Project identification

Freight Traffic tunnel under runway 06-24 Schiphol

Type of project

Cut & Cover tunnel: "wall-roof" method

Client

N.V. Airport Schiphol
Schiphol Project Consult

In co-operation with

Project assignment

Project studies, studies on most suitable construction method in relation to duration of blockage of runway 06-24. Preliminary design, final design, preparation of contract documents.

Country
The Netherlands

Location
Schiphol Airport

Project duration
1993 - 1997

Project phase
Completed

Construction cost
€ 22.690.000,=
(excl. VAT)

Consultancy fee
€ 660.000,=
(excl. VAT)

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Project description

As Schiphol continues to grow, so does the need for proper freight handling. Schiphol Group initiated a new area for handling freight operations, and asked Tunnel Engineering Consultants to provide a project study and design for a new freight handling area located just south-east of the runway 06-24. To connect the new freight area with the center of Schiphol, a tunnel was built. The tunnel has a width of 13-m and a total length of 850-m, with an enclosed tunnel length of 550-m.

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The tunnel crosses the runway and two taxi-ways. At the northern entrance of the tunnel, a connection with an existing tunnel, running perpendicular, had to be constructed. In order to reduce the time in which the runway 06-24 is not in use, in relation to construction costs, a number of construction methods were evaluated. Amongst these different methods, are the cut & cover method, an immersed tunnel, a bored tunnel, and the “wall roof” method.

The method that appeared to be the most suitable was the “wall roof” method. This is a method in which the walls and the roof of the tunnel are constructed first in order to restore the runway as soon as possible; after this, the soil in the tunnel is excavated and the base slab of the tunnel is constructed. The walls are made up of steel tubes with sheet-piles in between (combi-wall). The roof is made with pre-stressed prefabricated beams and the base slab is made up of reinforced in-situ concrete.

Scope of work

- Studies of construction methods, with cost estimates and time schedules
- Civil design calculations and drawings (preliminary design, final design)
- Contract specifications for a Design Bid Build DBB contract as well as for a "design and build" contract
- Electrical and mechanical installations