



## Megastructures for a Long Marine Bridge in Kuwait

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### Abstract

One of the longest marine bridges in the world will be in service this year. The total length is 48,5km including Main and Doha links. The construction was started on beginning of 2013, the inauguration is planned on November 2018. This bridge is named after the late Emir "Sheikh Jaber Al-Ahmed Al-Sabah", in power between 1977 and 2006.

For this project, Systra has proposed and designed innovative solutions: (i) using whole prefabricated prestressed 60m spans, transported and installed by floating crane or by launching gantry, (ii) using pre-tensioning prestressing in both directions; longitudinally in the bottom slab and webs and transversally in the top slab, and (iii) using monopile system which reduces the impact on marine fauna and improves the safety and the construction schedule.

**Keywords:** Fully prefabricated spans, pre-tensioning, monopile, cable stayed main bridge

### 1 Introduction

The State of Kuwait has a will to create in the coming years a new city "Silk City" at the northeastern end of the Kuwait bay, Subiyah area near Bubiyan Island. To facilitate exchanges between this new city and Kuwait City, the State decided to build a road to join the north-east part of Kuwait by the sea.

This project consists of:

- A main link bridge (Main Link) 36,1km long, 27km over the sea with a cable-stayed bridge which allows a navigation clearance 120m wide by 23m high (Figure 1). This link connects Kuwait City with the future Silk City and the International Port of Bubiyan, reducing transport time by about one hour (35 minutes compared to 1h30 at present) and stimulating exchanges in the State.
- A second road bridge of 12,4km (Doha link) also under construction. This second contract with another Consortium allows the Shuwaikh (Figure 2) district to be connected to the Doha district (west of Kuwait City).