

## Mobility Architecture as a Driver of Social Sustainability Outcomes

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### Abstract

From small footpaths to large ocean spans, bridges connect people, reduce travel time, and generate economic opportunity. Successful mobility solutions strengthen social cohesion and provide a strong sense of place to local communities. Today's infrastructure must deliver an ever-increasing list of ESG outcomes. Within complex infrastructure value chains, architects can collaborate with engineering partners to prioritize social sustainability and centre the human user within the design process.

Dissing+Weitling presents three bridges across a spectrum of functions to demonstrate how design can be a key driver of social impact and sustainability outcomes. Together, the Great Belt Bridge, Køge Nord Station, and Copenhagen Bicycle Snake present a case for bridge design as social value drivers through landmark placemaking, improvement of urban life, and universal design.

**Keywords:** social cohesion; social impact; suspension; bicycle bridge; placemaking; user centred mobility; universal design; cultural heritage; sustainable transportation

### 1 Introduction

A bridge is an opportunity: a functional solution to a mobility problem, a safe crossing for human users. This holds true regardless of scale or geography – the smallest pedestrian bridges can fundamentally transform both individual and communal rituals of movement just as meaningfully as a large ocean crossing.

Increasingly, design parameters speak to the severity of the polycrisis. Investment in new infrastructure must deliver economic returns – driving efficiency for the flow of goods and raw materials and increasing connectivity between regional partners. At the same time, new bridge developments balance negative impact trade-offs necessary to ensure public safety. Raw materials resource intensity and the environmental impact of construction are key considerations for national, regional, and local planners. Alongside these concerns lies the opportunity to catalyse social value creation.

Mobility architecture drives social impact by centring the human user. In striving for long-lasting infrastructure that provides focal points for good experiences, bridges hold the potential to be socially sustainable across scales and geographies.

Regardless of modality, the act of crossing a bridge contributes to a user's sense of place: good experiences, visual access to urban or natural landscapes, and the ability to develop meaningful connections with both the self and the surrounding environment. A strong sense of place strengthens the social cohesion of communities, develops the cultural heritage stock, and can incentivize the adoption of sustainable behaviour as a part of a just, green transition.

The nature of a bridge's potential for social value creation is embedded within the mobility problem it seeks to solve. Therefore, architects facilitate a collaborative discovery process with the entire project development value chain. A comparison of three Danish bridges – Great Belt Fixed Link, Køge Nord Station, and the Copenhagen Bicycle Snake –