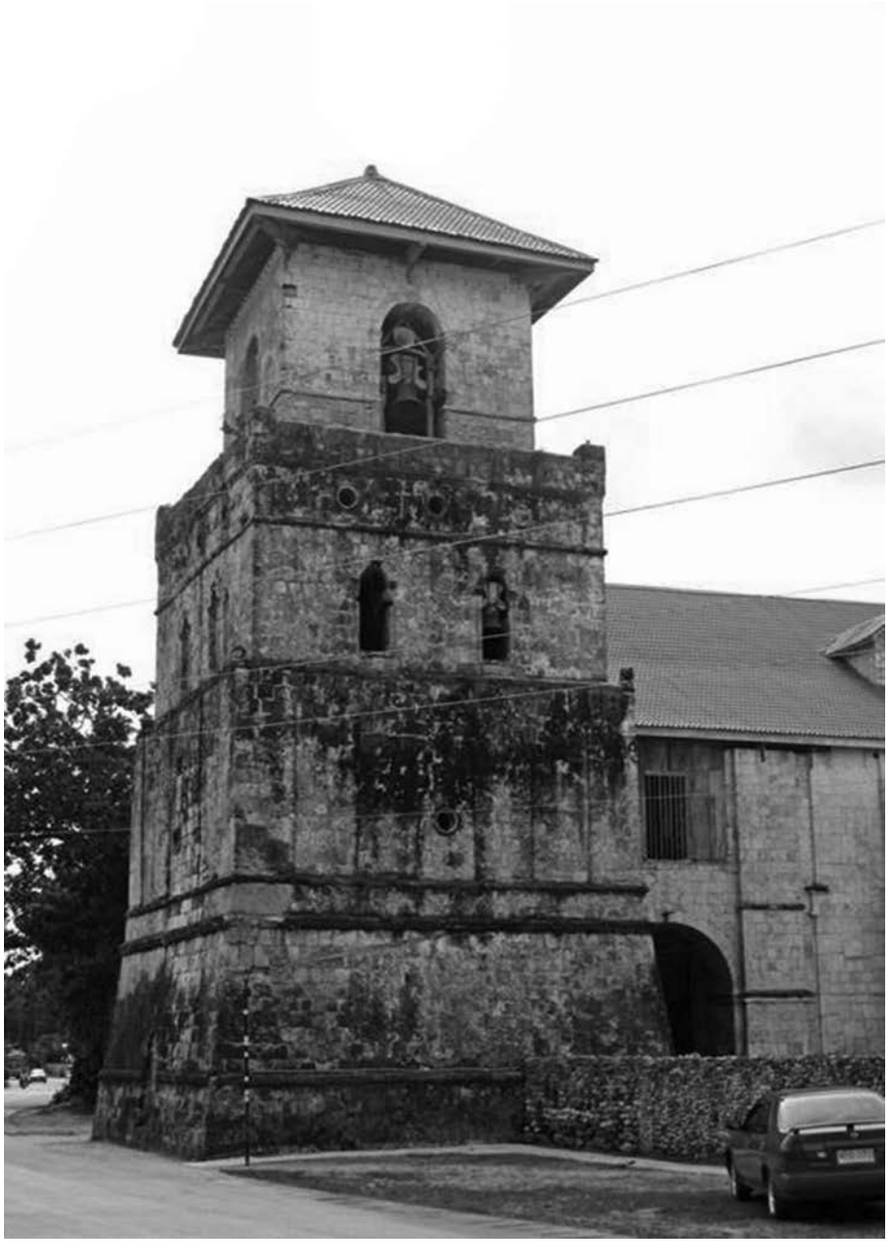
Immaculate Conception Church and bell tower, 12 Sept. 2007; photo courtesy of the NHCP

On-going restoration work on Immaculate Conception Church, 9 Sept. 2016; photo courtesy of the NHCP

Ruins of the Immaculate Conception Church, 17 Oct. 2013; photo courtesy of the NHCP

Immaculate Conception Church, Baclayon, Bohol

The concept of separate bell towers, use of thick masonry walls, and addition of massive buttresses were among the technological breakthroughs in the construction of religious edifices in the Philippines in the eighteenth and nineteenth centuries. Stone churches were constructed quakeproof, with thickened walls and propped with outsized buttresses by the turn of the seventeenth century. Walls were maintained through lime plasterwork of masonry walls. Times have changed, and modern ways of seismic treatments in building technology have been developed. The Immaculate Conception Church in Baclayon, built in the late 1700s, has a wooden truss system that has been maintained and preserved. Experts believe these structural supports have helped save the main church, owing to its tensile properties, from the wrath of the earthquake. However, the portico façade, added in 1875 made of combined corals and concrete, collapsed.



Immaculate Concepcion Church bell tower, 12 Sept. 2007; photo courtesy of the NHCP

Bell tower in ruins, 18 Oct. 2013; photo courtesy of the NHCP

Restoration of the bell tower, 29 Feb. 2016; photo courtesy of the NHCP

Bell Tower, Immaculate Conception Church, Baclayon, Bohol

The bell tower of Baclayon was originally detached from the church building. Erected in 1777, the tower served as a military structure or a watchtower to protect the growing parish. The portico façade, added in 1875, connected the tower to the building. Hence, structural experts inferred that the connection between the two structures may have affected their seismic behavior during the earthquake. Claudia Cancino (2011), in her damage assessment report of historic earthen buildings after the 2007 earthquake in Pisco, Peru, recommended the need to develop less invasive alternative retrofitting techniques by adapting traditional and historical methods and materials in order to increase safety in existing earthen buildings. Simple interventions to connect wall to roof may have minimized the damage to the Cathedral of Ica, Peru.

St. John the Apostle Church, 7 Sept. 2007; photo courtesy of the NHCP

St. John the Apostle Church undergoing restoration, 29 Feb. 2016; photo courtesy of the NHCP

St. John the Apostle Church, 15 May 2014; photo courtesy of the NHCP

St. John the Apostle Church, Inabanga, Bohol

The St. John the Apostle Church in Inabanga, Bohol, has evolved from a stone masonry structure to a semiconcrete building through time. The Gothic-inspired façade was spared by the local earthquake, but the masonry walls collapsed. The Nara Document on Authenticity drafted in 1994 (UNESCO World Heritage Centre 1994) states that authenticity does not require a significant place to be frozen as it is. The outstanding values of a place may be sustained dynamically so long as its stories remain credible and truthful. The community of Inabanga wanted to reconstruct the church and add more windows at the side walls. The parish is committed to preserve the remnants of the past and also improve the church's appearance.

Holy Trinity Church, 14 Aug. 2008; photo courtesy of the NHCP

Makeshift church, 12 Apr. 2014; photo courtesy of the NHCP

Holy Trinity Church, 18 Oct. 2013; photo courtesy of the NHCP

Holy Trinity Church, Loay, Bohol

Attendance at church ceremonies plays a huge impact on the culture of the community. It is imperative to search deeper into the pulse of the community on matters concerning heritage and preservation. Congregations are living entities that should continue regardless of place. The parishioners of Holy Trinity Church in the hilltop town center of Loay, Bohol, have built a makeshift church at the church plaza to address the needs of the parish while the National Historical Commission of the Philippines (NHCP) and the community are rebuilding the damaged house of worship.

Santo Niño de Cebú Basilica before the 2013 earthquake; photo courtesy of the NHCP

Facade of the Santo Niño de Cebú Basilica with the damaged belfry, 17 Oct. 2013; photo courtesy of the NHCP

Santo Niño de Cebú Basilica with the restored belfry, 7 June 2016; photo courtesy of the NHCP

Belfry, Santo Niño de Cebú Basilica, Cebu

Heritage buildings are for the living. The continued use and development of old buildings is fundamentally sustainable. As such, the postdisaster rebuilding process should consider the overall lifetime of heritage structures. Cramer and Breitling (2007) deem that construction technology has aged but has proven its durability. In consideration of potential disasters, building elements and materials that were not durable have been replaced. The repairs and replacement of materials are intended to maximize the building's overall life span.

The concrete belfry of the Santo Niño de Cebú Basilica fell down as a result of the 2013 earthquake. Experts concluded that the collapse happened owing to the heavy weight of the reinforced concrete structure previously added to the church structure. To restore it, the NHCP used the same old methodology and architectural design. However, lightweight concrete was used to match the strength of the old masonry walls. Coral stones were used as architectural cladding. Thus, mistakes on construction methodologies in the past should never be repeated. Adaptable new technologies enable us to take full advantage of the use of heritage buildings.

Note

This photo gallery was originally presented at the conference, "Disasters in History: The Philippines in Comparative Perspective," held at the Ateneo de Manila University, Quezon City, and organized by this journal, the Ateneo's Department of History, and Kyoto University's Center for Southeast Asian Studies, 24–25 Oct. 2014.

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