

# Design Consideration Including Construction Stage Analysis for the Cable Stayed Bridge (FB01-Marina Bridge) in Port City Colombo Project, Sri Lanka

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## Abstract

Port City Colombo developed by CHEC Port City Colombo (Pvt) Ltd through China Harbour Engineering Company (CHEC) is a pristine city development in Colombo, Sri Lanka, spanning 269 hectares. Port City Colombo, built as an extension of Sri Lanka's vibrant capital city Colombo, once completed, would be South Asia's premiere residential, retail and business destination.

Atkins, a member of the SNC Lavalin Group, was appointed by CHEC Port City Colombo (Private) Limited to provide Consultancy Services for the design of all Infrastructure and Landscape works, public realm and associated infrastructure in Colombo Port City. This paper discusses the design criteria of the marina cable stayed foot bridge (FB01) in depth including the construction stage and service stage analysis and design checks.

**Keywords:** fixed arch bridge; cable stay; pedestrian footbridge; steel orthotropic deck; long span; tuned mass dampers; cable tuning analysis.

## 1 Introduction

The approved masterplan of Colombo Port City Project requires a very attractive pedestrian footbridge near the mouth of the canal entering the Port city. This is depicted in Fig-1.



Fig 1: Master plan of Port City Colombo