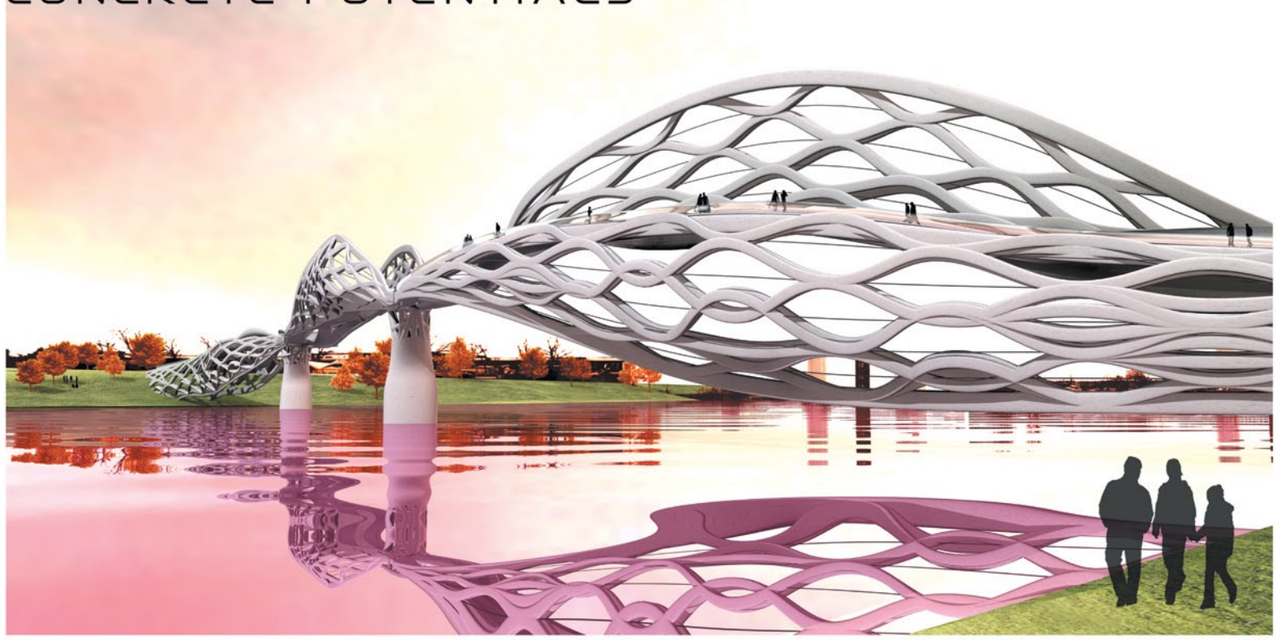
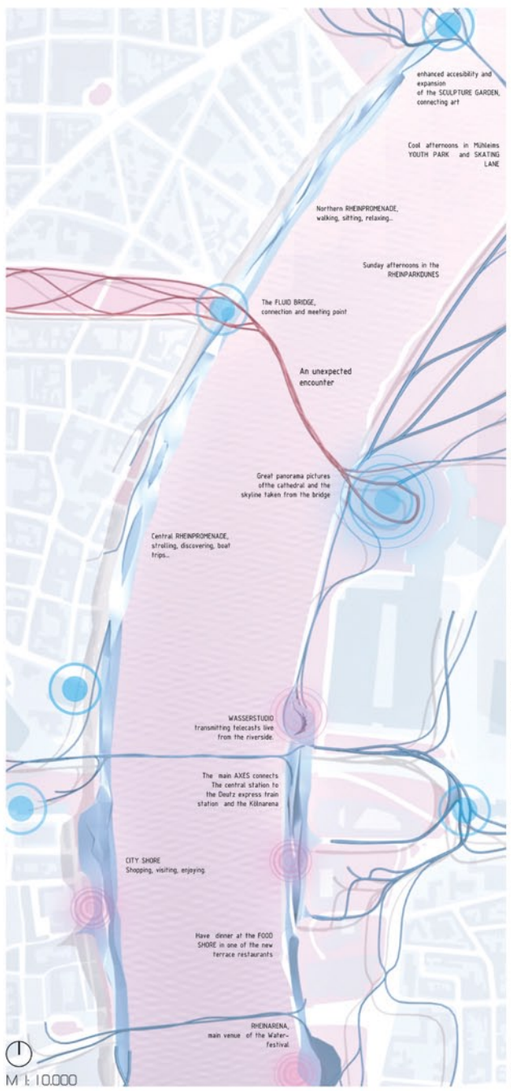
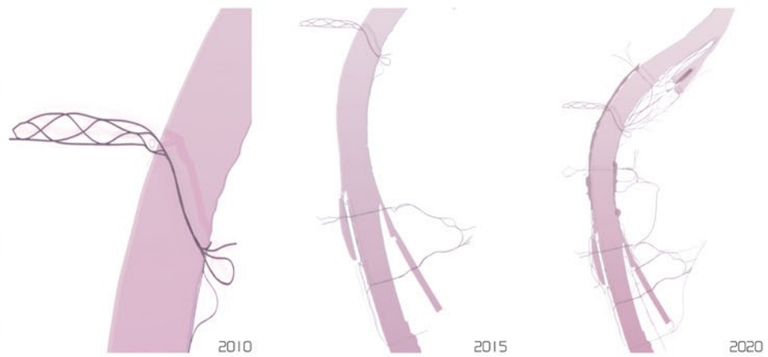
MG III
CONCRETE POTENTIALS







VIRTUAL LINES

Gilles Deleuze said that there are no points or positions, only lines (Gilles Deleuze and Felix Guattari, Rhizom, 1977).

Lines are the essence of our project. Those curves are not arbitrary, they cross, meet and connect to each other into patterns of interaction, creating a structure that is generic enough to represent as well social as material dynamics. They braid a web of leisure activities over the river banks and feeding into the city. At one place the lines densify and solidify into a bridge which is more than a simple connection from A to B. It constitutes a complex texture of ways, detours, shortcuts, paths and squares, evoking unexpected encounters and experience.

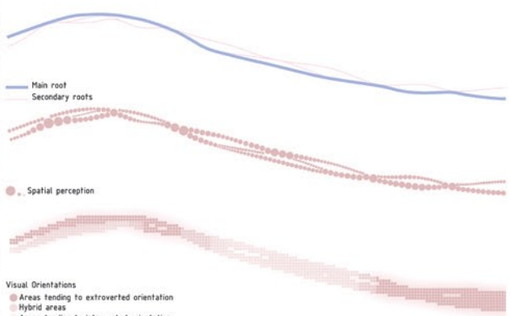
The dynamic language can be reduced to a small set of „letters" with different meanings:

The Crossing
Two lines crossing have different significance. They allow detours and shortcuts, swaps of direction, changes in mind or load-reconduction.

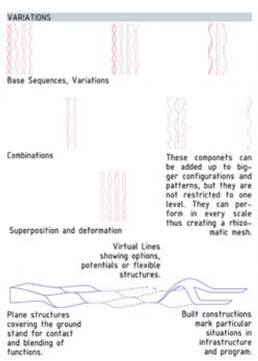
The Meeting
Lines meeting emanate from different meanings, but share informations over a certain area. Maybe they influence each other or create in betweens, provoke gatherings, allow separations, loads can be shared or added.

The Merging/ Splitting
Lines with the same origin begin with similar significance whichs difference can grow with distance. A decision has to be taken, forces are induced.

BRIDGE - SPACE DETERMINATION



VARIATIONS



DEFORMATION

Steps from abstract lines to materialization.

KÖLN - DEUTZ

Cologne is not one big city. it consits in a number of cores (at least two, Köln and Deutz), that are not always very well connected and therefore do not work as one city. How can these individual cores be networked in order to get an identitity as multitude?

How can one concieve the unconceivable?

The Meshwork is an metaphor representing a system of taken, urbanistic, architectural and design decisions. Existing places are intertwined to each other through an emerging, partially virtual network and thus creating new program, hotspots and potentials, spontaneously but also controlled.

Over time a leisure-structure, embracing the two riverbanks and city cores will arise and implant itself to the existing town-structure. Its most architectural expression is the pedestrian bridge connecting the Rheinpark with the Rhines other side.

The complete project operates on smaller scale as well as on a quasi regional scale only through coaction and linking of many consciously taken steps.

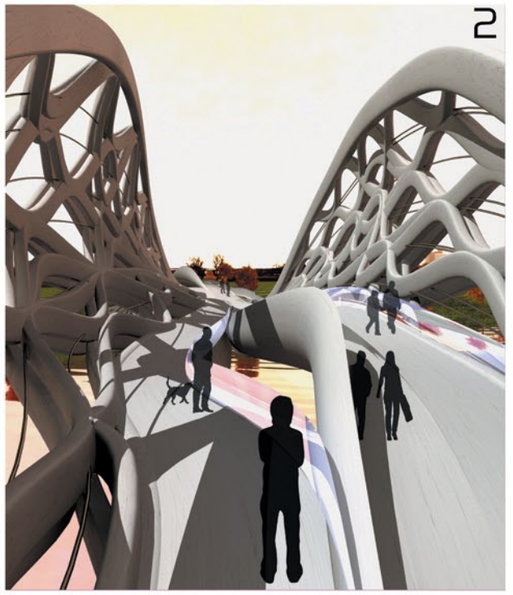
As the system is rigorous in its performance it is not rigid. The potential of change and emerging of unexpected opportunities is encoded in its variability and inter activity.

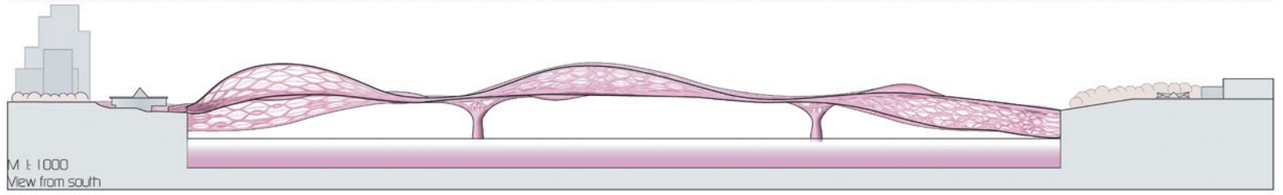
It can be considered as a social project because it emanates from human activities and moods, which are in the same time the desired result. We consider the inhabitant of every city as beeing an activ co-designer of its town. The Meshwork goes into a symbiosis with Cologne and its population.

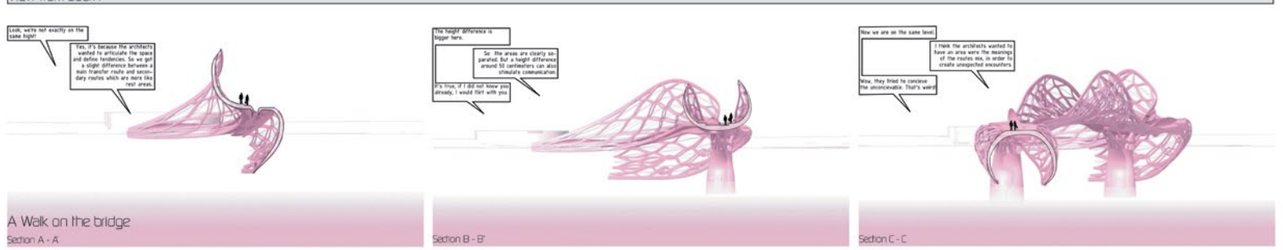
MG III
CONCRETE POTENTIALS

1

2





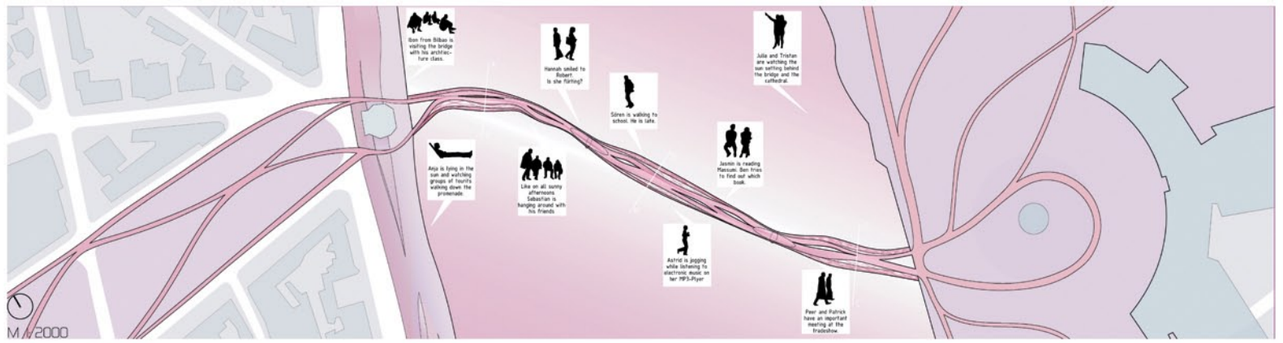


A Walk on the bridge

Section A - A

Section B - B'

Section C - C



PLASTIC OPACITIY

The two most inherent things to a bridge are the passing between a number of points and facilitating different views. The moment of passing is a moment of suspended time – an in between moment. The notion of the FLUID BRIDGE is to tackle the potentials of the generic model by varying diverse situations along its length. Through interlacing, combining or merging the possibilities are being liquefied, blurred to solidify in a moments of unexpected experience.

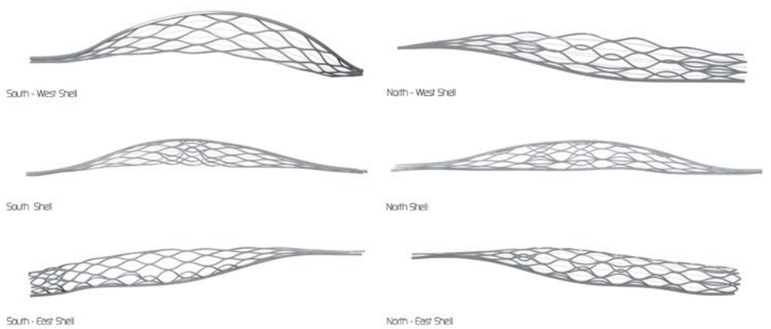
The plasticity of the material and the curvature allows for subtle relations directed by the organisational lines. Along them a new level of complexity emerges by adding a vertical articulation of visual connections and hindrances. The sections are similar in their structural but differentiated in their spatial qualities forming multiple spatial situations.

The different shades of opacity – porous on the outer surface, continuous for the inner structures – respectively create an open connection to the surrounding and intertwine the internal encounters.

The bridge structure is a decorative concrete spaceframe. An analysis of the surfaces helps to map the lattice at the right areas and thicken its lines at the weak spots to offer better support. The finite element solution is beeing translated in an aesthetic language.

MATERIAL

The bridges material is UHPC (Ultra High Performance Concrete) because of its very high durability, its high strength (250 N/mm² under compression (50 for common concrete) tensile strength: 50 N/mm², ten times more restistant than common concrete). This values are due to its high microstructure density and components homogeneity combined with steel fibers which redundantise any further reinforcement. Dead loads are reduced to a third compared to usual concrete, material ressources are economised. This allows much more filiform constructions and thus UHPC is perfectly suited to bridges. First built examples can be found in Canada (Sherbrook bridge, completed) and Kassel, Germany (Niestebrücke, completed, Gärtnerplatzbrücke, under construction). Anyhow their designs do not exploit the materials aesthetic potential.

This already built UHPC-Panel (Size 42cm x 42cm) illustrates the materials tenouos abilitys.

the high number of similar or even identical parts of the elements implies quasi-modular building with panels. UHPC is very well adapted to adhesions with epoxy- or mineral glues. In our project steel cables reinforce the stickiness.