THE BIOTOPE

LILLE – FR

SCHÖCK
Dependable by design

As a new urban symbol between the historically turbulent Grand Palais and the institutionally characterised Regional Council in the city of Lille in northern France, a multifunctional corporate headquarters for the European Medicines Agency was created based on plans by Henning Larsen Architects and KeurK architecture, which is now however occupied by the Métropole Européenne de Lille. Located in the middle of the important European business district Euralille, 'The Biotope' shapes the city's skyline with its silhouette.

BETWEEN URBANITY AND NATURE

In constant interaction with the neighbouring environment, a biotope equates to a particular geographical habitat in which the ecological conditions are precisely defined and perfectly adapted to the needs of living beings. This is the definition upon which Henning Larsen Architects from Copenhagen and local firm KeurK architecture based their design.

The result is a modern office building whose shell is shaped by the dual nature of its location, mineral and vegetal as well as urban and human. The frame blocks of the façade align with the path of the sun, ensure a multitude of reflections and support the heat regulation of the building.

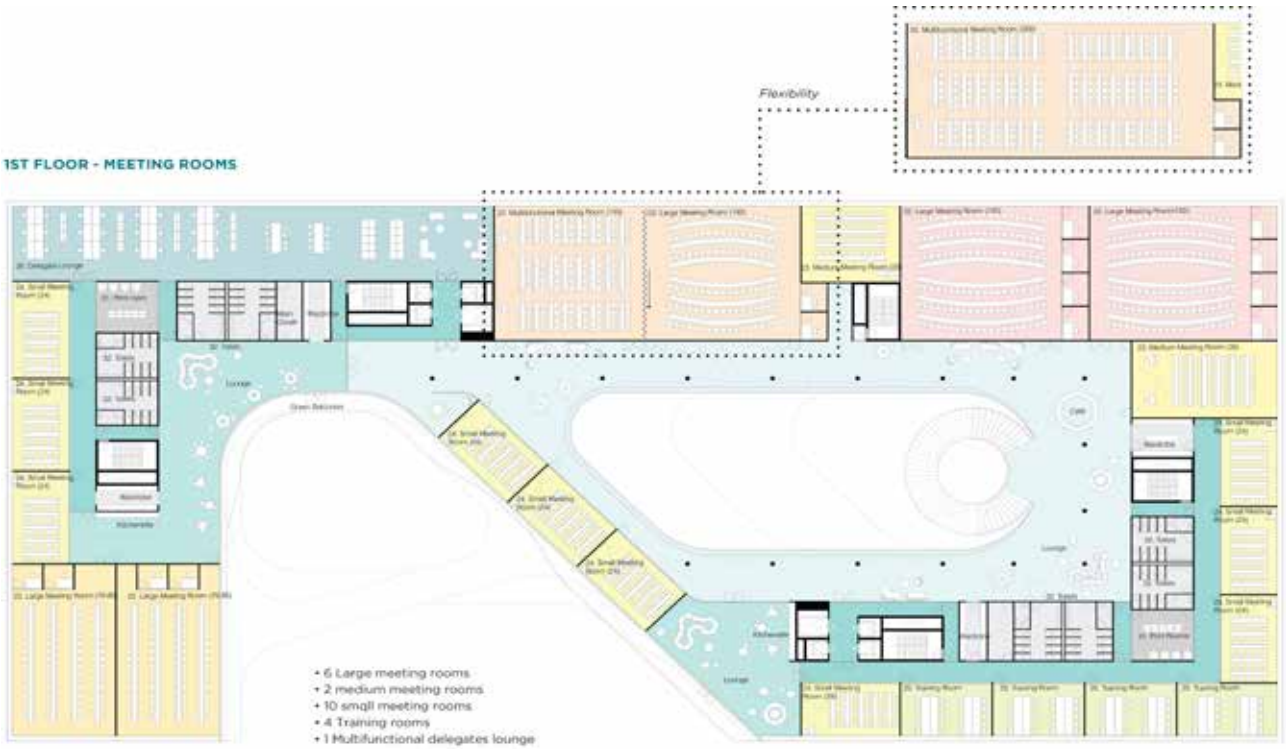
Recesses in the north and south give the building a predominantly east-west orientation. At the top, the floor plan of the eight-storey building is reduced twice in order to make optimal use of natural light. In this way, the monotony of a traditional continuous office façade is broken. The recesses also create a microclimate that supports vegetation on balconies protected from westerly winds. For greater energy efficiency, the various balcony constructions are thermally separated using different types of the Schöck Rutherma® thermal insulation element.

FUNCTIONALITY OVER AN AREA OF 30,000M²

The natural essence of the building is underlined by the wooden cladding in the atrium.

Inside, both users and visitors can expect a wide range of features. On the ground floor is a large reception hall, a 300-seat auditorium, a cafeteria, a bilingual nursery and a room for bicycles, whilst the first floor is dominated by meeting and conference rooms. The offices with team and communal areas are on the second to sixth floors and on the seventh floor there is a restaurant. The technical facilities are located on the eighth floor.

In the atrium, vegetation is brought into the interior of the building.



EVERYTHING IS GEARED TOWARDS THE WELL-BEING OF EMPLOYEES

The heart of the building is the light-flooded atrium with its imposing spiral staircase which rises upwards in a sweeping curve. Numerous open corridors facing the atrium encourage chance meetings and visual connections between the individual floors.

The five office levels have slightly smaller floor plans than the floors below but form spacious terraces with plants that serve as a retreat for employees. Enclosed bridges on different levels span one of the open spaces of the roughly s-shaped floor plan and support the pathways. The room height, the underlying design grid and the ceilings, which accommodate the necessary technology, allow great modularity and flexibility in the use and subdivision of the areas.

The desk spaces are in the open plan office structure along the window walls where they have the greatest supply of daylight and an

URBAN SANCTUARY BETWEEN URBANITY AND NATURE

uninterrupted view of the surroundings. For team meetings or working undisturbed, there are several clusters of meeting and work rooms spread out across each office floor. The kitchenettes and break rooms are situated between the work areas and are both relaxation areas and a connecting element across the whole floor. Like the floors below, the panoramic restaurant on the seventh floor has terraces, gardens and balconies which influence both the ambience and thermal comfort. A café/bar area is being expanded to include the garden terrace, and the solid wooden floor strengthens the connection to nature. On the top floor where the technical facilities are, the biotope idea takes centre stage again with plants, paths and quiet zones laid out like a private garden.

MINIMISE THERMAL BRIDGES AND CREATE SECURE CONNECTIONS

Client
Métropole Européenne de Lille

Architects
Henning Larsen Architects, Kopenhagen, DK
KeurK architecture, Lille, FR

Engineers
Setec, Paris, FR
VS-A, Lille, FR
Groupe Projex, Villeneuve-d'Ascq, FR

Construction Company
Bouygues Bâtiment Nord-Est,
Villeneuve-d'Ascq, FR

Location
Lille, FR

Completion
2020

Size
30.000 Quadratmeter

Schöck products
Schöck Rutherma® T (Type K, Type K-BH, Type Q+Q, Type ESI)
Schöck Querkraftdorn (Type LD)
Schöck Isolink® (Type TA-H)

Photos
Jonathan Alexandre, Lille, FR

With 'The Biotope', the architects wanted to create a building that promotes the health and well-being of its users and at the same time has a positive energy balance and a healthy indoor climate. An important factor in the implementation was the minimisation of unwelcome thermal bridges. In order to get to grips with these, especially on balconies, the load-bearing thermal insulation element Schöck Rutherma® was used, which thermally separates the components from each other and is also part of the structure. Schöck Rutherma® did not restrict the architect's freedom of design because curved shapes, as well as balconies with height offsets and supported balcony variants, can be effectively insulated with this product. Another special feature was the earthquake resistance which had to be guaranteed at specific installation points. This could also be ensured with Schöck Rutherma®.

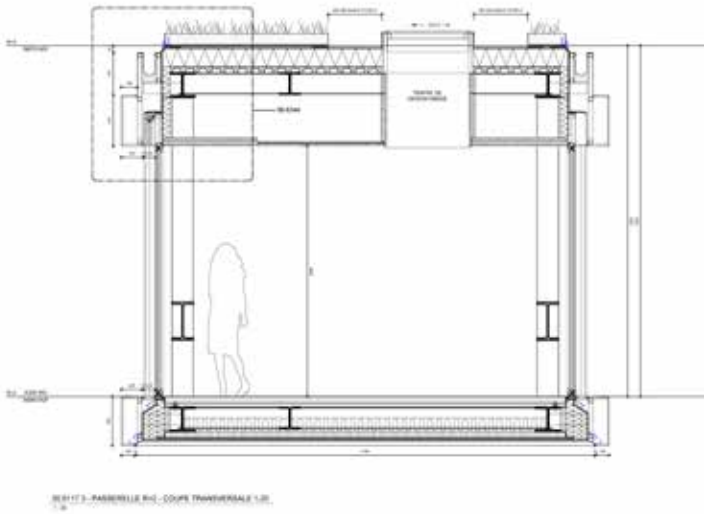
The exterior walls were also designed to be energy-efficient: 'The Biotope' is characterised by a high proportion of precast concrete elements: for example, there are core insulated double walls on the ground floor. There, Schöck Isolink® was used as a spacer and connecting element, where the individual components are reliably separated from each other thermally at these points, and thermal bridges are reduced to a minimum.

On the upper floors, Schöck Dorn (Type LD) was installed to horizontally reinforce the non-load-bearing interior walls. This serves as a safe shear force connection between concrete components. As a result, the transverse forces occurring in the area of the expansion joints can be transmitted without any problems. In terms of design, the useable building area could be enlarged by dispensing with additional supporting structures.

IMPORTANT CERTIFICATIONS FOR A FUTURE-ORIENTED BUILDING

'The Biotope' is designed and built entirely in BIM. The energy-efficient building also meets demanding environmental standards, which is why it has been awarded numerous (environmental) certifications and labels: BREEAM (for ecological and socio-cultural aspects of sustainability); WELL (for the health and well-being of users); BiodiverCity (for conservation of biodiversity in urban areas); E+C- (for a positive energy balance and carbon reduction); and WiredScore (as an evaluation of connectivity).

Overall, with 'The Biotope", the architects have created a sustainable building that impresses with its bright, functional and flexible rooms, ingenious visual connections and a successful blending of inside and outside as well as a clear structure and an optimally integrated climate concept.



Building bridges at different heights connect the individual office floors with one another.

SCHÖCK RUTHERMA® (T Typ K, Typ K-BH, Typ Q+Q, Typ ESI)

The load-bearing thermal insulation element Schöck Rutherma® is particularly suitable for avoiding thermal bridges, and therefore heat loss, damp walls and mould, on cantilevered components. It separates balconies, parapets and canopies and, at the same time, is part of the structure. Be it for the connection of concrete to concrete, steel to concrete or steel to steel, Schöck Rutherma® is available in numerous different variants to effectively prevent thermal bridges.

SCHÖCK DORN (Typ SL)

To avoid cracks caused by thermal expansion or concrete shrinkage, expansion joints must be positioned in long components and constructions. This shear pin connects the components adjacent to the joint without additional construction. This enables the transverse forces to be transferred and the necessary mobility at the same time. Elaborate double walls and brackets are therefore no longer necessary.

SCHÖCK ISOLINK (Typ TA-H)

Schöck Isolink® is made of the glass fibre reinforcement material Combar® and uses its low thermal conductivity. As a connecting element and spacer between the concrete shells within the walls, the façade fixing ensures reliable thermal separation in core insulated concrete façades and reduces thermal bridges to a minimum. The rod is suitable for both supported and free-hanging façades and allows large scale wall geometries of up to 6m x 12m without joints.