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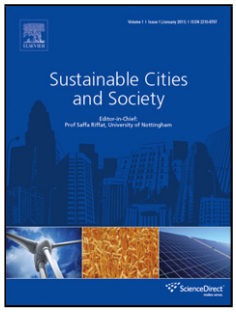

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Green Commercial Building Projects in Singapore: Critical Risk Factors and Mitigation Measures

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Abstract

Green buildings have achieved rapid development over the past two decades, yet research efforts on risk management in green building projects are still very limited. This study aims to identify and evaluate risk factors in green commercial building projects in Singapore, to compare their risk criticalities with those in traditional counterparts, and to propose mitigation measures that can tackle these risk factors. To achieve these goals, a comprehensive literature review and structured interviews were carried out, and a questionnaire survey was conducted with 25 Singapore-based construction companies. Survey results showed that the top five critical risk factors in green commercial building projects were "inflation," "currency and interest rate volatility worsened by the import of green materials," "durability of green materials," "damages caused by human error," and "shortage of green materials." Results also showed that green commercial building projects faced risks of design change and poor construction quality for less criticality than their traditional counterparts, but that the adoptions of green ideas, materials, and technologies had posed additional risks to green commercial building projects. Additionally, seven widely used risk mitigation measures were also proposed by this study.