



## Oceanpiren, Helsingborg, a unique cable-supported footbridge

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### Abstract

As part of ambitious development plans to revitalise the city of Helsingborg, an international competition was launched in 2014 for the design of a new Pedestrian and Cycle Bridge linking the main Public Transport hub in the City Centre to the area called Oceanhamnen.

Ramboll was ultimately successful in the design competition with an innovative proposal for a unique bridge form, a suspension/cable stayed hybrid, conceived as a gently inclined flowing S form.

This paper charts the development of the design focusing primarily on the use of parametric modelling software to determine the bridge's intricate 3-dimensional geometry. This process simultaneously confirmed the final aesthetic form and addressed complex structural and buildability issues to ultimately make this unique bridge both structurally efficient and cost-effective.

**Keywords:** Pedestrian bridge, Architecture, Innovation, Parametric design, Optimisation, Aesthetics, Materials, Buildability, Sustainability.

### 1 Introduction

The City of Helsingborg has been formulating plans to develop vibrant new neighbourhoods and revitalise its urban fabric. The project, called H+, comprises four new districts to the old port and industrial area to the southern part of Helsingborg. These are called Oceanhamnen, Universitetsområdet, Husarområdet and Gåsebäck and will link up with the city centre and provide 5,000 new homes, office space, restaurants and other businesses by 2035.

Oceanhamnen is formed of a number of islands located in the town's harbour inlet close to the

main transport interchange. The new bridge will play a crucial role in the future success of the development of H+ as it:

- Provides a vital link between Oceanhamnen with Central Helsingborg
- Connects Oceanhamnen with international travel opportunities
- Completes key pedestrian and cycle routes through downtown Helsingborg

The City's brief required the bridge to be efficient, and low-maintenance, but also provide a landmark and focal point for the future development at Oceanhamnen.