



Project Fact Sheet

Refurbishment of a road bridge Vyskov



PROJECT

Project	Refurbishment of a road bridge Vyskov
Employer	County Council Usti nad Labem
Date of installation	04/04/2011 – 08/04/2011
Designer	Dipont s.r.o.
Contractor	Joel s.r.o.
Scope	Construction of a new road bridge over a live double-line rail without any possession

FACT FILE

Structure	Precast arch combination 91 wall x 145 roof
Span	15,3m (clear)
Height	8,8m (clear)
Length	22,5m as 9 rings by 2,5m + bridge wingwalls from

DESCRIPTION

The road bridge carries over a 2nd class road over a double rail electrified track. The existing bridge structure was a three span bridge of precast pre-stressed beams of the length 30m sitting on in-situ columns. During the inspection of the structure it was found that mainly the lower part of the bridge was in very bad condition. Also the waterproofing layers, bridge bearings and expansions joints were heavily damaged, i.e. the typical critical, and from durability point of view weak, points of a bridge structure of such kind. Based on the facts above the employer and the consultant have decided to demolish the existing bridge and to build a new structure rather than to pursue initially considered refurbishment of the old structure. The employer and the maintenance authority have chosen a maintenance free buried system from ABM. Those systems don't have any movable parts like bridge bearings or expansion joints. The waterproofing layers are protected by deep soil cover thus providing the maximum possible lifespan to the materials. Some improvement is also expected in relation to the nearby housing area as the new structure will not produce the well known unpleasant sound of cars running over bridge expansion joints. Another advantage of ABM systems was the possibility to erect the structure without any disturbance of the traffic below the bridge – be it road, or as in the case of the Vyskov bridge, rail traffic. After the approval of the idea ABM together with the consultant produced the design of the new bridge from precast arch system consisting of 91m wall in combination with 145m roof providing clear width of 15,3m and height 8,8m. The width (or length) of the bridge is 22,5m and allows to carry over a road category S9,5 (i.e. 9,5m between road barriers) plus on one side a meter wide paving for pedestrians. Four perpendicular wingwalls formed from the standard wall elements make the end treatment of the bridge structure. The bridge is on 67deg. skew so one little spandrel wall is used on each side of the structure to hold the backfill in place. The installation was done with the help of a 350t crane only in 5 days without any rail possession required on the rail. Only the speed was limited to 25km/h and the power lines were switched off during the working hours.



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Sat photo of the old 3 span bridge



Sat photo of the new arch bridge



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