PEEK & CLOPPENBURG

1999 – 2005 Cologne, Germany.

At the end of the 1980s, the company Peek & Cloppenburg began assigning the projects for its new branches to major international architects, and in 1999 the company turned to the Renzo Piano Building Workshop for the construction of its Cologne headquarters.
The building, destined to house the Peek & Cloppenburg store, is located in the city centre, not far from the Cathedral of St. Antoniter.
It is situated on Schildergasse, the city's main shopping street, where nearly 13,000 pedestrians pass daily.

The most significant constraint was the presence of the cathedral, which led to a building design that would extend in a predominantly horizontal fashion, much like a greenhouse. Through its large transparent windows, visitors can view the adjacent buildings, including the magnificent cathedral itself.
The commercial district has an area of approximately 22 thousand square metres, 15 thousand of which are public spaces that have been placed at the customers' disposal. The area that acts as the true square, however, is primarily that which opens up in front of the entrance and faces the church itself: a place for tourists and shoppers to stop and take a break.

The building's structure is made up of vertical arc-shaped bands interconnected by a steel structure at a height of nearly 28m, the form of which was determined by the load distributions and the expansion of the materials. The external casing rests upon the frame of reinforced concrete slabs and pillars up to the level of the ceiling above the ground floor. The lattice structure is anchored by support brackets at the fourth storey floor and at the summit. On the lower floors, the ribs are secured horizontally by bracing cross bars. In the southern portion and along the west side, the façade's support structure rests directly upon overhanging brackets, while in the atrium to the north the edges of the floors are recessed by 3.5 to 6 m with respect to the façade itself. The summit of the structure is sustained by pillars and diagonal tie-rods.

The number of planks used for the façade's 66 laminated wood arches was determined according to the dominant stresses. Four planks were used on the uppermost portion, subjected to bending and compression, while 3 were used on the third and second floors, and 2 were used on the first floor. In order to ensure that the laminated wood elements worked in conjunction with the building's frame, each 6 cm-thick curved plank was accurately matched using rigid, sliding, cast-iron connectors. The structure's complex geometry required that the individual components be produced with absolute precision, and the requirement of high manoeuvrability was a must.

The necessity for a commercial edifice of exceptional thermal and luminous comfort levels led to extensive research on the type of glass to be utilized. Having initially been designed

with a double skin, the cladding presented a number of evident technical difficulties due to the form; for this reason, we opted for a monolithic high-performance insulating glass enclosure, using elements of a wide range of sizes. The installations sustain the building's concept of energy efficiency, with a system designed to improve comfort in proximity to the façade. The air extraction vents are located in a strip at the top of the casing, at the building's summit.

With 66 wooden arches forming the frame itself, laminated wood played an extremely important role in the construction of this building. This solution allowed for great spans to be achieved, resulting in ample spaces with flexible functions.
Spaced at 2.5 metres from one another, these arches reach a height of 30 metres, gradually decreasing and resulting in an extremely smooth, soft and lightweight form.
The cladding is comprised of 3,800 slabs of insulating glass. The presence of the curvatures suggested the use of glass modules of different sizes, thus breaking down the facade without applying stresses to any point in particular.
The result is an architectural sculpture in which the enormous dimensions have been lightened with the use of steel, wood and glass, which were also selected for their cost effectiveness and flexibility of use, as well as for the possibility of shortening the necessary construction time.
Inside, the five floors of the mall overlook the large atrium, communicating with both the interior and the exterior in a continuous play of light and reflections.