

**MINIMIZING CLAIMS IN DESIGN AND BUILD  
FLOOD MITIGATION PROJECTS**

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## DECLARATION

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The above candidate has carried out research for Masters thesis under my supervision

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# ABSTRACT

## Minimizing Claims in Design and Build Flood Mitigation Projects

The intensity and frequency of extreme weather events has caused severe damage to property as well as lives all over the world. Sri Lanka, no exception is one of major victim of such extreme weather conditions including heavy floods. Flooding remains as a danger mainly to unplanned and low-lying areas in the country. Kelani River, one of the main river basins in Sri Lanka, flows through centre of Colombo city. Being the capitol city of the country and experiencing continuous flooding, the government recently has taken measures to minimize damages to both properties and lives of people in Colombo city limits, by intensifying flood mitigation actions. Metro Colombo urban development project (MCUDP) was thus formulated to implement measures focused on reducing floods in Colombo city limits. Several projects were initiated under MCUDP focusing on drainage management and flood mitigation with an investment of USD 213 million from World Bank (WB).

These projects are being implemented as design-bid-build procurements. When the project is becoming more complex and need integral knowledge of experts with the need of fast track implementation, it becomes an inherent choice to follow design & build procurements where the contractor becomes responsible to both design and construction scopes. The research focus is on two projects focused on flood mitigation and being implemented as design and build procurement. By implementing projects as design and build procurement both funding agency and implementing authority expect several advantages over traditional design-bid-build procurement. Since single point of responsibility acts both in design and construction stages it is expected to see fast track implementation. In addition, the consultant knowledge and experience of experts are expected to in filter to project supervision.

When projects are implemented under donor funding agencies the project implementation authority is inherently bounded to follow guidelines set by the donor. Thus, these projects are following the procurement guidelines set by the funding agency. By implementing set procurement guidelines and methods it is expected to finish these projects with high price certainty and achieving strict completion targets. This give the opportunity to the funding agencies to disburse funding on new projects. Yet, it is observed a reasonable number of claims were raised by the contractor resulting to huge concern on achieving set delivery and cost targets. The research focuses on identifying sources for such claims and propose methods to mitigate such claimable situations. For achieving this objective, previous studies on sources for claims done by various authors were extensively studied and checked applicability to the existing project.

The concern of the research is focused on pre-contract stage of the project where the client has the most control. Thus, it is expected to come up with certain suggestions to minimize claimable situations applicable on donor funded flood mitigation projects, when the project is mostly under the client's control, i.e., at pre-contract stage. The outcome of the research is to be identified as a huge asset when implementing such design and build projects focused on flood mitigation funded by various funding agencies.

**Key words:** Floods, Funding Agencies, Claim, Design and Build, Pre-Contract, Sri Lanka

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## LIST OF ABBREVIATIONS

BOQ	-	Bill of quantity
CEB	-	Ceylon Electricity Board
CRIP	-	Climate Resilience multiphase approach project
EPC	-	Engineering Procurement Construction
FEED	-	Front End Engineering Design
FIDIC	-	International federation of consulting engineers
GC	-	General conditions in the contract
GDP	-	Gross domestic production
ICB	-	International competitive bidding
IMF	-	International Monetary Fund
IFC	-	International Finance Corporation
KPMG	-	Klynveld Peat Marwick Goerdeler
LECO	-	Lanka Electricity Company
MCUDP	-	Metro Colombo Urban Development Project
PC	-	Particular conditions in the contract
QS	-	Quantity surveyor
RICS	-	Royal Institution of Chartered Surveyors
RII	-	Relative important index
SBD	-	Standard Bidding Document
UK	-	United Kingdom
UNDP	-	United Nations Development Programme
US	-	United State
WB	-	World Bank