

# CAMPUSBRÜCKE OPLADEN - APPLYING SUSTAINABLE DESIGN STRATEGIES WITHIN CHANGING CONSTRAINTS

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## Summary

Footbridges facilitate pedestrian and cyclist travel which can promote a shift towards greener means of transportation and thus reducing carbon emissions. Facing the challenges of climate change, further steps in the reduction of waste and carbon footprint must be taken, by addressing the structure and construction method itself.

The Campus Bridge in Opladen, Germany, is a 100m long footbridge crossing a major multi-track rail corridor. The bridge, and its equally long access ramps, was developed following a selection of approaches recommended to reduce its impact on the environment. This includes easily recyclable weathering steel, clamped and bolted architectural fit-out elements, the intensive use of habitat-friendly gabion walls as an alternative to concrete retaining walls, and the preference of landscaped embankments to elevated access ramps. The bridge was built in a temporary condition in 2013, awaiting the urban developments on both ends to catch up, including the removal of a two-track rail corridor requiring a temporary extension of the bridge and a temporary access ramp. For the final set-up between 2018 and 2021 elements of the temporary ramp have been re-used for the final ramp and one bridge span has been re-adjusted to accommodate the new, shorter gradient. The paper will provide a case study discussing how the re-use of building components can be integrated in the design process to respond to varying constraints in order to reduce waste and save cost.



*Fig. 1. Elevation view of Campus Bridge in intermediate stage; photo: Wilfried Dechau*

**Keywords:** Sustainability, Re-use, Recycling, Aesthetics, Architecture, Weatheringsteel, Rail, Gabion, Carbonfootprint, Waste