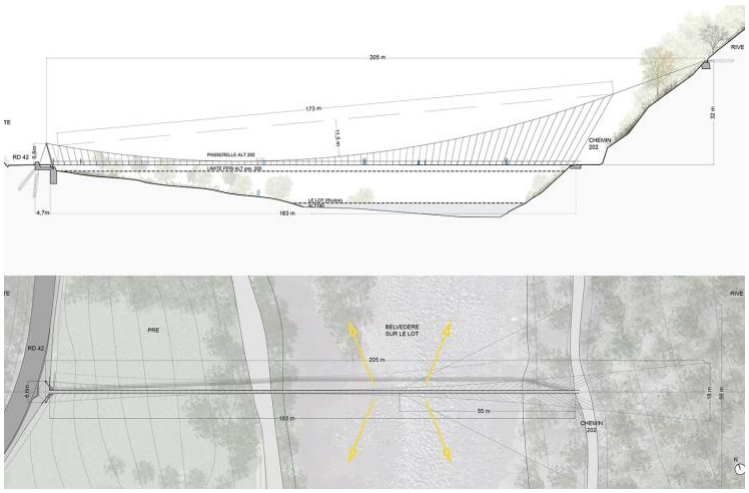

Himalayan footbridge

Location : Saint Parthem (Aveyron)
Architect : T/E/S/S
Client : Communauté des Communes de la Vallée du Lot
Package : Foundations, structure, equipment, shoreline developments
Scope : Structure design
Date : 2016 (concours)

The two riverbanks of the site have very different characteristics: on one side, the river borders the village of Saint Parthem, while on the other, access to the banks is more difficult due to the site being enclosed by steep slopes. The road access and the village are close to the Lot River, but the terrain and dense vegetation create a natural separation from the water. Serving as a new link between these contrasting shores, the new footbridge will offer a panoramic viewpoint over the Lot Valley, highlighting activities such as fishing, swimming, canoeing, and the future restoration of the river's navigability. It will act as a belvedere, providing an elevated observation point over the natural environment.

Design Criteria and Structural Concept
The morphology and structure of the bridge are defined by the following key criteria:

A direct crossing,
A structure positioned above the deck to maintain the PPRI (Flood Risk Prevention Plan) clearance with a 2-meter safety margin,
A strictly horizontal longitudinal profile connecting both landings without interfering with the PPRI level,
A structure fully protected from impacts caused by drifting debris or floating objects during extreme floods,
Pylons with heights optimized for both structural efficiency and proportional integration with the surrounding environment,
Supports and a suspended structure entirely built on land, eliminating the need for any intervention in the river,
A cost-effective and reliable foundation solution,
A lightweight deck stabilized by pre-stressed horizontal cables.
Structural System and Materials
The bridge consists of a constant-width deck, made up of articulated steel modules, suspended from a cable-supported structure. The suspension cables, with a large curvature radius, are anchored on the right bank to two steel pylons, marking the entrance of the footbridge upon arrival from the village of Saint Parthem. On the left bank, the main suspension cables are anchored at a high point within the rocky outcrop via a metallic support structure.

The bridge design integrates the site's asymmetry. The suspension cables gradually rise from the right bank towards the rocky outcrop on the left bank, forming an optimal sag. The arrangement of suspension rods follows a radial pattern, emphasizing this asymmetry.

With no supports in the river, the bridge avoids any impact on the river's ecosystem, aside from the removal of a few trees. The footbridge extends over the right bank, but its porous deck will allow vegetation to be preserved.

Due to its lightweight structure, the bridge will not create a visual barrier within the landscape. The abutments will be integrated into the access structures, minimizing their prominence to reduce their impact while respecting the site's environmental constraints.