



## The Forces of Tsunami

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**ON** 26 December 2004, an earthquake measuring 9.2 on the Richter scale, whose hypocenter was only a few hundred kilometres away from Banda Aceh, resulted in one of the most severe tsunamis in the history of mankind which devastated the lives of hundreds of thousands of people in 11 countries from Southeast Asia to as far as eastern Africa.

Banda Aceh is located at the northern tip of Sumatra, the largest island in the archipelago of Indonesia. It is the biggest town and administrative centre of Aceh, whose people have been fighting for independence from the central government of Indonesia since 1976. The tsunami destroyed a large part of Banda Aceh and its population dropped significantly.

The international community rushed in to help rebuild Banda Aceh. The central government of Indonesia also poured in large amounts of much needed funds and created plenty of goodwill in the process. This resulted in a peace treaty being signed on 15 August 2005 and, for the first time in decades, Aceh opened its door to international tourists.

I visited Banda Aceh with my regular diving buddies. We were on our way to Pulau Weh to do some scuba diving. According to our guide, the population of Banda Aceh has since recovered because of the influx of people from the surrounding areas to seek employment. Most of the buildings in town were new. At that time, a tsunami museum was near completion.

Among other things, we also visited Masjid Baidulrahim, the mosque that miraculously remained standing after the tsunami had flattened all other buildings in the area. We also visited a mass cemetery, the permanent home of some 3000 unfortunate people who lost their lives during the disaster.

What shocked me most, however, were a large steel pontoon and a wooden boat. Both were surrounded by houses in residential areas. I estimated the pontoon to



measure about 100m long by 30m wide and weigh at least a few thousand tonnes.

It had been pushed by the tsunami's tremendous wave to its present position, about 3km from the sea. The wooden boat, on the other hand, was pushed even further inland and landed on the roof of a house. It has now been given permanent supports and has been turned into a tourist attraction.

Both the pontoon and the wooden boat are grim reminders to mortals like you and me that the forces of nature can be unfathomable and deserve our most profound respect. Civil engineering is about the science and art of harnessing the forces of nature for the benefit of mankind. Yet, do we civil engineers sincerely believe we can harness the forces of nature? ■