

OSKAR VON MILLER FORUM

Press Release

Queensferry Crossing – Innovation in Engineering

A lecture by Lars T. Thorbek / Ramboll Denmark, Copenhagen, on October 25, 2018 at 6:30 pm at the Oskar von Miller Forum

The lecture will focus on innovation in bridge design with the Queensferry Crossing as the starting point; looking back in time to see where we come from and looking ahead to see where we're going. Are we truly being innovative or are we just making minor adjustments to the fundamentals of bridge design.

Bridge building is unique in many ways and humans have been building bridges for thousands of years, some of them still standing. This gives a unique insight into how bridges were built in the past and how the design has evolved over time; a very slow-moving evolution.

The Queensferry Crossing

The Queensferry Crossing is a major cable-stayed road bridge crossing the Firth of Forth estuary close to Edinburgh, Scotland. The bridge was inaugurated by HM The Queen on September 4th, 2017. The total crossing length is 2.64km, of which 2.10km is a cable-stayed system with two main spans of 650m. The central tower is stabilized by cable fans extended to overlap at the centers of the main spans, a solution which is unique for a bridge of this scale.

Ramboll has led the Design Joint Venture which includes Sweco and Leonhardt, Andrä und Partner. Ramboll provided an integrated design, comprising structural design, mechanical and electrical systems, monitoring and security systems, access facilities, etc. including being the overall lead for the Design Joint Venture.

A successful design

The success of the Queensferry Crossing can be attributed to the close collaboration between the design and construction team during the initial stages of the project. It is only when we work together across technical disciplines and bring in the right competences that we can develop our business and become truly innovative. A look into the future of bridges will be attempted during the lecture hopefully answering the question; why is this innovative and a sustainable solution for the future.

A world record

Innovation is not about breaking records but breaking barriers. However, it has become the industry standard when doing large bridges that we should highlight the records broken and Queensferry Crossings is no exception. In September 2016 the pair of balanced cantilevers on each side of the central tower reached a combined length of 644m, a world record recognized by The Guinness Book of Records.

About

Lars T. Thorbek has 25 years' experience as an engineer and manager. He has a background in structural dynamics and wind engineering but has in the last 15 years taken up various management positions. Today he is part of the senior management in the transport Division as the Global Division Director for Major Crossings, a division that encompasses large bridges and tunnels on a global market. On the Queensferry Crossing Lars T. Thorbek was the design manager for the Design Joint Venture during the tender design period and successfully lead the team to win the job.

Ramboll is a leading engineering, design and consultancy company founded in Denmark in 1945. The company employs more than 14,000 experts globally and has especially strong representation in the Nordics, UK, North America, Continental Europe, Middle East and Asia-Pacific. With 300 offices in 35 countries, Ramboll combines local experience with a global knowledgebase constantly striving to achieve inspiring and exacting solutions that make a genuine difference to our clients, the end-users, and society at large. Ramboll works across the following markets: Buildings, Transport, Planning & Urban Design, Water, Environment & Health, Energy and Management Consulting and the Group has a revenue of € 1.4Bn.