

HSL-Zuid: harmonization and design

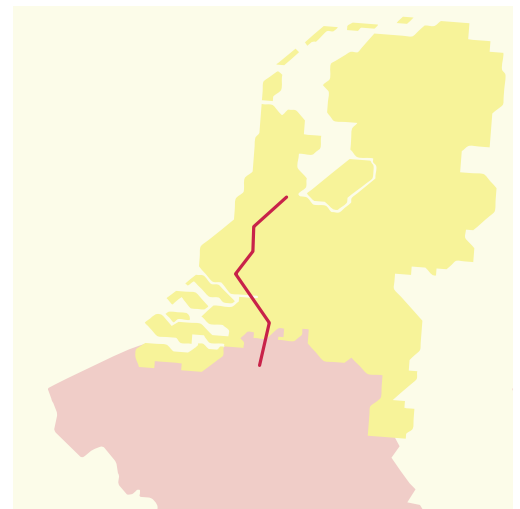
The High Speed Line is a project of 'Rijkswaterstaat', a department of the Ministry of Transport and Public Works, and runs from Amsterdam to Schiphol, Rotterdam, Antwerp, Brussels and Paris, with connections to the Hague and Breda. The High Speed Line connects the Netherlands with the European network of high-speed lines.

As the infrastructure manager ProRail is responsible for the capacity, reliability and safety of the High Speed Line. ProRail also manages the unique Design, Built, Finance and Maintain contract with consortium Infrasppeed.

Harmonization and design

The HSL-Zuid will feature prominently in the landscape in some places. The line expresses respect for its surroundings, as guaranteed by the 'Design Master Plan'. The plan includes a number of functional, aesthetic and ecological principles which stipulate that the negative effect of the HSL-Zuid on its surroundings must be minimised (also visually). For this reason, the transparent and narrow line runs parallel to the existing infrastructure in many places. To keep fragmentation of the landscape to a minimum, the track has been optimally harmonized with the existing infrastructure. In addition, measures have been taken to integrate the line with the natural environment, such as:

- Transparent viaducts, which leave the view of the landscape intact. Examples are the Haarlemmermeer Polder viaduct (long and transparent, in keeping with the open character of the landscape) and the transit rail viaduct at Bleiswijk (where the broad spans of the longest viaduct in Europe leave the surrounding greenhouse area undisturbed);
- Tunnels in order to leave areas as intact as possible. The 7-kilometre long Green Heart bored tunnel spares this valuable area of natural beauty. Boring the tunnel has left this unique Dutch landscape undisturbed during the construction phase;
- Tunnel buildings which subtly conceal the high speed line in the landscape;
- City ducts (100 metre-wide viaducts accommodating a green area, bicycle paths and footpaths) cover the tunnel buildings in two places at Breda-Prinsenbeek;
- Ecological tunnels, culverts and grids allow animals to follow their trusted migratory routes.



Environmental compensation

Unfortunately, it is impossible to construct a new railway line without sacrificing nature. The HSL-Zuid will compensate for the disappearance of these natural elements by creating new natural or wildlife areas, for example.



Recognizable

To emphasize the innovative character of the HSL-Zuid, the designers have opted for a high-tech appearance: silver-grey steel and futuristically styled overhead wire masts. Here, 'form' naturally follows 'function' and the emphasis is placed on modernity and transparency. The HSL-Zuid must be recognizable and this is achieved by ensuring that visible structures (the sides of the rail-bearing construction, sound barriers and other civil engineering structures) look roughly the same along the entire route. The coherent aspect of the line must also be applied to its immediate surroundings: fences, electricity stations and tunnel buildings are also visually harmonious. For example, the sound barriers and balustrades all have the same, slightly inward inclination along the entire route.

Civil engineering structures

The HSL-Zuid track is approximately 100 kilometres long and consists of 170 civil engineering structures, such as viaducts, flyovers, dive-unders, bridges and tunnels. Each one of these 'feats of technology' is responsible for ensuring that the high speed trains can travel safely through, over and under the densely populated west and south of the Netherlands.

More information?

For more information please visit www.prorail.nl or call ProRail public contacts on 0900 776 72 45.

'**Harmonization and Design**' forms part of a series of leaflets in which ProRail informs you about the HSL-Zuid. The other titles are: '**Innovation and Safety**' and '**Management and Operation**'.

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