

Pergola of Máximapark **READY FOR ECOLOGICAL COLONISATION**

Text by Adriaan Geuze
Images as credited/ Courtesy of West 8





PROJECT CREDITS

Location: Utrecht, The Netherlands **Client:** Project Bureau Leidsche Rijn **Máximapark Completion:** 2013 **Pergola Phase 1 Completion:** 2013 **Design:** West 8 (The Netherlands) **Engineering:** ABT, Velp **Process Management:** Project Bureau Leidsche Rijn **Contractor of Pergola Elements:** Ed Züblin AG Fertigteilwerk **Wooden Moulds:** Verhoeven Timmerfabriek Nederland **Foundation and Groundwork:** Van Wijk Nieuwegein **Length of Pergola:** 3.5km **Site Area:** 300 ha

Although the pergola is currently naked, in time it will be overgrown with a verdant cloak of climbing plants along its entire length.

Introduction

In the early stage of the design process for the new 300-hectare-large Máximapark, formerly known as Leidsche Rijn Park, it was decided that the most frequently visited and central part of the park should be framed with an iconic pergola. This decision resulted in the creation of the Binnenhof, a 50-hectare-large green courtyard, framed by a striking 3.5-kilometre-long pergola. The Municipality of Utrecht insisted that these two park elements must meet a high set of standards regarding sustainability, visual quality, and maintenance and have a life span of 100 years. The route and building height of the pergola were also fixed in the zoning plan.

West 8 created a technical and architectural design to meet these conditions, and subsequently permission was granted to procure and construct the first kilometre of the pergola. Over the course of Winter 2011 to Summer 2013, the first phase of the pergola was completed, with climbing plants planted at the base of every column. The pergola functions as a veil that is drawn around the Binnenhof. The legs form gates inviting the visitor to enter. Historical parks have gates and walls. This park shares the same tradition and sense of enclosure, but adopts a more democratic approach: one can enter from anywhere. Some of the legs also feature a small protrusion that double as seating.

Enclosed within the pergola and surrounded by the climbing plants, which are designed to conquer the concrete framework, one imagines oneself in a protected world where the seasons and nature take precedence. Here, children can play safely.

The pergola is one of three park edges, along with a re-excavated meander of the River Rhine and a nine-kilometre-long ecological zone, designed to shield the park from its suburban residential surroundings. The design for Máximapark is the outcome of a design competition held in 1997. The park is essential to counterbalance the inescapable sea of houses. So far, 900 metres out of the pergola's total

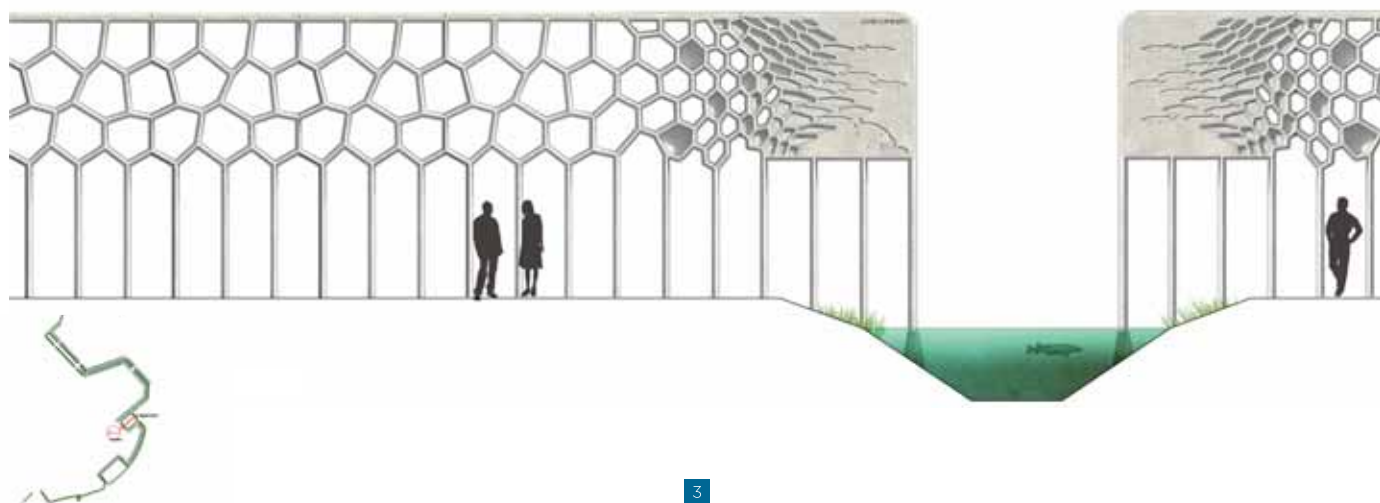
3.5 kilometres have been constructed. Máximapark was completed in 2013 and officially opened by Queen Maxima of the Netherlands, whom the park is named after, in July 2013.

Escher Meets Thijsse

The pergola aspires to the creative work of esteemed Dutch graphic artist M.C. Escher. Each time the pergola, composed of standard elements, crosses a main pathway or waterway, two end pieces are installed to form a "gateway". Every gate has a unique left and right end element, for which individual moulds have been manufactured.

These end pieces combine a "transition element" and an "end element", which mark the path of the pergola. The unique end elements feature an Escher-inspired relief, which sees the honeycomb pattern transform into an animal that is endemic to the park, such as the pike, bat, dragonfly, green frog, and so forth. The transition elements, located between the standard element and unique end element, create a seamless transition between both. They also have a "left" and "right" version, repeated at every gate. The water gates however are special. Their end elements have been lengthened so their legs run into the water. They also allow the creation of a water patio, realised in the first phase of construction.

Beyond the pergola are sports fields, allotment gardens, and other facilities, which are linked by a linear park of flowery meadows called the "Jac P. Thijsse Ribbon", named after the famous Dutch botanist and conservationist. The 12-kilometre-long ribbon is 30 metres wide, with a 15-metre fringe of forest on the outer side, and loops around the entire park. Hikers, cyclists, and skaters can move through it with constantly changing views of the park's scenery. The ribbon provides access to the park from the surrounding residential areas and connects the numerous facilities in the park. It is also the key ecological link between adjacent natural areas and a biodiversity trove.



Section of the Pergola and Water Gates (Image: West 8)

1. Each time the pergola crosses a pathway or waterway, two end pieces are installed to form a gateway, here the Pike Gateway (Photo: Johan de Boer).

2. The completed 900 metres of the pergola are ready for ecological colonisation (Photo: Jeroen Musch).





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Máximapark Plan (Image: West 8)



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6. Artist Impression of the pergola after it is fully colonised by plants and small animals (Image: West 8).

7. The pergola simultaneously encloses and exposes Máximapark (Photo: Johan de Boer and Vrienden van Máximapark).

8. Designed to “enclose” a 50-hectare-large central green courtyard, the pergola winds through Máximapark’s landscape (Photo: Jeroen Musch).

9. Visitors cross the Lilly Pond, which lies in the northern centre of the park (Photo: Jeroen Musch).

10. A temporary bridge over the eastern zone of the Binnenhof (Photo: West 8).

11. The 120-kilometre-long Jac P. Thijsse Ribbon is a closed circuit and pathway around the park with changing scenery (Photo: West 8).

12. A bridge in the western zone of the Binnenhof (Photo: Johan de Boer and Vrienden van Maximapark).

13. Horse riding paths weave their way throughout the park, this one in the eastern zone of the Binnenhof (Photo: West 8).

14. Maintenance of the swamp at the Water Patio by “Friends of the Máximapark” (Photo: Johan de Boer and Vrienden van Maximapark).

In the quieter areas, the honeycomb structure acts as a frame for the placement of special bat boxes, nesting boxes for owls, and substrate bins for rare wall vegetation the likes of ferns.

Cutting-Edge Structural Performance

Unlike other pergola structures made of a combination of wood, brickwork, steel, netting, and steel cables, the six-metre-high pergola is designed as a system of individual but interchangeable precast concrete elements that can be combined to form a cohesive structure. The advantages of concrete in terms of durability and repetition have been fully exploited and the material's possibilities, with respect to its sculptural qualities, have also been explored at length with curves, facets, shadow, texture, relief, and embossing work. By working extensively on moulding and casting techniques and devoting careful attention to the quality of the construction, West 8 sought to push the limits of concrete finishing and density.


A defining element of the design process was the direct collaboration with a prefabricated concrete producer from the outset, which enabled West 8's designers to make full use of their knowledge and expertise. By means of a carefully conceived design, a passionate client, and optimal collaboration with different parties, the pergola was realised in a traditional, almost artisanal, way within the given budget. The resulting precast elements are very slim and extremely graceful. The pergola's silky smooth finish and striking white colour make it soft and touchable, like ivory.

Apart from the use of standard elements (measuring 600 by 330 by 80 centimetres and weighing 3.5 tons), curved elements have also been custom designed and manufactured. As a result, the pergola does not follow a straight line or a square shape. By using both inner and outer curved elements, the pergola can wind through old plot patterns and woodlands. The visitor never gets to see its beginning or the end, as the structure continually disappears from one's perspective. The curved elements also take on a very sculptural quality because the honeycomb structure appears to rotate in the light.

Ecology and Participation

Although the pergola is currently naked, in time it will be overgrown with a verdant cloak of climbing plants along its entire length. Winding vines will climb onto the smooth side of the pergola, while the coarser concrete texture on the inner side, a result of a lava stone additive, will encourage the growth of epiphytic plants, moss, and sedum. The legibility of the "inside" and "outside" of the pergola will help park visitors to orient themselves.

The pergola serves both an ecological and botanical function within the park programme as large collections of climbing plants have been planted along its base. Near the lily pond, a section of the pergola has been specifically designated for rich flowering species, while other parts are "quieter" to create ecological differentiation. In the quieter areas, the honeycomb structure acts as a frame for the placement of special bat boxes, nesting boxes for owls, and substrate bins for rare wall vegetation the likes of ferns.

The pergola creates new opportunities for inhabitants, school groups, and nature associations to participate in the management and maintenance of the natural environment. In this way, it successfully accommodates nature while also making her accessible to everyone. 

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