



Innovation and Creation of Recent Bridge Engineering under the Direction of IABSE Outstanding Structure Award

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Abstract

Over recent years there has been considerable development in bridge engineering. Thirty-two bridge projects have received IABSE Outstanding Structure Awards during the past two decades in recognition of the most remarkable, innovative, creative, or otherwise stimulating structures. Several creative structural forms have been created such as two twin-box girder suspension bridges, three spatial main cable suspension bridges, six multi-main-span cable-supported bridges and one cable-stayed and suspension hybrid bridge. Various innovative material combinations have been developed and used in two steel truss and PC flange composite girder bridges, one butterfly web extradosed bridge, one multiple material strength bridge and one long-life concrete cable-stayed bridge. Some remarkable functional technologies have been invented for two remarkable movable bridges, two innovative cable-stayed bridges, two extreme seismic function cable-supported bridges and two environmental coordination bridges. Many stimulating bridge projects have been awarded as Winners or Finalists including three extradosed bridges, four arch bridges, two cable-stayed bridges and four sea-crossing bridges. The innovation and creation of recent bridge engineering has been recognised by IABSE Outstanding Structure Award reflecting the creative structural forms, the innovative material combinations, the remarkable functional technologies and the stimulating bridge projects.

Keywords: Recent bridge; structural form; material combination; functional technology; stimulating structure.

1 Introduction

The International Association for Bridge and Structural Engineering (IABSE) was founded in Zurich, Switzerland on October 29, 1929. After more than 90 years of development, IABSE has become one of the most prestigious institutions dealing with all types of structures, all materials and worldwide membership from over 100 countries. The mission of IABSE is to exchange knowledge and to advance the practice of structural engineering in the service of the profession and society. For this purpose, IABSE

established the Outstanding Structure Award (OStrA) in 1998, one of the highest distinctions awarded by IABSE and recognized in different regions of the world for the most remarkable, innovative, creative, or otherwise stimulating structures [1]. During the past 22 years from 2000 to 2021, 28 building structures and 32 bridge structures have been awarded as the OStrAs, including 33 Winners and 27 Finalists [2]. From 2022, IABSE will launch the IABSE Project and Technology Awards for Small Projects, Building Structures, Pedestrian and Cycle Bridges, Road and Rail Bridges, Infrastructure, Rehabilitation,