


# Sanitary block of the Itterbeek Chiro

by [sophie boone](#) / 2022-05-05 00:00:00 / France / 1041 / FR



Extension + refurbishment

**Primary energy need :**  
kWhep/m<sup>2</sup>.an  
(Calculation method : Other )

**ENERGY CONSUMPTION**

*Economical building* *Building*

< 50	<b>A</b>
51 à 90	<b>B</b>
91 à 150	<b>C</b>
151 à 230	<b>D</b>
231 à 330	<b>E</b>
331 à 450	<b>F</b>
> 450	<b>G</b>

*Energy-intensive building*

**Building Type** : Other building  
**Construction Year** : 2018  
**Delivery year** : 2019  
**Address 1 - street** : Plankenstraat 23 1701 DILBEEK, Belgique  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 15 m<sup>2</sup> Autre type de surface nette  
**Construction/refurbishment cost** : 55 000 €  
**Cost/m2** : 3666.67 €/m<sup>2</sup>

## General information

In 2018 Rotor was contacted by the municipality of Dilbeek to intervene in the festival "De Blik van Breugel" celebrating the 450th anniversary of the death of the famous painter Pierre Breugel, in Itterbeek, on the outskirts of Brussels. This festival took place from the beginning of April to the end of October 2019.

Rotor was contacted to **design the pavilion for the festival** ([more information about the pavilion](#)). This project was the perfect opportunity for the commune to highlight the use of reused materials.

It turned out that the municipality of Dilbeek was planning to build, at the same time, a new sanitary block for the members of the Chiro d'Itterbeek (youth organization), their premises being located in an old L-shaped farmhouse in the center of Itterbeek, right in front of the small church of Sint-Anna-Pede. This project could be perfectly combined with the need to provide sanitary facilities for the visitors of the festival 'De Blik van Breugel'. So a **second assignment - the construction of a sanitary block next to the old farmhouse** - came to Rotor. During the design phase, we proposed to the municipality of Dilbeek that we **develop an exemplary project in which we would use a maximum of reusable building materials**. In terms of tendering, this resulted in a design and construction contract for Rotor as designer-contractor, in association with the company CC Autremet. Little is known about the history of the farm where the toilet block was built. The building itself is the property of the Itterbeek church administration, which makes it available to the Chiro of Itterbeek. The sanitary block is the property of the municipality of Dilbeek.

This small building project is therefore an extension of the existing farmhouse, which, although completely new, consists of less than a third of new materials (in % mass). **The majority of the materials are, on the one hand, materials recovered from various Belgian operators and, on the other hand, surplus from construction sites.**

The facade, for example, is entirely made of bricks and joinery of reuse. The interior of the sanitary block is mainly made of reused materials sold by RotorDC. For

example, the floor covering is made of ceramic tiles from a former Everheide elementary school (Brussels region) dating from the 1930s. The sanitary appliances (urinals, toilets and suspended washbasins), the lighting and the mirrors were also recovered, before finding their new destination in this project. The load-bearing structure, both the concrete blocks and the framework and associated thermal insulation, came from site surplus or surplus production. The tiles are surplus from the renovation of a villa in Brussels.

The scale of this project is modest but all the phases of a classic new construction project were carried out (foundations, sewers, shell, plumbing, electricity and interior design). The ambition to work as much as possible with reused materials was therefore explored at all levels. **The objective of this small project was to show what is possible to implement and, at the same time, to identify the main logistical and organizational obstacles that can hinder material reuse projects.** In this sense, the project was also an important learning experience for all involved.

## If you had to do it again?

The construction site went well because the communication between the participants was fluid and easy. The question of materials was carefully thought out beforehand in order to try to use as many reused materials as possible while avoiding the need for the construction company to go and find materials in many different places. A few very specific dealers were therefore chosen. It is important to keep this point in mind for actors who also want to use a lot of reused materials. Site logistics is an important point of attention when working with reused elements. A few points for improvement in the future: Pay more attention to the finishing of the pipes that are to remain visible. Concerning the implementation of the bricks we will try in the future to use a mortar bastard rather than a cement-based mortar. The same applies to the installation of tiles.

## See more details about this project

<http://rotordb.org/en/projects/sanitary-block-itterbeek-chiro>

<https://www.randkrant.be/artikel/bouwwerk-circulair>

<https://opalis.eu/fr/projets/toilettes-pour-le-chiro-ditterbeek>

## Photo credit

Rotor asbl-vzw

## Stakeholders

### Contractor

Name : Commune de Dilbeek

<https://www.dilbeek.be/>

### Construction Manager

Name : Rotor asbl-vzw

<http://rotordb.org/en>

### Stakeholders

Function : Construction company

CC Autrement

<https://ccautrement.be/>

Function : Manufacturer

RotorDC

<https://rotordc.com/>

Function : Manufacturer

Franck

<https://www.franck.be/>

Function : Manufacturer

Gebruiktebouwmaterialen

<https://gebruiktebouwmaterialen.com/>

## Energy

## Energy consumption

Calculation method : Other

Breakdown for energy consumption : We do not have precise information on the current consumption of the building. The building is mainly used on weekends. The consumption is limited to : - sporadic lighting of the 5 lights ; - turning on the ventilation & pump for rainwater ; - use of rainwater for the 4 toilets & 2 urinals ; - use of city water for the 3 sinks.

## Renewables & systems

### Systems

Heating system :

- No heating system

Hot water system :

- No domestic hot water system

Cooling system :

- No cooling system

Ventilation system :

- Single flow

Renewable systems :

- No renewable energy systems

## Environment

### Urban environment

The project addresses the need for new sanitary facilities for the Chiro, which occupies the existing building. The building was designed in brick to best fit into the existing building environment, which is also constructed of brick. As mentioned earlier, two types of reused bricks were used: a yellow industrial brick and a rougher country kiln brick, including a classic version and a finer version. These bricks were laid in successive layers that repeat. The old red brick ensures the integration of the new building on the existing gable of the old farmhouse, while retaining its individuality through an atypical masonry pattern. The layered construction is an allusion to the masonry (sand-lime stone and brick in successive layers) of the Sint-Anna-Pede Chapel on the neighboring site.

## Products

### Product

Franck

<https://www.franck.be/>

Product category : Gros œuvre / Structure, maçonnerie, façade

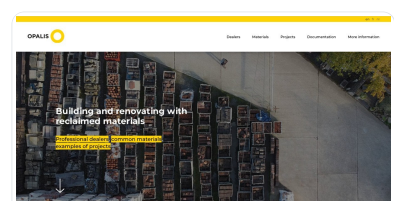


Opalis

<https://opalis.eu/en>

Product category : Autres / Autres

Directory of retailers of reused materials in Belgium, France and the Netherlands.



Franck

Reusable bricks

### Construction and exploitation costs

Total cost of the building : 55 000 €

## Circular Economy

### Reuse : same function or different function

Batches concerned by reuse :

- Structural works
- Structural framework
- Roofing
- Facades
- Outdoor joineries
- Floorings
- Isulation
- Electricity
- Plumbing

For each batch : Reused Materials / Products / Equipments :

**Facing bricks - 30m<sup>2</sup>.**

Three types of bricks were used: a yellow industrial brick and a rougher country oven brick, including a classic version and a finer version. These bricks were laid in successive layers that are repeated. The old red brick ensures the integration of the new building on the existing gable of the old farmhouse while retaining its individuality through an atypical masonry pattern. The layered construction is an allusion to the masonry (sand-lime stone and brick in successive layers) of the Sint-Anna-Pede chapel on the neighboring site.

**Exterior facade lintels - 5ml:** 2 reused steel U-profiles joined together to form a lintel.

**Roof tiles - 20m<sup>2</sup>**

**Exterior woodwork** - 2 doors and 2 windows in wood.

**Floor tiles - 14m<sup>2</sup>.** These tiles come from a former Everheide elementary school dating from the 30s and located in the Brussels region (Evere).

**Wall tiles - 11m<sup>2</sup>.**

**Sanitary facilities:** 4 toilet bowls, 2 Duravit urinals, 3 art deco sinks and a urinal divider.

**Furniture:** 2 bars for PMR and a changing table.

**Lighting:** 5 light fixtures

**Floor & wall insulation:** 43,3 m<sup>2</sup>

**Ceiling insulation:** 18m<sup>2</sup>

**Concrete blocks:** 48m<sup>2</sup>

**Wooden frame:** 49,2 ml

Field of use and material origin :

**Facing bricks** - reuse - purchased via opalis dealer Franck

**Exterior facade lintels** - reuse - purchased via reseller opalis Gebruikbouwmaterialen. Reused steel profiles to be assembled into lintels.

**Roof tiles** - reuse - leftovers from a Brussels building site (donation)

**Exterior joinery** - reuse - bought via reseller opalis Namur Croisade poverty and Gebruikbouwmaterialen

**Floor tiles** - reuse - bought via opalis dealer RotorDC

**Wall tiles** - reuse - bought via reseller opalis RotorDC

**Sanitaryware** - reuse - purchased through opalis dealer RotorDC

**Furniture** - reuse - purchased via classified ads (marketplace)

**Lighting** - reuse - purchased via opalis reseller RotorDC

**Floor insulation** - construction surplus - bought via reseller opalis Gebruikbouwmaterialen

**Wall insulation** - construction surplus/end of stock/quality B materials - purchased via opalis dealer Bouwstocks

**Ceiling insulation** - surplus/end of stock/quality B materials - purchased via opalis Bouwstocks dealer

**Concrete blocks** - construction surplus/end of stock/quality B materials - bought via opalis Bouwstocks dealer

**Wooden frame** - construction surplus/end of stock/quality B materials - bought via opalis Bouwstocks dealer

## Environmental assessment

Impacts avoided : water, waste, CO2 :

**Materials:** thanks to the use of many reused elements and elements coming from surplus of building site or end of stock, the building site made it possible to avoid the production of new material and the impacts which are related to it. The use of end-of-stock materials and decommissioned materials avoided the dumping of this material.

In terms of limiting transport, most of the materials come from the Brussels region.

**Water:** a rainwater tank has been installed to supply the toilets and urinals.

The following impact calculation does not include the PMR bars and the changing table.

Categories	Avoided CO2 (kg)	Avoided water consumption (m3)	Avoided waste (kg)
Outdoor facilities	0	0	0
Exterior fittings / Locksmithing - Metalwork	0	0	0
Carpentry	329.684	3.188056	121.8929603
Partitions	0	0	0
Coverage	316.68	1.6648	174.740227
Roofing / Exterior fittings	0	0	0
Lighting	49.79989167	0.263489159	49.44712877
Safety lights	0	0	0
Climatic engineering equipment	0	0	0
Electrical equipment	0	0	0
Facades	832.17	4.519935	320.988147
False ceilings	0	0	0
False floors	0	0	0
False ceilings	0	0	0
Structural work	799.5339659	5.156268908	2822.925737
Sanitary installations	709.9528965	8.071864726	473.920472
Insulation	901.8775712	11.21286413	307.5790675
Exterior carpentry	69.69763128	0.633247986	86.79619772
Interior carpentry	173.326208	3.49438386	225.0903078
Furniture	0	0	0
Paint	0	0	0
Plumbing	0	0	0
Floor coverings	221.9516576	47.40818975	457.6578169
Floor and wall coverings	0	0	0
Wall coverings	168.0289638	37.24929195	359.5882847
Building security	0	0	0
Locksmithing - metalwork	0	0	0
VRD	0	0	0

	Avoided CO2 (kg)	Avoided water consumption (m3)	Avoided waste (kg)
TOTAL	4572.702786	122.8623915	5400.626347

	Km in a small car	Nb of rectangular bathtubs	nb of years of household waste of a French person
Equivalent	36582	819	11

Equivalent trip from Paris to Nice	42.0
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Sentence to copy below

The reuse operation saved the equivalent of 36582 kilometers travelled by a small car, or 42 Paris-Nice trips, 819 rectangular bathtubs filled with water and 11 years of hou:

## Water management

Installation of a rainwater tank to supply the sanitary facilities (WC and urinals).

### Contest

### Reasons for participating in the competition(s)

This project, through its humble program, is intended to be exemplary in terms of its materiality and the lessons it has generated. It was a question of testing through this project the implementation of a maximum of materials of reuse while keeping reasonable the budgetary and logistic considerations.

The construction was thus carried out with materials coming from 3 different channels:

- the reuse sector ;
- surplus from construction sites ;
- new construction.

Less than a third of the materials are new (in % kg).

In today's construction industry, reused materials and construction surplus are still very rarely used for new constructions and transformations; the materials are usually reduced to aggregates with little value. This modest construction project wants to show that things can be done differently and that the process to do so is not complicated.

### Building candidate in the category



Prix hors-cadre

