

**SEISMIC PERFORMANCE OF BEAM-COLUMN CORBEL  
CONNECTIONS (IBS) IN THE EXISTING PRECAST REINFORCED  
CONCRETE FRAME UNDER REVERSIBLE LATERAL CYCLIC  
LOADING**

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## **5. Report**

### **5.1 Proposed Executive Summary**

Industrialized Building System (IBS) is actively promoted by CIDB (Construction Industry Development Board) in the construction industries in Malaysia. The main reasons are to overcome the dilemma pertaining to construction productivity, quality of construction products and shortage of skilled workers. In addition to the above matter, there are some advantages of using IBS to reduce manpower, shortening construction period, all weather construction and maintaining the quality of construction (Badir et. al., 2002). IBS has been used in the construction of houses, high-rise condominiums, hypermarkets, apartments, shopping complexes, office buildings and others. Furthermore, the construction of these buildings using IBS as compared to cast-in-place methods are safer in term of construction aspects, quality of material and structural performance (Pampanin, 2003). However, the safety of this system from structure stability aspect is still questionable if it is not properly designed in accordance to seismic code of practice, especially when these buildings were experience higher ground shaking or earthquake attack; either locally or in the neighbouring countries.

Earthquakes occurred in Banda Aceh, Sumatera on December 2004 with 9.2 Scale Richter had triggered some tremors and shaking of the high-rise buildings especially in Penang, Klang Valley, Putrajaya and other parts of West Coast of Malaysia. There were some minor cracks in some of reinforced concrete buildings in Malaysia following these earthquakes. Recent earthquake which happened on 25<sup>th</sup> October 2010 in Mentawai Island, Indonesia with 7.5 Scale Richter has destroyed more than 150 buildings and more than 500 peoples were killed in the tsunami caused by this earthquake event. Although Malaysia, Singapore and Thailand (which are located within Sunda Plate) are categorized as low seismic regions due to its location of about 650km from the Sunda trench, the movements of neighbouring tectonic plates such as India and Australia Plates with velocity 7cm/year towards Malaysia could develop tremor among residents in multi-storey and high-rise buildings in Malaysia (Hamid et. al., 2010).