

Research in Progress Abstract - Construction Practice (Non-Pedagogical Content)

Industry-wide Standardized and Integrated Information Sharing for Modernized Korean Housing (Hanok)

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A comprehensive research effort in order to develop and disseminate modernized Korean traditional housing (Hanok) has been initiated by Korean government. This large scale research project encompasses a wide spectrum of housing development including public policy, architectural plans, construction materials and methods, prefabricated assemblies, automated production, construction management, and advanced information systems in an integrated way. In order to effectively integrate these processes from an industry perspective, it is of great importance to develop a standard classification and numbering system (SCNS) for the modernized Korean housing. It is necessary to pre-embed SCNS into standardized construction documents and materials in order to facilitate the industry-wide integration among unspecified users, even including do-it-yourself homeowners. It is also required that many different construction documents automatically link with each other to analyze the data. In order to meet these requirements, a comprehensive SCNS for Hanok has been developed. This study focuses on the cost and schedule controls in Hanok construction by using standard classification and numbering system (SCNS) with geometry breakdown structure (GBS for BIM, proposed and patented by this research), work breakdown structure (WBS), and cost breakdown structure (CBS). The proposed method was tested and validated in two mock-up construction projects. Extended breakdown structures (XBSs) for related business functions are currently under development. Distinct characteristics and managerial requirements are explored in order to specify the concept of XBS. Supporting topics such as automated data acquisition and automated data reusing for modernized Hanok are also briefly illustrated. Lessons learned from the on-going research project and future directions are discussed.

Key Words: Project numbering system (PNS), Integration, Information systems, Hanok, BIM