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## **and subsidence prevention at AS007 (BRDH) auxiliary seismic station for sustainable operation and maintenance**

Since 2011, Bangladesh has been hosting an International Monitoring System (IMS) auxiliary seismic station, AS7 (BRDH), in Bariadhala, Chattogram. The station is located atop a hill. Erosion of the sediments and subsidence occurred on the flanks of the hills around the seismic vault and the building. As a consequence, the floor of the building began to subside as well, fractures and cracks opened at the bottom of the walls and in the external pavement in various places, creating a potential risk for the safety of the station. To resolve the problem, Bangladesh Atomic Energy Commission and the Provisional Technical Secretariat have agreed to reinforce the station infrastructure and its surroundings. Appropriate soil stabilization techniques were conducted to protect against hill erosion and subsidence, with funding jointly provided by the European Union and Bangladesh. After critical analysis of the subsidence rate, cracks and fractures formed, building condition, surrounding environment, soil formation, drainage system, and other factors in and around the station, partial dismantling of the existing structure and subsequent renovations were carried out. In addition, the plantation of suitable trees was carried out around the station building for soil erosion resistance. Renovation work enables the station to be operated and sustained over a long period of time.

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