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Novembre 2021

LIFE Urban Greening Plans

Boulevard de la Woluwe: from a metropolitan road to a parkway. Learnings from a pioneering project

Summary

Transformation of a technical command (infrastructure) into a multifunctional landscape project.

Redevelopment of the urban highway along the Woluwe valley into a parkway:

- implementation of a tram with grassed lanes, bicycle paths and promenades
- reduction of car traffic speed,
- reinforcement of a metropolitan green and blue infrastructure by
 - o the setting up of an integrated rainwater management system,
 - o the development of an extensively managed tree and planted mall,
 - o the integration of a landscaped edge along the N2000 parks that border the river.

This project was one of the first experiences of integrating nature based solutions for water management in a major roadway. It has contributed, even with its fragility, to the initiation of a new culture of nature-oriented public works projects.

Location: Brussels Capital Region

length: 1.75km

right of way : 450 m

Context / urban tissue with heritage park system

Funding: Bruxelles Mobilité – Brussels Capital Region

Project Timeline

2008- 2018; work 2016-2018

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Background information: How was the situation previous to your actions?



Fig1: Boulevard de la Woluwe, 2010 : an urban highway , photo SumProject

The boulevard, which links two major metropolitan axes, runs along one of the main valleys of Brussels, from which it takes its name: the Woluwe valley. It is bordered to the west by large facilities and offices and to the east by the Woluwe River and a series of parks, some of which are classified as Natura 2000.

The boulevard did progressively become a typical 1970s urban motorway, over-dimensioned and heavily trafficked, consisting of 2x3 lanes, with a wide central planted berm, no cycle lane, and lots of parking spaces.

In addition to the usual impacts in terms of noise, visual and air pollution for local residents, there was a major safety problem for users of the facilities (schools, cultural centre, large shopping centre). Due to the lack of a dedicated path, cyclists did pass along the river, putting pressure on this natural area whose biological state was already degraded.

The boulevard is also highly vulnerable to flooding.

What were the needs you identified?

As part of the regional mobility plan, the Region commissions the extension of a major tram line along the boulevard to serve the neighborhood and to connect it to a metro station. The design office commissioned to draw up the plans (SumProject – Sweco and Livia de Béthune,) notes a series of dysfunctions: flooding problems (the tunnel and the surroundings are regularly under water), safety and noise black spots, and a fragmentation of the landscape heritage.

The designers propose to adopt an approach that goes beyond the infrastructural objectives and to connect the project in a systemic way to another important ongoing project: the restoration of the Woluwe river banks and its surroundings, carried out by Brussels Environment (with Eole as landscape studio). It thus plans to transform the motorway into a parkway, in order to restore its quality as a public space, to reinforce the existing landscape continuity, to manage vulnerability to flooding and to transform the road from an infrastructure mainly allocated to the car towards a multiple public space with a new balance between the different users; cars, tramway, bikers, pedestrians and fauna and flora.

What solution did you find to cover those needs?

In accordance with the mobility administration, it has been decided, in addition to the development of the tram and the reinforcement of intermodality, to limit car traffic speed, to set up infrastructures for soft mobility, to enhance the public space, and above all to reinforce the boulevard as an element of the regional green and blue network by enhancing its connexion to the banks of the Woluwe, planting the whole boulevard and integrating alternative rainwater management.

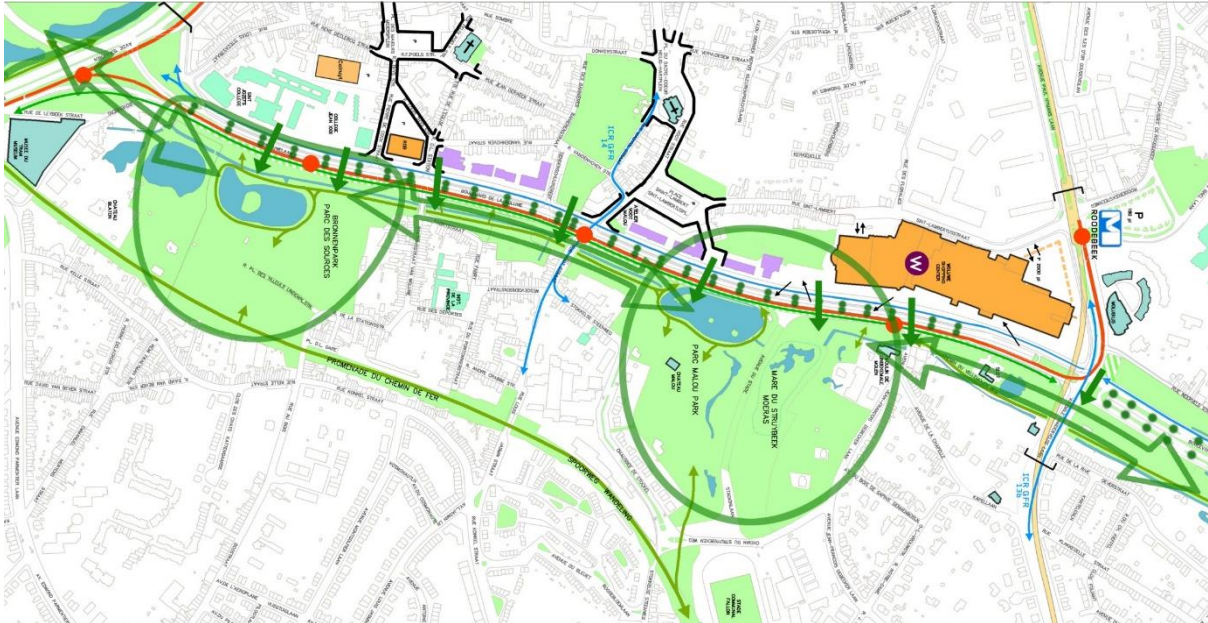


Fig2 : project master plan, SumProject

What actions did you take to reach the solution?

Landscaping work including:

- the planting of alignment trees (*Quercus cerris* and *Fraxinus excelsior*) integrated into ponds with a buffering system;
- the development of extensively managed vegetated areas
- the implementation of the tram with grassed lanes;
- maximization of permeable surfaces (grassed tram lanes, increased green spaces, creation of wadi's collecting the rainwater of the roads.)

Creation of a large cycle path along the tram, as a transition to the promenade along the restored Woluwe river;

Creation of a shared lane on the schools and housing side for local traffic which gives priority to bikers

Reduction of the space dedicated to cars (lanes and parking);

Reduction of the speed limit;

Safe pedestrian crossings;

Requalification of the front squares of the schools: creation of a shared space with benches, a cycle path and local street;

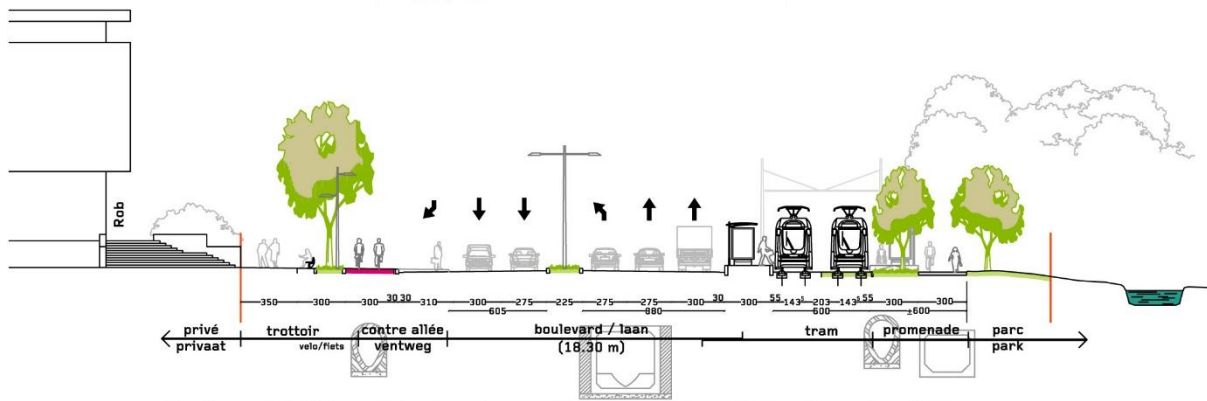


Fig3 : section SumProject



Fig4 : the boulevard after completion, photo Livia de Bethune

If any, which partners or other organisations did you involve during the process?

Brussels Mobility (funding); STIB (public transport company, funding and realisation of the tramway); Brussels Environment (Blue infrastructure project); SumProject – Sweco and Livia de Béthune; the Eole landscape office in charge of the restoration of the river and its surroundings; the local municipalities of Woluwe St Pierre and Woluwe St Lambert; residents' associations during the participation phase; Woluwe Shopping Center.

What were the main problems or difficulties you had to face?

The project is the result of a top-down process, which did not allow the realisation of a more radical project: i.e. the boulevard as part of the park-system of the valley in priority over its traffic functionality.

- The STIB's need for commercial speed prevented the tram line from being located along the schools (where numerous intersections would have slowed down the trams).

- The speed limit has been reduced (from 70 to 50km) but the number of lanes remained almost the same; nevertheless, it has been observed that the reduction in their width and the planting of trees have reduced traffic.
- A major difficulty was related to stormwater management. Bruxelles Environnement had a lot of difficulties in getting the alternative approach accepted, which thus came late in the process. The executors of the works lacked technical knowledge and confidence in the effectiveness of such alternative techniques. Therefore some works were not carried out correctly. As a result their functionality is reduced and some phytosanitary problems are observed in the plantings.

What is the situation now, after your actions?

The previous actions of Environment Brussels on the river banks improved the ecological condition of the river and of the Natural 2000 parks ecotone.

The works on the Boulevard:

- increased the canopy;
- reduced vulnerability to flooding (also thanks to upstream and downstream infrastructural works)
- Reactivated local use (promenade instead of motorway),
- calmed traffic,
- increased pedestrian comfort and safety, with an additional mesh for cyclists and public transport (Tram 9 terminus along the metro station)

As positive indicator we can observe:

- offices transformed into housing as a result of the transformation of the boulevard
- Increase of bikers.



Fig 5 : the new boulevard – rendering, SumProject



Fig 6: The restored river Woluwe, photo posted on Goggle Earth

Main lessons learned along the way?

The key to the evolution of the assignment towards a multifunctional and landscaped project was the interdisciplinary and intersectoral work that brought together engineers, architects, landscape architects and public services (roads, mobility, environment, etc.) and habitants.

Installing a better knowledge of how to construct nature-based solutions of water management would have required an initial investment of time - for the know-how transfer- and more in-depth monitoring of the work. But it would have allowed savings in both implementation and management, and would have ensured an efficiency that remains difficult to measure.

Nevertheless, this pilot experience has enabled the governance method of these multifunctional projects between mobility, public space and nature to evolve. A shift in the order of competence mobilization is taking place in an ongoing project for the restoration of a major district roadway also including a tram line and a bicycle path (Chaussée de Neerstalle, Commune de Forest). The first analyses are related to nature enhancement (water and biodiversity) and their conclusions are the basis for the design of the mobility and public space aspects of the project. A new integrated project culture, shared between different fields (mobility, public transport, local authorities, and environment) is being forged.