Great Belt

The **Great Belt Fixed link** ([Danish](https://en.wikipedia.org/wiki/Danish_language): *Storebæltsforbindelsen*) is a multi-element [fixed link](https://en.wikipedia.org/wiki/Fixed_link) crossing the [Great Belt](https://en.wikipedia.org/wiki/Great_Belt) strait between the [Danish](https://en.wikipedia.org/wiki/Denmark) islands of [Zealand](https://en.wikipedia.org/wiki/Zealand) and [Funen](https://en.wikipedia.org/wiki/Funen). It consists of five structures: a road [suspension bridge](https://en.wikipedia.org/wiki/Suspension_bridge) and a railway [tunnel](https://en.wikipedia.org/wiki/Tunnel) between [Zealand](https://en.wikipedia.org/wiki/Zealand" \o "Zealand)and the small island [Sprogø](https://en.wikipedia.org/wiki/Sprog%C3%B8" \o "Sprogø) located in the middle of the Great Belt, and a [box girder bridge](https://en.wikipedia.org/wiki/Box_girder_bridge) for both road and rail traffic between Sprogø and Funen. The "**Great Belt Bridge**" (Danish: *Storebæltsbroen*) commonly refers to the suspension bridge, although it may also be used to mean the box-girder bridge or the link in its entirety. The suspension bridge, officially known as the East Bridge, has the world's third [longest main span](https://en.wikipedia.org/wiki/List_of_longest_suspension_bridge_spans) (1.6 km), and the longest outside of Asia. It was designed by the Danish engineering firms [COWI](https://en.wikipedia.org/wiki/COWI_A/S" \o "COWI A/S)and [Ramboll](https://en.wikipedia.org/wiki/Ramboll" \o "Ramboll). The link replaced [the ferry service](https://en.wikipedia.org/wiki/Great_Belt_ferries) that had been the primary means of crossing the Great Belt. After more than five decades of speculation and debate, the decision to construct the link was made in 1986; the original intent was to complete the railway link three years before opening the road connection, but the link opened to rail traffic in 1997 and road traffic in 1998. At an estimated cost of [DKK](https://en.wikipedia.org/wiki/Danish_krone) 21.4 billion (1988 prices),the link is the largest construction project in Danish history.

Operation and maintenance are performed by *A/S Storebælt* under *Sund & Bælt*. Construction and maintenance are financed by [tolls](https://en.wikipedia.org/wiki/Toll_road" \o "Toll road)on vehicles and trains.

The link has reduced travel times significantly; previously taking about an hour by ferry, the Great Belt can now be crossed in about ten minutes. The construction of the link and the [Øresund Bridge](https://en.wikipedia.org/wiki/%C3%98resund_Bridge" \o "Øresund Bridge) have together enabled driving from mainland Europe to Sweden and the rest of Scandinavia through Denmark. Cyclists are not permitted to use the bridge, but cycles may be transported by train or bus.

## **History**

The [Big Belt ferries](https://en.wikipedia.org/w/index.php?title=Big_Belt_ferries&action=edit&redlink=1) entered service between the coastal towns of [Korsør](https://en.wikipedia.org/wiki/Kors%C3%B8r" \o "Korsør) and [Nyborg](https://en.wikipedia.org/wiki/Nyborg" \o "Nyborg) in 1883, connecting the railway lines on either side of the Belt. In 1957, road traffic was moved to the [Halsskov](https://en.wikipedia.org/w/index.php?title=Halsskov&action=edit&redlink=1" \o "Halsskov (page does not exist))–[Knudshoved](https://en.wikipedia.org/w/index.php?title=Knudshoved&action=edit&redlink=1" \o "Knudshoved (page does not exist)) route, about 1.5 kilometres to the north and close to the fixed link.

Construction drafts for a fixed link were presented as early as the 1850s, with several suggestions appearing in the following decades. The [Danish State Railways](https://en.wikipedia.org/wiki/Danish_State_Railways), responsible for the ferry service, presented plans for a bridge in 1934. The concepts of bridges over Øresund (152m DKK) and Storebælt (257m DKK) were calculated around 1936. In 1948, the Ministry for Public Works (now the [Ministry of Transport](https://en.wikipedia.org/wiki/Danish_Ministry_of_Transport)) established a commission to investigate the implications of a fixed link.

The first law concerning a fixed link was enacted in 1973, but the project was put on hold in 1978 as the [Venstre](https://en.wikipedia.org/wiki/Venstre_(Denmark)" \o "Venstre (Denmark)) (Liberal) party demanded postponing public spending. Political agreement to restart work was reached in 1986, with a construction law ([Danish](https://en.wikipedia.org/wiki/Danish_language): *anlægslov*) being passed in 1987.

The design was carried out by the engineering firms [COWI](https://en.wikipedia.org/wiki/COWI_A/S) and [Ramboll](https://en.wikipedia.org/wiki/Ramboll" \o "Ramboll) together with [Dissing+Weitling](https://en.wikipedia.org/wiki/Dissing%2BWeitling" \o "Dissing+Weitling) [architecture practice](https://en.wikipedia.org/wiki/Architectural_firm).

Construction of the link commenced in 1988. In 1991, Finland sued Denmark at the [International Court of Justice](https://en.wikipedia.org/wiki/International_Court_of_Justice), on the grounds that Finnish-built mobile offshore drilling units would be unable to pass beneath the bridge. The two countries negotiated a financial compensation of 90 million [Danish kroner](https://en.wikipedia.org/wiki/Danish_krone), and Finland withdrew the lawsuit.

The link is estimated to have created a value of 379 billion DKK after 50 years of use.

## **Construction**

The construction of the fixed link became the biggest building project in the history of Denmark. In order to connect [Halsskov](https://en.wikipedia.org/w/index.php?title=Halsskov&action=edit&redlink=1" \o "Halsskov (page does not exist)) on [Zealand](https://en.wikipedia.org/wiki/Zealand) with [Knudshoved](https://en.wikipedia.org/w/index.php?title=Knudshoved&action=edit&redlink=1" \o "Knudshoved (page does not exist)) on [Funen](https://en.wikipedia.org/wiki/Funen), 18 kilometres to its west, a two-track railway and a four-lane motorway had to be built, via the small island of [Sprogø](https://en.wikipedia.org/wiki/Sprog%C3%B8" \o "Sprogø) in the middle of the Great Belt. The project comprised three different tasks: the East Bridge for road transport, the East Tunnel for rail transport and the West Bridge for road and rail transport combined. The construction work was carried out by Sundlink Contractors, a consortium of [Skanska](https://en.wikipedia.org/wiki/Skanska), [Hochtief](https://en.wikipedia.org/wiki/Hochtief" \o "Hochtief), [Højgaard & Schultz](https://en.wikipedia.org/wiki/MT_H%C3%B8jgaard" \o "MT Højgaard) (which built the West Bridge) and [Monberg & Thorsen](https://en.wikipedia.org/wiki/MT_H%C3%B8jgaard" \o "MT Højgaard)(which built the eight-kilometre section under the Great Belt). The work of lifting and placing the elements was carried out by [Ballast Nedam](https://en.wikipedia.org/wiki/Ballast_Nedam) using a floating crane.

