

Application of GIS in Construction Planning and Management towards Sustainable Development

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Geographic Information System (GIS) has been used in many fields of Science including construction industry. GIS is a Computer based tool which is used to solve engineering problems related to spatial data. The potential importance of GIS to construction planning and management in the construction industry has not been realized completely. GIS technologies have the potential to solve space related problems of construction planning and management involving, integration of information, urban planning, project site selection, soil studies, hydrology and environmental studies. In sustainability concept through GIS the users can determine exact resource needs, efficient planning of usage of lands and conserve environment for future generations. It was found that the construction industry in Sri Lanka is reluctant to apply the GIS in the construction projects. Therefore, this study was aimed to analyze the implementation issues of the application of GIS in the field of quantity surveying as a part of construction planning and management to sustainable development. Interviews were conducted to gather data from the senior quantity surveyor and GIS specialists in the fields of construction and project management. The sample was 40 and the selection method was purposive sampling specially based on the direct involvement in the project under the capacity of decision making. The study was done by using only the primary data and the analysis was done by developing a comprehensive content analysis by gathering common solutions and prioritizing them. It was found that there are key issues in the implementation of GIS including the unawareness and the overlapping with other specific techniques. The respondents have proposed the possible ways of implementing GIS to the construction planning and management for enhancing the productivity of the projects to achieve sustainability specially by doing a proper benefit analysis.

Keywords: Geographical Information System (GIS), Construction Planning and Management, Custom Application, Project Management, Sustainable Development

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