DAMES BLANCHES 2023

new garden city of 200 housing units with community amenities



Site
Avenue des Dames Blanches 1150
Woluwe-Saint-Pierre

Client
SLRB - BGHM

Other architects
Atelier Kempe Thill

Structural engineer
WOW engineering

Services engineer
Studie10

Budget
EUR htva

The "Dames Blanches" project involves the development of a new exemplary eco-neighbourhood in Woluwe-Saint-Pierre. It will include the construction of 200 homes that meet the highest ecological and energy standards. This new neighbourhood will also include a nursery, a retirement home and a community centre.

The site is located at the interface between the dense urban landscape of Brussels and the wooded landscapes of the Sonian Forest. As the site has been the subject of intense consultation in the context of the development of its urban plan, taking into account the expectations and ambitions of local residents has led us to propose a true forest city, where the landscape plays a prominent role by providing a framework for innovative and evolving practices in which the new buildings maintain a special relationship with the forest.

The design of the new buildings is based on respect for the landscape and components of the site, preserving the morphology of the relief. This natural topography offers a wealth of spatial situations by multiplying the viewpoints over the vegetable gardens below and the terraces cultivated above.

For each group of dwellings, the project provides for the treatment of the entrances with a gradation gradually follow the slope. This arrangement promotes a domestic scale, facilitates the identification of the dwelling on a human scale and gives each dwelling a certain intimacy. The dwellings favour dual orientation, with spaces that are open to the outside and capable of offering a quality of life and use adapted to contemporary practices. Working or studying at home, between the outside and the inside, between the collective and the individual, between the building and the landscape: these are all parameters that create new forms of urban living. Large bay windows offer unobstructed views and generous lighting.

The concepts of scalability and adaptability are integrated upstream: use of a regular grid, flexible structure, flexible spaces, generous openings, transformation of car parks, etc. From a structural point of view, a timber frame filled with bio-based insulation, such as wood fibre, has been chosen to offer the lowest environmental cost. The weight of the buildings is thus optimised and the lightness of the construction method means that the foundations can be kept to a minimum.

This new neighbourhood also aims to be at the forefront of environmental ambitions: the choice of techniques is based primarily on the use of natural resources as passive technology, i.e. designing housing and facilities that benefit from excellent natural lighting while protecting against overheating in summer.

The project also aims to move away from fossil fuels and construct buildings that are ready for 2050. The energy approach proposed here is both passive and active. Renewable energy sources include the use of photovoltaic panels to convert solar energy into electrical energy, solar collectors for hot water production, hygienic air units with heat recovery, and heat pumps combined with geothermal boreholes for passive heating and cooling of residential units. This fossil-free heat production uses the site (the ground) for energy storage and, thanks to passive cooling, ensures the balance of the ground, so that there is no thermal pollution of the environment. This system offers very high heating comfort combined with low-temperature heating and minimises the risk of overheating thanks to passive cooling.

Finally, the search for reused materials sourced locally in Brussels at an affordable cost and with affordable transport will enable a circular and economical strategy for the entire project. We therefore plan to offer a total of 5% reused materials. The reuse of bricks or faÃ§ade cladding, the construction of terraces and pergolas using reused wood. Ceramic and earthenware finishes are also sourced from local reuse channels.