Research Title: Study on Steel-Ferro cement behavior considering sustainable construction

Abstract:

Housing and Building Research Institute (HBRI) is working closely on eco-friendly, alternative construction materials and technologies for a long time. As a continuation of that, HBRI is trying to develop modern, contextual, and sustainable building technologies in a contextual manner.

The construction popularity of steel as a green material is increasing day by day for its better earthquake resilience, time, and cost-efficiency. On the other hand, Ferro-cement is popular for its lightweight and flexible characteristics. HBRI is opting to introduce and promote these technologies as a sustainable combination in the local context.

At the same time, Bangladesh is a moderately seismic-active region in the world. As a part of development, lots of new buildings are growing in this region continuously without seismic consideration. At the same time, energy consumption, co2 emission, and time and cost consumption in most RCC construction are high compared to steel construction. Noted as a problem in the building construction sector, the situation demands re-searching more contextual, sustainable, and alternative technologies.

Objective:

(a) Feasibility study of prefabricated steel structure and Ferro-cement roofing, combining Ferro-cement jacketing/fire paint resistance in structure.

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(4b) To minimize the accommodation problem for the library, lab, and researcher Workstation in the office, parallelly developing the overall working environment.

Research Images (ongoing construction of pilot building):



Research Team:

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