



RUE PIERRE STRAUWEN [095] RENOVATION OF SOCIAL HOUSING APARTMENTS

Apartment block - Renovation

Rue Pierre Strauwen 19, 1020 Brussels

Client: LOREBRU sc

Architect: P&P architectes sprl & Atelier d'Architecture AA4

Engineers: SECA Benelux, ERCC sa

29

kWh/m² year

Brussels average
106

$U_{\text{grd.}} = 0.47 \text{ W/m}^2\cdot\text{K}$

$U_{\text{wall}} = 0.23 \text{ W/m}^2\cdot\text{K}$

$U_{\text{roof}} = 0.14 \text{ W/m}^2\cdot\text{K}$



Centralised

$\eta = 85\%$

$n50 = 1 \text{ vol/h}$



40m² Photovoltaic

panels

25 m² thermal panels



Bicycle stands



Rainwater tank



Wood fibre



Garbage area for
selective sorting



The project concerns the renovation of an empty building, built in the 30s, consisting in 16 social apartments. The building itself is part of an island counting 7 social housing blocks, belonging to the company LOREBRU.

Initially, the idea was to create 12 residential units meeting the energy performance of buildings regulation; however, it soon transpired that “very low-energy” units could be created at reasonable additional cost.

And so it was that this project embraced the “Exemplary Building” approach, by using green materials and renewable energies.

Indeed, this renovation will be the starting point to renovate the complete island; not just the apartments, but also the common areas, so as to foster social exchanges and biodiversity.

IN FIGURES

Gross area	965 m ²
Handover	Feb. 2013
Construction costs VAT/ grants excl.	1100 €/m ²
Exemplary building grants	100 €/m ²



COLLECTIVE SYSTEM

This project is part of the larger undertaking to renovate all 7 buildings on the island. Specifically, once the first building has been renovated, the Contracting Authority intends to develop a collective system to heat all the buildings. This centralization will generate enough of a heating capacity to choose alternative energy-production systems, such as co-generation. A feasibility study has confirmed the potential interest of this system, subject to legislation allowing tenants to sell excess electricity to the supply board, and even though the need to sell excess electricity back to the grid is a common requirement, especially in the case of photovoltaic collective appliances, a suitable legal framework does not yet exist. Therefore, the excess electricity could at least supply the local communities, and entitle the project to green certificates.



EART HEAT EXCHANGER

The same idea has come forward with the installation of a centralized earth heat exchanger providing all the buildings.

Specifically, the layout of areas inside the island would be such that a significant earth heat exchanger network could be built at the same time.

This network will consist in 12 capturing pipes, each 20 cm in diameter and 30 m long.

The purpose of this network is to first, preheat ventilation new air in winter, so as to reduce the risk of frost forming in the ventilation unit, and second, cool down new air in summer, so as to minimize the risk of overheating.

According to the engineers, the complete network will recover about 5000 kWh per year for a heat dissipation of 2900 kWh per year.

EXTRA

In order to minimize the heating primary energy impact of the building, the engineers preferred a biomass solution; specifically, pellet-fired central heating.

