

Working with Nature Project database



General information

Name of navigation or waterborne transport infrastructure project	The Seine-Scheldt project in Flanders - The lock of Harelbeke
Country	Belgium
Project location (nearest town or city)	Harelbeke
Key project objectives	The Seine-Scheldt project aims to connect the Seine basin in the Paris region with the Scheldt basin in the region of Antwerp-Rotterdam, for vessels up to ECMT-class Vb (4500 tonnes). In order to achieve this by 2016, the Belgian region of Flanders is preparing navigability enhancements of the river Lys, which currently allows vessels up to 2000 tonnes. In the city of Harelbeke this calibration implies the construction of a new lock and weir together with the restoration of fish migration.
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Position	project leader
Organisation	Waterwegen en Zeekanaal NV

Project data

Characteristics of environment
Inland waterway
Urban
Temperate
No protected areas
Key project dates
Project is not in the planning phase. Date project planning started
Project has consents/approvals. Date approval was obtained
10/07/2013
Project construction not yet started.

Construction start date

Project not yet completed

Type of project

New construction or development

Inland

Waterway

Brief description

Due to the urban environment, the project site has many conflicting goals that highly increase the complexity of the overall project. In order to achieve an integrated project that offers a best fit solution Waterwegen en Zeekanaal NV decided to launch a "Design & Build"-procedure (D&B) for the project in Harelbeke. The contract specified the goals for the project, ranging from spatial quality over technical, hydraulic and nautical merit to aspects of nuisance during execution, durability of the design, planning and overall management. Since the existing weir also needs to be replaced, the aspect of water management and flood control became a very important factor. To solve the problem of fish migration along the river Lys, the contract also asked for the design of a fish ladder to bypass the weir. In general action is undertaken to increase the ecological potential of the river Lys in the urban area of Harelbeke. Natural landscaping and environmentally friendly river banks are only two examples of achieving this. For the design of the overall project in Harelbeke the emphasis was laid on minimising the total Life Cycle Cost of the infrastructure. In order to do so, a hydraulic actuator was installed to achieve an energy neutral project. This actuator serves a double purpose: in periods of high flow the actuator generates electric energy and in dry periods the actuator can pump up the water losses of the lock so that navigation can still be guaranteed. Other important factors in Life Cycle Costing are the cost of downtime of the system and the cost of maintenance. Since the D&B contract lacks the maintenance factor as an implicit quality control, the importance of durability in design could not have been set high enough.

Indicative size

More than 10 million US\$

Working with Nature philosophy

Were steps taken to understand the environment before any work was started on the development of the design of the project?

Yes

In order to design an efficient fish ladder, thorough investigation of fish migration on inland waterways was conducted by the Flemish government. The publication of a booklet on fish migration was the result of this investigation and lead to the definition of the demands for the design of the fish ladder.

Were stakeholders or potential partners involved from the very beginning in the initial process of identifying potential options or solutions and agreeing on a preferred option (i.e. instead of being consulted on already defined options)?

Yes

The Institute of Forest and Nature Investigation (INBO) was involved from the very beginning as the contractual demands for the fish ladder were defined. People from the Heritage department were involved in looking for historically relevant fish migration routes in the area of the Banmolens, a historical mill site nearby.

Was a solution identified which provided a clear 'win-win'?

Yes

A win win situation was identified that offered a restoration of both fish migration possibilities, that in turn improves the natural landscape and the recreational value of the island formed by the inland waterway and the old cut-off meander, and of the historical relevance of the old mill site and its surroundings. The island is reshaped to allow ecological and recreational uses. In general the new lock proved to be the catalysator for (urban) development in the city of Harelbeke.

Was the project designed to work with and make use of natural processes (e.g. 'letting nature do the work')?

Yes

Did the project include benefits for nature or other environmental enhancements beyond what was legally required?

Yes

Legally there is no need for the reconnection of the cut-off meander, but this project offers the opportunity to do so at a low cost, so it was added to the project goals from the very beginning.

Did the project follow, in order, the steps described in the Working with Nature Position Paper?

Yes

The project objectives were reevaluated after the involvement of all stakeholders. This always needs to be the case to get good support for a project where different and often conflicting goals exist.

Reasons/motivation for taking this approach

In order to get a good support for a large project that can create nuisance to people, it is best to attract all relevant stakeholders from the very beginning. This way you can anticipate problems and look for good solutions to prevent the problems instead of just trying to minimize problems.

Cost implications

Costs were not lower than the conventional approach to this type of project (i.e. no cost savings were made)

Additional funds were provided from third parties

Extra costs compared to conventional approach

Costs were marginally or significantly higher than a conventional approach to this type of project

The city of Harelbeke invests money in the project to create a more durable and pleasant urban site around the project site. From a heritage point of view, discussion is ongoing on possible third party funding. No end decision is taken as of yet.

The extra cost for getting a more "nature friendly" project can roughly be estimated in the order of 2 million euros. On a project that costs approximately 100 million euros in total, this is relatively low and was considered to be well worth it, taking into account that this creates a much wider basis for public acceptance of the project. Since the project has yet to start, it is possible that in the end the adding of these extra costs from the very beginning result in a net lower total cost.

Percentage of the total cost that was an additional cost associated with adopting these elements of Working with Nature

2%

Did existing legislation help or hinder your application of the Working with Nature philosophy?

The approach adopted helped to meet legal obligations

It is a European Decision that all fish migration problems on inland waterways need to be resolved by 2015.

Some of what was done was needed to meet existing legal requirements; part exceeded those requirements

The landscaping of the island and the reconnection of the old cut-off meander exceeds the legal requirements.

No problems were experienced with existing legislation

The approach was not taken despite legal requirements

Legal requirements did not prevent the Working with Nature philosophy being applied

Further information

<http://www.seineschelde.be/nl/inhoud/harelbeke>

<http://www.facebook.com/seinescheldeharelbeke>