

Building Information Modeling Implementation for Managing an Extra Large Governmental Building Renovation Project

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Abstract : In recent years, there was an observable shift in fully developed countries from constructing new buildings to modifying existing buildings. The issue was that although an effective instrument like BIM (Building Information Modeling) was well developed for constructing new buildings, it was not widely used to renovate old buildings. BIM was accepted as an effective means to overcome common managerial problems such as project delay, cost overrun, and poor quality of the project life cycle. It was recently introduced in Thailand and rarely used in a renovation project. Today, in Thailand, BIM is mostly used for creating aesthetic 3D models and quantity takeoff purposes, though it can be an effective tool to use as a project management tool in planning and scheduling. Now the governmental sector in Thailand begins to recognize the uses of using BIM to manage a construction project, but the knowledge about the BIM implementation to governmental construction projects is underdeveloped. Further studies need to be conducted to maximize its advantages for the governmental sector. An educational extra large governmental building of 17,000 square-meters was used in this research. It is currently under construction for a two-year renovation project. BIM models of the building for the exterior and interior areas were created for the whole five floors. Then 4D BIM with combination of 3D BIM plus time was created for planning and scheduling. Three focus groups had been done with executive committee, contractors, and officers of the building to discuss the possibility of usage and usefulness of BIM approach over the traditional process. Several aspects were discussed in the positive sides, especially several foreseen problems, such as the inadequate accessibility of ways, the altered ceiling levels, the impractical construction plan created through a traditional approach, and the lack of constructability information. However, for some parties, the cost of BIM implementation was a concern, though, this study believes, its uses outweigh the cost.

Keywords : building information modeling, extra large building, governmental building renovation, project management, renovation, 4D BIM

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