



# QUAI LÉON MONNOYER [141] CONSTRUCTION OF AN OFFICE BUILDING

Offices – New construction

Quai Léon Monnoyer 3, 1000 Brussels

Client: **Elia System Operator**

Architect: **SCA Associated Architects**

Engineers: **Arcadis Belgium, Ibam**

# 13

kWh/m<sup>2</sup> year

Brussels average  
150

U values (W/m<sup>2</sup>.K)  
façades: 0.13  
roof: 0.15



Efficiency 75%  
N50/hr <0.6



4000m<sup>2</sup> PV  
(328,000 kWh/yr)



Free and night cooling, sun protection  
Public transport nearby, bicycle parking, parking for



Indigenous plants, reed bed



Storm water tank (lagooning), 3 rainwater cisterns 60m<sup>3</sup>



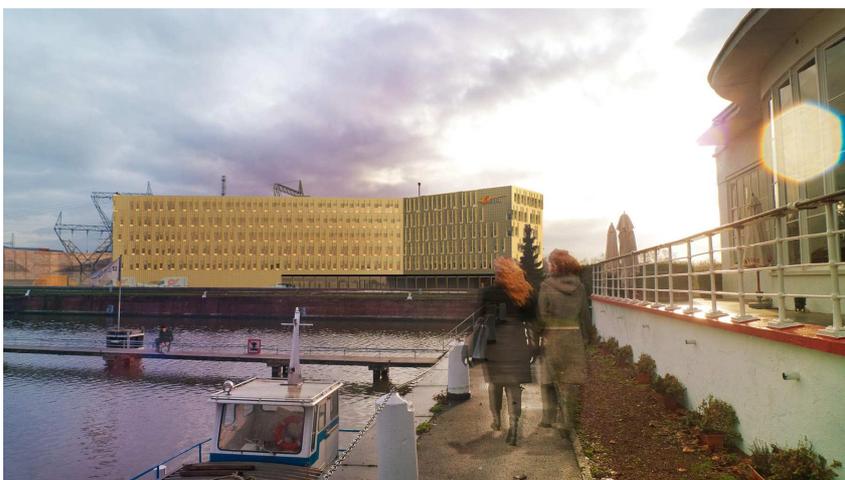
Cellulose



Waste management C according to BREEAM, water treatment



Acoustic glazing



The Elia System Operator company is going to build an exemplary building on its Schaerbeek site that will also highlight two other labels; the building will fulfil the passive standard following the PHPP software, and should also be BREEAM certified. The latter label, which stands for **BRE Environmental Assessment Method**, is a method of evaluating the environmental performance of buildings developed by the British research organisation BRE (**B**uilding **R**esearch **E**stablishment). The simple and compact building will extend in the shape of a V along the canal to offer varied views. The structure will be composed of a simple assembly of columns and concrete slabs. In front of the columns, the façade - a curtain wall - will be attached to the structure. This curtain wall will be formed by an assembly of superposed side-by-side box sections, into which the triple-glazed window frames will be incorporated. The framework for these box sections insulated with cellulose will be made of wooden joists, enclosed by an OSB panel on the inside and a wood fibre panel on the outside. Cooling needs will be limited thanks to systems limiting overheating: awnings, vertical sunshades, concrete ceilings left exposed to take advantage of their inertia, and free and night cooling.

## IN FIGURES

Gross area	9939 m <sup>2</sup>
Handover	Sept. 2013
Construction costs, VAT / grants excl.	1449 €/m <sup>2</sup>
Exemplary building grant	286,710 €

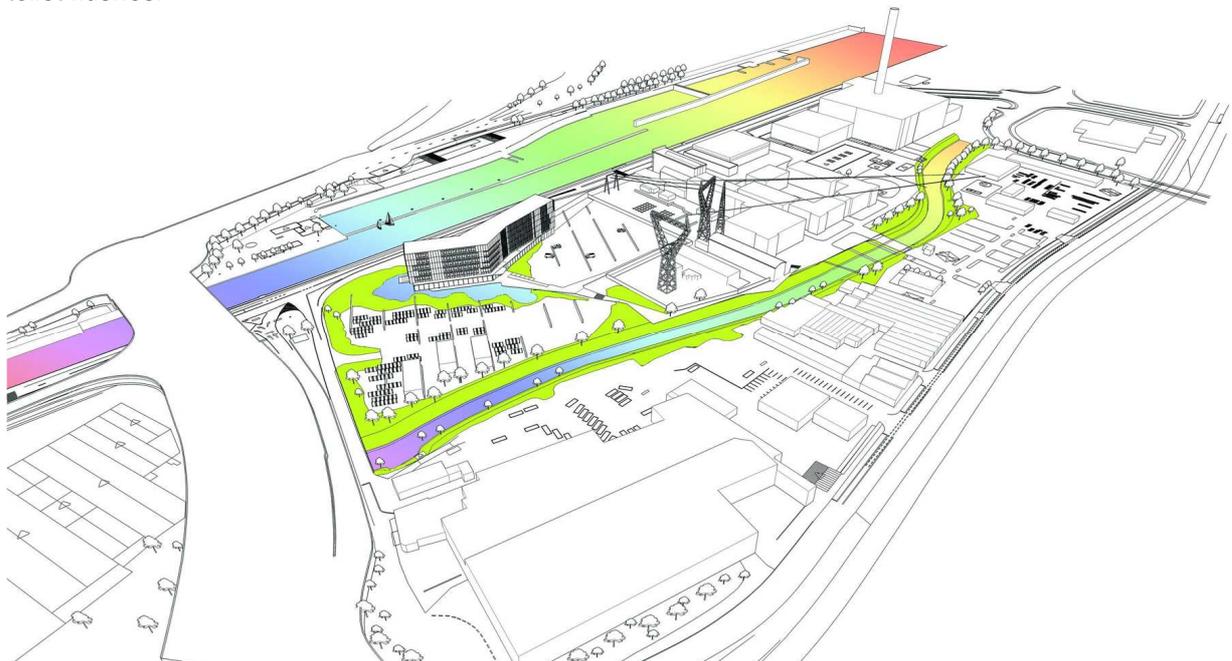


## PV ELECTRICITY PRODUCTION

On the large grounds available around the building, a car park of 194 places will be created for employees and visitors. The 4000 m<sup>2</sup> car park will be covered by a lightweight structure of pitched roofing. The sections with northern exposure will be composed of polycarbonate panels and the sections with southern exposure, covered by photovoltaic cells. An electrical production of 328,000 kWh/year is expected to supply the building. The electric cars of the company could be recharged by the facility.

## MANAGEMENT OF RUNOFF WATER

The soil is currently polluted over the entire parcel. To prevent infiltration of rainwater into this polluted layer and its movement into the groundwater, Brussels Environment has asked the client to pour a concrete slab over the entire site. This slab will make the ground totally impermeable and could thus cause peripheral flooding. The water from the roof will therefore be recovered and stored in three cisterns of 20,000L each. This water will serve to supply the toilet flushes.



Almost no drainage network exists near the building; the client will therefore treat wastewater on-site. Wastewater and lavatory water will be discharged into a septic tank. Then the water will be filtered and purified by a lagooning system and will go into a body of water (storm water tank) around the building. Any overflow will end up in the Senne, which bounds the parcel to the south.

Lagooning, also called phytoremediation, is an interesting feature on the site, providing for biodiversity. A wooden pontoon bridge will allow the visitor to gain access to the building by strolling over the body of water.

## ADDED EXTRA

This is not the company's first exemplary building. Already in 2007, in the first call for projects launched by Brussels Environment, Elia built an exemplary office building on this same site. The first project was smaller and in particular less efficient than that proposed now. The experience acquired with this first project has allowed a building with better performance to be designed.

