

RAILWAY STATION FOR EXPO 2000 Hannover (Germany)

NEW BUILDING

Client: ÜSTRA Hannoversche Verkehrsbetriebe AG

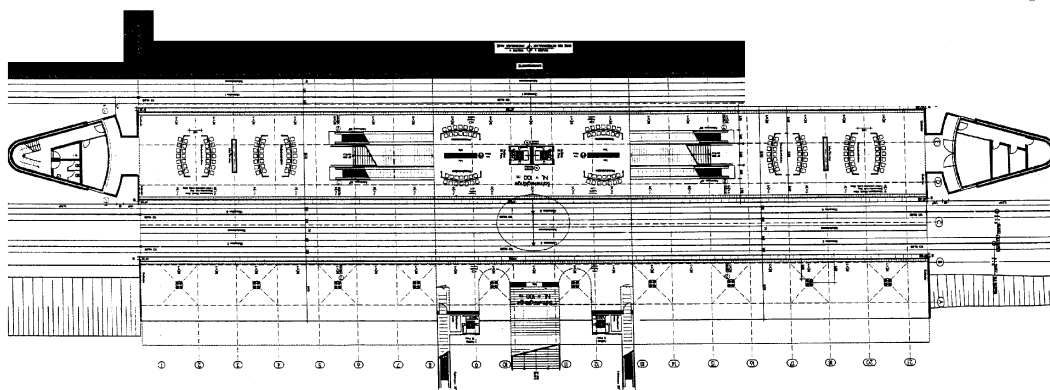
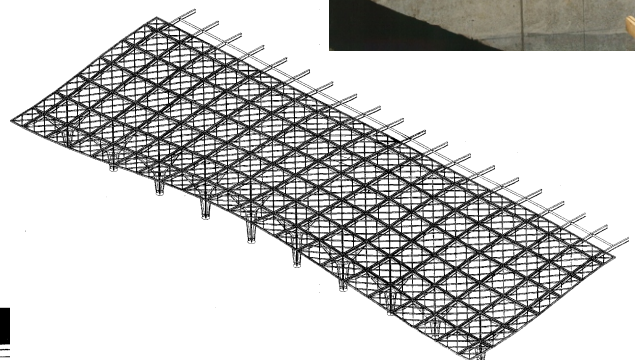
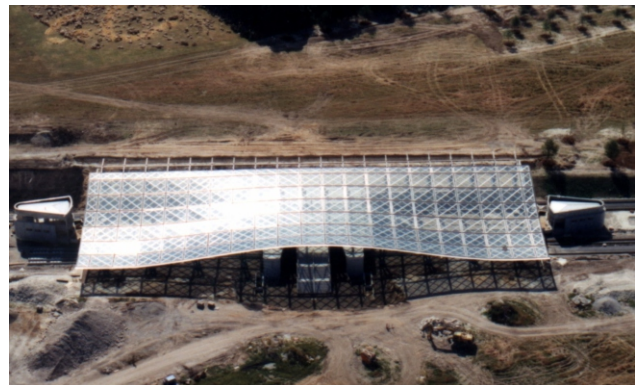
Architects: Bertram, Bünemann und Partner,
Hannover

Our services: Full structural design
Establishing the basis
Preliminary design
Final design
Approval documentation
Execution drawings
Preparation of contract award

Brief description: New building of a railway station with steel-glass roof construction

- wide spanning concrete slab platform
- steel structure of approx 3.000 m² with glazing over three tracks
- supported on tree-like steel columns
- feeder level constructed as a reinforced concrete bridge (flat slab design)
- complex geometry
- a cosine function was used to generate respective correct coordinate value for each node of load bearing structure for seamlessly curved surface
- wave-front is described by a full negative period, section through roof is described by a half period
- this form of initial geometry was negatively superimposed by calculated deformation of structure under continuously acting dead load to effectively create exact geometry in its basic state
- due to the roof's curved shape, each square with dimensions 5 m x 5 m is a skew surface
- therefore, the steel secondary construction carrying the glass panes is turned by 45° with respect to main grid
- thus, it was possible to use flat glass panes with square and triangular cuts.

Completion: 2000



Pictures / Illustrations: ProfessorPfeiferandPartner PartGmbB, Bertram, Bünemann und Partner