

Name of the project: Cycling through the Heathland in the Hoge Kempen National Park

Architecture offices involved in the design: Maat-ontwerpers in collaboration with Bart Lens

Project location: Weg naar Heiwick, Maasmechelen, Belgium

Commissioner: Visit Limburg

Structural engineers: Witteveen+Bos

Design year: 2017

Year Built: 2019-2020

Opening date of the bridge July 2021

cubic meter of wood circa 230 m³ azobe support construction, circa 60 m³ softwood wall panels

Surface of the project Bridge Deck circa 1000 m²

Wood construction company Wijma Kampen (subcontractor of Besix)

Construction cost 3.061.346euro BTWe

A cycling path through the heathland

The National Park in the Belgian province of Limburg is a unique nature reserve where more than 12.000 ha of forest and heathland are managed and protected. Extensive pine forests alternate with purple flowering heathland, large ponds testify to gravel and sand extraction and high peaks offer great views. Moreover, numerous rare and special animals live in this natural setting. The area stretches across different municipalities. Cycling through the heathland was initiated by Visit Limburg as part of the 'Cycling Synergy' strategy. The project was developed in collaboration with the province of Limburg, the Flemish government, the Agency for nature and forests, Regional Landscape Kempen and Maasland (RLKM) and the municipality of Maasmechelen.



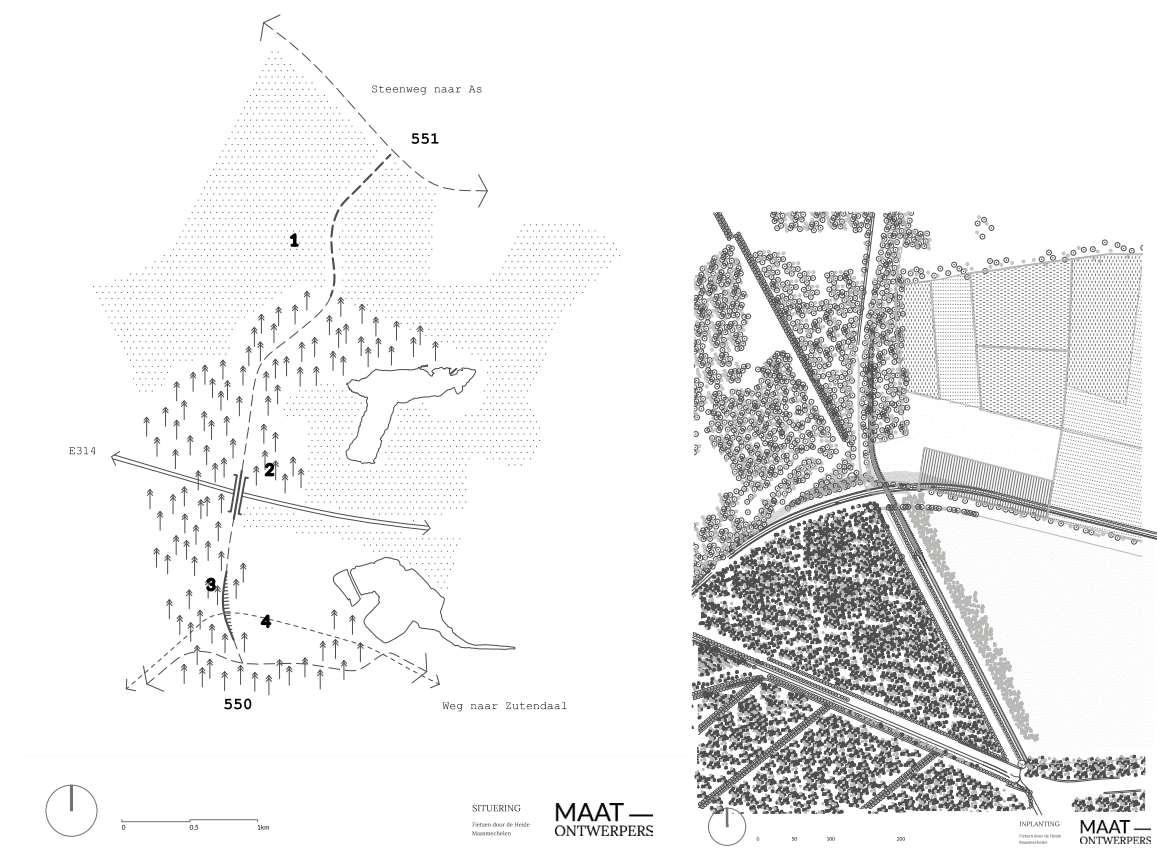
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→ a cycling path through the heathland

Four parts

The project Cycling through the Heathland is a project in which the defragmentation is coupled with a new unique way to experience the National Park with respect to its fauna and flora. The project Cycling through the Heathland consists of four parts.

- First the road is closed for road traffic and transformed to a bicycle path.
- Second the original bridge over the national road that is transformed to a via eco-veloduct.
- The third project was the building of the bridge and completion of the missing link to insert the new experience in the existing bicycle network – the connection between node 551-550. The bridge was conceived as a beacon in het landscape with respect to natural values of its context and a small reference to the mining past of the area.
- Finally, the reduction of the road surface of the Weg naar Zutendaal ensures that a zone of 3,700 m² is once again part of the ecological landscape.



→ The bridge is one of the four parts of the project Cycling through the Heathland.

Bicycle experience

The bicycle bridge is part of 'Cycling through the Heathland', a cycling experience route right through the Hoge Kempen National Park. In addition to a safe intersection with the road, the concept, integration and architecture of the bridge focuses on the experience of its users, on the bridge as an object in the landscape and on the ecological sensitivities of the area.

The bridge design offers a unique view of the heathland and, with the high walls, builds a tension in the run-up to it. Due to this changing experience, the bridge as a whole becomes an experience object.

The bridge is also conceived as a tourist-recreational object on the border between the dense forest and the open heath. As a strong whole, it is an icon and landmark for the Hoge Kempen National Park, cycling tourism in Limburg and the mining past (through the use of local coniferous wood).



Left: © Frank Ressler / Visit Limburg.

Right : © Kurt Vandeweerd / Visit Limburg

→ The bridge design offers a unique view of the heathland and, with the high walls, builds a tension in the run-up to it.



AANZICHT
Fietser door de Herde
Maasmechelen

MAAT —
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→ sideview of the bridge showing high walls at both ends and the viewpoint at the center of the bridge

Social and cultural challenges

As a public infrastructure, the bicycle bridge explores the stratification that a bridge construction can absorb and breaks the boundaries between architecture, landscape construction, scenography and civil engineering. The bridge's integration and architecture deal carefully with a number of social and cultural challenges.

Object of experience

When designing the cycling experience, the focus was on a scenographic whole. Attention was paid on the experience of the slow user at all scale levels (including detailing). The design illustrates the philosophy of Bicycle Oriented Design. By adding these elements of experience to the landscape, the slow user can experience nature in a different way. All the elements together form a new layer to the existing bicycle network, which is part of the 'cycling synergy' strategy.

Iconic object

The design refers to historical typologies of tourist infrastructure (pier, picket fences,...) and bridge constructions (trestle bridge). The choice of materials is linked to the cultural-historical landscape in which coniferous wood was planted en masse to meet the demand for mining wood.

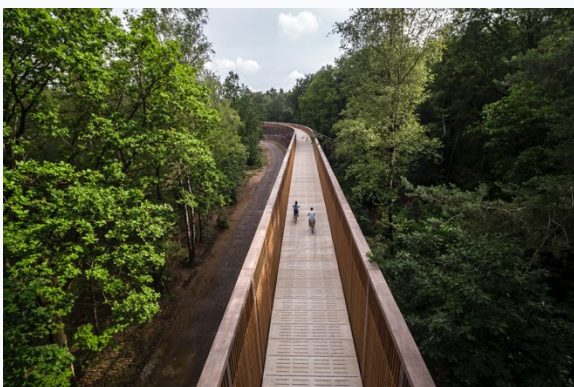
Climate-robust object

The reduction of the road surface of the Weg naar Zutendaal ensures that a zone of 3,700 m² is once again part of the ecological landscape.



© Maat-ontwerpers

→ The choice of materials is linked to the cultural-historical landscape in which coniferous wood was planted en masse to meet the demand for mining wood.



© Frank Ressler / Visit Limburg.

Construction

The support points that carry the bicycle deck each consist of two vertical wooden trusses that rest on concrete foundation soles. The trusses are conceived as standardized elements that can be produced in series. This benefits the progress of the works and reduces the multitude of constructive knots. The walls of the bicycle scaffolding are made of coniferous wood. The material refers to the mining wood used in the underground passages of the coal mines. As such the bicycle bridge has a link with the environment in which it stands: a cultural-historical landscape in which coniferous wood was planted en masse to meet the demand for mining wood.

The construction method of the bridge focuses on rhythm, small spans and prefab elements. This enhances the image but also the coordination with the surrounding landscape. Thanks to the cost-effectiveness of the construction, the entire approach ramps are designed as a bridge. The bridge is thus not a physical barrier and does not hinder the migration of animals.

The deck of the bicycle scaffolding made of concrete floor grids with a width of 3.5 meters is placed between the walls. With the choice of concrete, we are focusing on cycling comfort: the material provides the necessary grip in slippery conditions and ensures a flat road surface with the right rolling resistance and skid resistance. In addition, it is a durable material that requires little to no maintenance. The deck is supported by the wooden structure, with the exception of the span over the Weg naar Zutendaal. Here, for the sake of stability, steel girders are used that are hidden from view as much as possible.

