# Building Information Models Utilization for Design Improvement of Infrastructure

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**Abstract :** In this study, building information models of the underground temporary structures and adjacent embedded pipes were constructed to show the importance of the information on underground pipes adjacent to the structures to enhance the productivity of execution of construction. Next, the bar chart used in actual construction process were employed to make the Gantt chart, and the critical pass analysis was carried out to show that accurate information on the arrangement of underground existing pipes can be used for the enhancement of the productivity of the construction of underground structures. In the analyzed project, significant construction delay was not caused by unforeseeable existence of underground pipes by the management ability of the construction manager. However, in many cases of construction executions in the developing countries, the existence of unforeseeable embedded pipes often causes substantial delay of construction. Design change based on uncertainty on the position information of embedded pipe can be also important risk for contractors in domestic construction. So CPM analyses were performed by a project-management-software to the situation that influence of the tasks causing construction delay was assumed more significant. Through the analyses, the efficiency of information management on underground pipes and BIM analysis in the design stage for workability improvement was indirectly confirmed.