

Western Express Highway (WEH) Mumbai Metro (India)



Project description

The Mumbai Metro construction project began in 2008 and had been executed in order to meet the city's rapid population growth.

Mumbai is the capital city of Maharashtra, the most economically developed state of India with a population growth rate of around 2% per annum (as per 2011). The main objective of the Mumbai Metro is to provide mass rapid transit services to people within an approach distance of between 1 and 2 kilometres, and to serve the areas not connected by the existing Suburban Rail network.

At the WEH junction, trains pass over the highway on a cable-stayed bridge and at the same time traffic on the highway crosses on another concrete bridge, making the junction a very complex intersection.

The project is located in Mumbai, one of the most bustling cities of the Indian subcontinent



mageba scope

As shown on the picture above, the cable-stayed bridge is located over the highway bridge hence being built in a critical environment where any damage would cause significant repercussions. Therefore, the bridge had to be equipped with a system that is able to immediately react to any alarming impact.

The installed ROBO®CONTROL structural health monitoring system is mageba's reliable product development to monitor the structure's condition, behaviour and performance during operation. In particular, it monitors the pylon's inclination, the cable's vibration and tension, the deck's deflection as well as the concrete's deformation allowing any critical deviation to be detected and accordingly presented to the engineers in charge.

Night-installation of a wind sensor



Highlights & facts

mageba products:

Type: ROBO®CONTROL permanent monitoring system

Features: Strain gauges, displacement, laser, humidity sensors, accelerators, inclinometers

Installation: 2015

Structure:

City: Mumbai

Country: India

Completed: 2011

Type: Cable-stayed bridge

Length: 175 m

Owner: Mumbai Metropolitan Region Development Authority

Contractor: Mumbai Metro One Private Limited (MMOPL)

The cables have been equipped with accelerometers measuring its vibration and tension (see red circle)

