Ensemble mixte ROOTS Belval

Belval, Luxembourg

ROOTS Belval — A low-carbon mixed-use development at the heart of Belval's regeneration

In Belval, Luxembourg, the ROOTS project is transforming a former industrial site into a new urban development combining housing, offices and retail spaces. Developed by BPI Real Estate and designed by ArtBuild, this large-scale project exemplifies a new approach to urban development: more sustainable, more flexible and centred on the well-being of its users.

The development comprises four buildings, each six storeys high, covering nearly 20,000 m², with 102 homes, office space and retail outlets integrated into a neighbourhood undergoing rapid regeneration. Two basement levels also provide 253 parking spaces.

A mixed timber-concrete architectural approach conceived from the outset

The project is based on a hybrid structure combining concrete, steel and engineered timber. From the first-floor slab upwards, the buildings are predominantly timber-framed, with CLT façades and floors, supplemented by precast concrete elements for certain load-bearing areas.

For **Damien Defoin**, an architect at ArtBuild, this approach is a natural part of the firm's DNA: *"Wood is part of our project culture. We always seek to incorporate it whenever relevant, and it was this proposal that won the competition that led to the project"*

Wood remains highly visible in the office spaces, where the exposed structure helps to create warm, light and comfortable atmospheres.

An ambitious environmental approach

ROOTS was designed with high environmental standards in mind, incorporating timber construction, healthy materials, green spaces and sustainable resource management.

The project is aiming for several major certifications: WELL, BREEAM, LCBI, LENOZ — The development will also achieve an AAA energy rating.

For **Nicolas Dupuich**, lead project engineer at CLE, timber plays a central role in this low-carbon strategy: *"*In the context of LCBI certification, timber is a key factor in reducing the project's carbon footprint *Its natural appearance, its capacity to store CO_2 and the fact that it can be dismantled make it a major asset for the buildings of the future."*

Stora Enso's timber solutions for comfort and performance

Stora Enso is supplying ROOTS with over 3 000 m³ of Sylva™ CLT in both visual and non-visual grades, which are being used for the project's façades, floors and structural elements.

The timber solutions were chosen for their structural and aesthetic performance, but also for their ability to meet the technical requirements of a large-scale mixed-use development.

Responsible for carrying out the calculations and BIM modelling for the project (structural analysis of the building's concrete elements and preliminary analysis of the timber elements), Greisch also developed a hyperstatic composite timber-concrete floor system designed to optimise the structure and reduce the quantity of timber used by approximately 20 per cent. The construction-phase studies were carried out in collaboration with Cambium for buildings 41.1-2 and 4, and with BE Woodshapers for building 41.3.

Support from Stora Enso — including 3D modelling, logistical monitoring and technical support — also helped to ensure the project's smooth development and facilitate coordination between the various stakeholders.

With ROOTS, Belval is welcoming a new exemplary urban development, demonstrating how engineered timber solutions can help create buildings that are more sustainable, more energy-efficient and more pleasant to live in.

More information on

Ensemble mixte Roots | CLE | cle.lu

Roots – Projet immobilier durable à Belval

The Roots - Belval 41 | Art Build

General

Delivery year

Under Construction

Building type

Multi Residential

Area (m²)

20,000

Storeys

7

Units

102

Products

Products and Services

CLT, GLT, Sylva™ CLT Floors and Roofs, Sylva™ CLT Walls

Product quality

VI and NVI

Product volume (m³)

3,200

Product delivery duration (weeks)

20

StoraEnso

Team

Developer

BPI Real estate

Architect

ARTBUILD

Structural Engineer

Greisch

MEP Designer

Six Engineering

Main contractor

CLE

Specialist Timber Subcontractor

CLE

Timber Engineer

Cambium / Woodshapers