Abstract
The present paper shows an analysis on the feasibility of implementing a performance-based design of tall buildings from the prefabricated system IMS (Institute of Materials of Serbia), in the city of Santiago de Cuba. Such analyses have not been ever conducted to the system; that is why; failure mechanisms and formation of plastic hinges are still unknown, as well as the ductility stocks of the buildings from this constructive typology against major earthquakes. The paper explains the application of the performance-based design using the nonlinear analysis of history in time. They were obtained through synthetic accelerograms from actual earthquake records.

Keywords
Performance-based design, tall buildings, nonlinear analysis.