

Cold-bent laminated glass and steel canopy for a bus station next to Amsterdam Central Station

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Summary

Construction of a new bus station has started on the waterfront behind Amsterdam Central Station. The finished canopy will be 360 m long and 63 m wide, and consists of steel arches. The arches are interconnected by purlins and covered mainly with a new material: cold-bent laminated glass panes. Cold-bent glass makes it possible to build a roof of this size to a limited budget. Not only is the glass itself cheaper than some other materials, but bent glass panes can be thinner, reducing dead weight. Furthermore, cold-bent glass can follow any deformation in the structure easily and the joints between the long, bent (unfacetted) glass-carrying profiles are simple. The glass detailing also ensures safety in the event of a fire. This paper presents the advantages of cold-bent laminated glass over traditional glass and plastics, and demonstrates that cold-bent laminated glass makes it possible to build a very elegant station canopy at an affordable price.

Keywords: Cold-bent laminated glass; daylight; glass; public transport; public quality; roof; station; steel; structural design; canopy.

1. Introduction

Amsterdam city council has commissioned a canopy for IJsei bus station, on the Amsterdam waterfront behind Amsterdam Central Station (Fig. 1). Work has already started on the canopy, most of which is transparent, and three-quarters of the length is complete (Fig. 3). The finished canopy will be a 360 m long, 63 m wide steel structure supporting cold-bent laminated glass panes (Fig. 2).

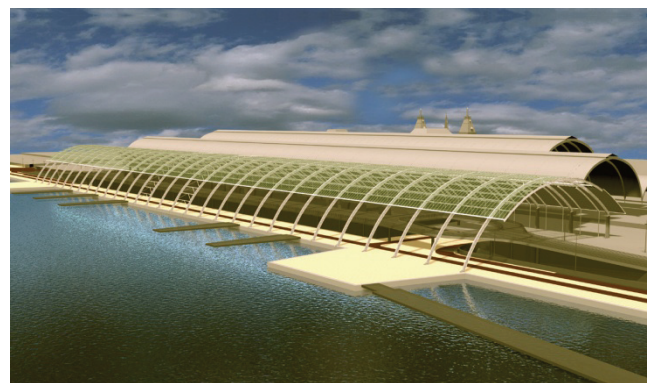


Fig. 1 Aerial photo of Amsterdam Central Station before construction of the bus station. *Fig. 2 Artist's impression of the canopy.*