

STEPPING CONCRETES

An old type of bridge, Stepping Stones, has become the motivation of the concept. The natural and minimal aspect of 'Stepping Stones' is interpreted as an elegant way of constructing a bridge and also people that are crossing this old type of bridge in an urban area can have an elegant experience. Thus the 16 concrete modules are floating on the canal in front of Stopera (Music Theater) to link the residential area below to the Stopera and the Flea Market above.

The two existing docks will be replaced with new docks that support the concrete modules and cables. Also the new docks are necessary to provide the decline from the street levels down to the bridge. The new dock together with the half circular platform will serve as a public space in front of the Stopera and also for the residential area below.

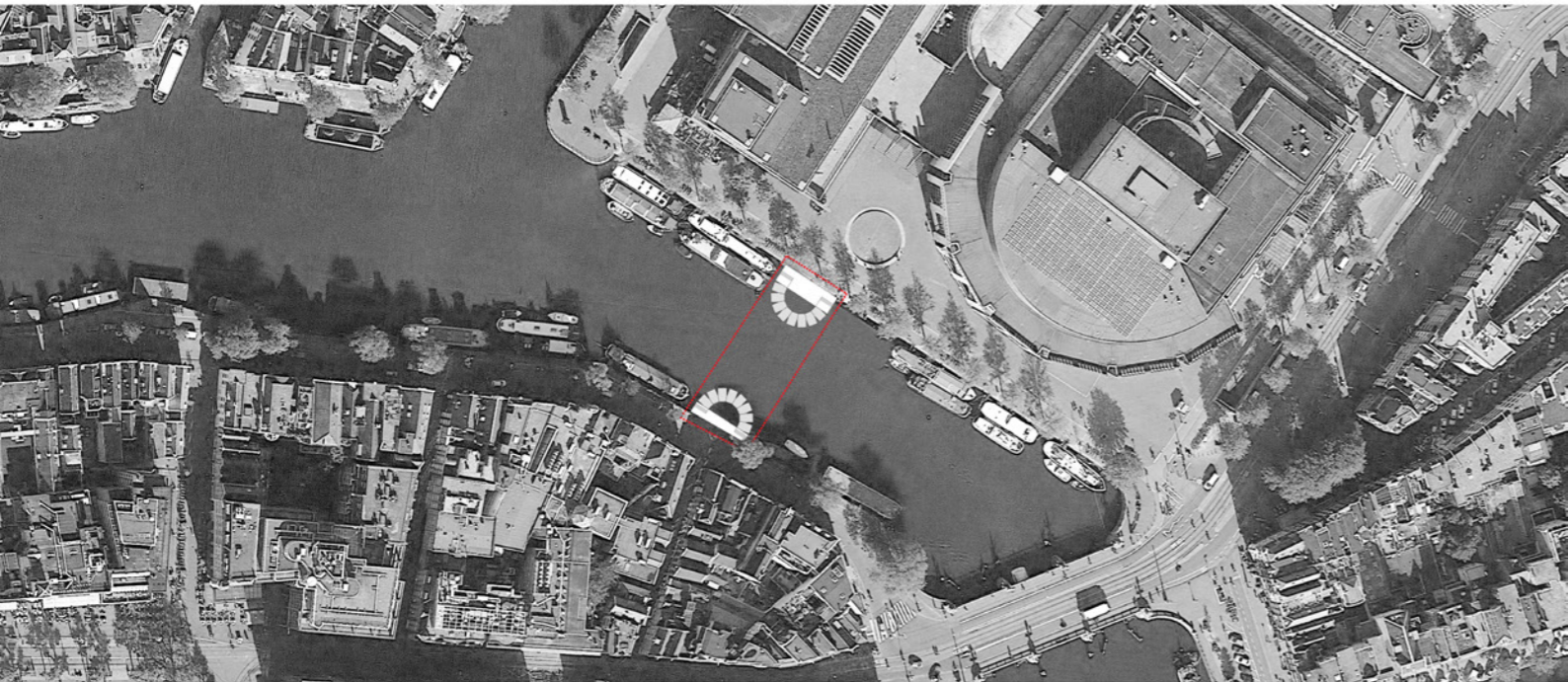
The design of the bridge is strongly related to its function of changing its form from a half circle to a straight bridge. Four cables will be penetrating through each concrete module to make the adjustment between a platform and a bridge. The proposed concrete will be produced as a Lightweight Aggregate Concrete (LWAC) with a mixture of acrylic balls.

The 'Stepping Concretes' is a structure that can be adjusted to becoming a half circular platform or a bridge that can be placed in various spots along the canal of Amsterdam. The main idea is to reduce the weight of the bridge construction by making the concrete components float. Then minimal cables can be placed on the docks to hold the concrete modules together and also to provide stability to the bridge.



AMSTERDAM FIGURE AND GROUND

SITE PLAN OF THE STEPPING CONCRETES



MATERIAL COMBINATION

The basic concept of the concrete combination is to make the concrete modules as light and less dense as possible. Lightweight aggregated concrete can be used containing solid acrylic balls.

1. **LIGHTWEIGHT AGGREGATE CONCRETE**
This method of concrete is to replace the heavy aggregates into lighter materials. This way the concrete used in the bridge will have reduced weight and density, allowing it to float itself.

2. **ACRYLIC BALLS**
Solid acrylic balls can be a possibility of a lightweight aggregate. Because of the acrylic balls, there can be a secondary benefit of transparency in which the concrete can penetrate light.

The Acrylic Aggregate Concrete will be the basic concrete combination applied in the design of the Stepping Concretes.

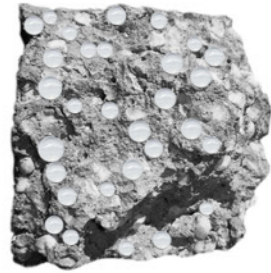
Lightweight Aggregate Concrete



Acrylic Balls



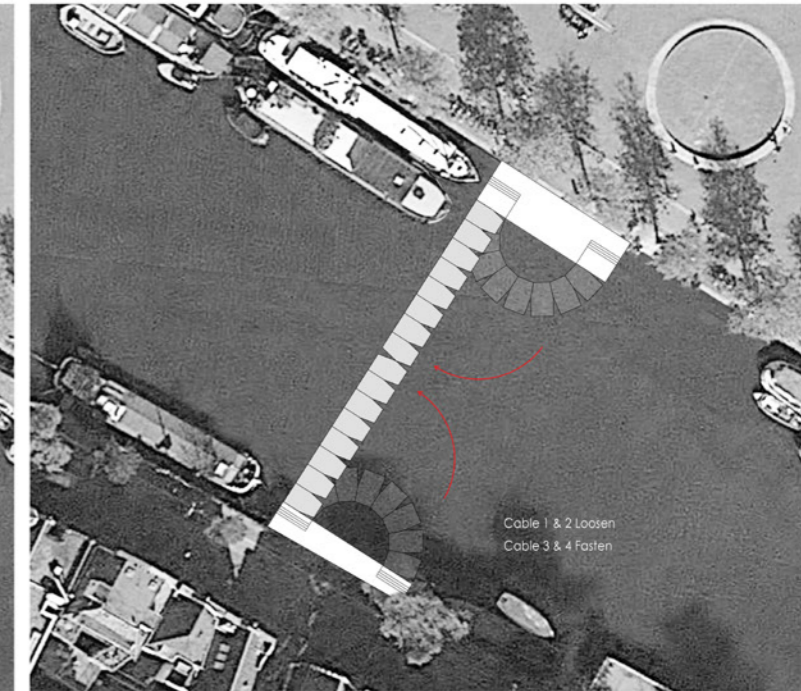
Acrylic Balls used as Aggregate



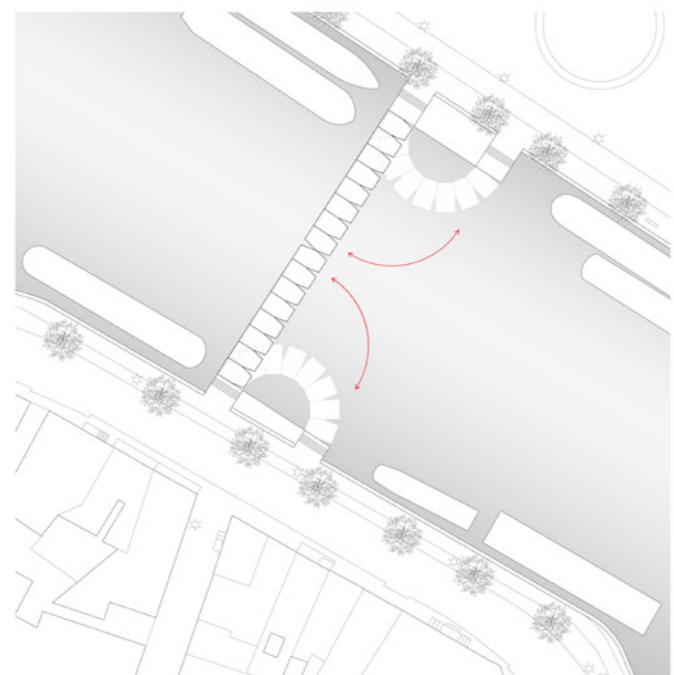
ROUND PLATFORM TYPE OVERVIEW



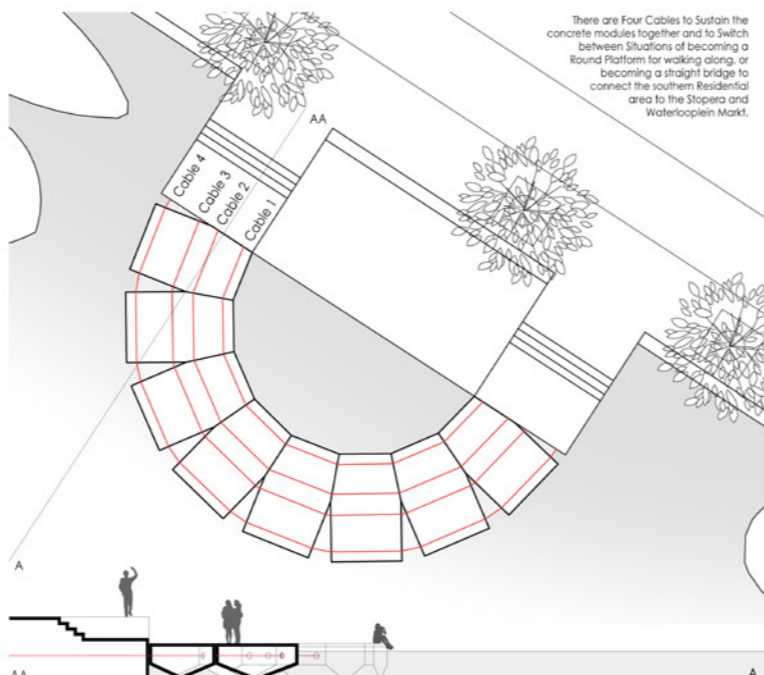
STRAIGHT BRIDGE TYPE OVERVIEW



CHANGING BETWEEN PLATFORM AND BRIDGE

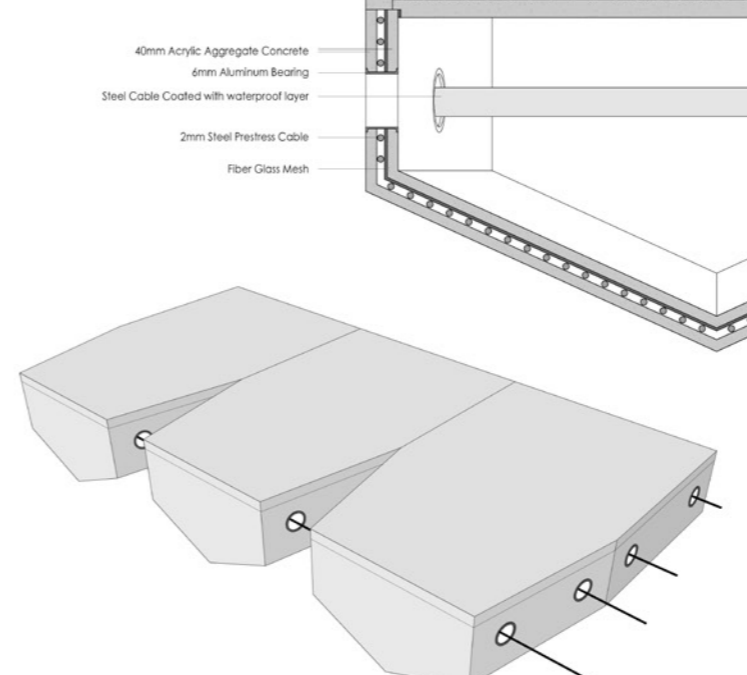


MASTERPLAN AND SECTION OF THE PLATFORM SCALE 1:100



There are Four Cables to Sustain the concrete modules together and to Switch between Situations of becoming a Round Platform for walking along, or becoming a straight bridge to connect the southern Residential area to the Stopera and Waterlooplein Markt.

OVERALL DETAIL AND SECTION SCALE 1:10



- 40mm Acrylic Aggregate Concrete
- 6mm Aluminum Bearing
- Steel Cable Coated with waterproof layer
- 2mm Steel Prestress Cable
- Fiber Glass Mesh

PERSPECTIVE VIEW OF THE STEPPING CONCRETES

