# Infrastructural Link - Fgura

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This project proposes a new infrastructural link to replace the existing road which spans Wied Blandun, Fgura. By constructing a bridge to replace the existing road, the valley floor can be rehabilitated, where all current road construction is removed. Thus, the link between the public garden and the rest of the valley can be restored. For the given central span of 120m, the most efficient bridge typologies were the arch bridge and the cable stayed bridge. Preliminary span to depth ratios for beam bridges were also considered, which resulted in deck depths of around 4m. which would result in a very stocky deck profile along the deck and as such, would obstruct the overall view of the valley. A number of arch bridges and cable stayed bridges were conceptualized, where the final solution was chosen to be a twin pylon cable stayed bridge, due to it having the least overall pylon height and it being more relatively simpler to construct, since the large sections will only be present at two locations (pylon positions) and not along the total length of the bridge. Thus, once the pylons have been erected, the deck can be assembled and cantilevered out in modules equal to the cable spacing. Furthermore, the cable stayed bridge option was considered to be the most ideal since it causes the least visual disturbance to the valley, since vertical structural elements are being used rather than longitudinal elements which would need to span across the whole width of the valley. A cable spacing of 10m allowed for the use of a ladder deck construction which reduced the complexity and overall depth of the deck. This allowed for a sleek deck profile along the valley, minimizing the overall visual impact. The deck is to be supported on either side by stay cables such that the deck remains torsionally rigid by transferring any disturbing forces as additional tension into the stay cables.