

ANNEX 3-B

Case study

GERECHTSGEBOUW

(Justice Court)

GENT

Composite construction with main and secondary beams allows fast erection time and column free internal space, which provides maximum flexibility. Fire resistance is integrated in columns through partial encasement.

GERECHTSGEBOUW GENT



The Law Courts Ghent is set at a former freight station along the ring road. The complex set of requirements was moulded into a compact volume: a clear and logical structure composed of three zones.

The entirely transparent public axis functions as a distribution system from the public entrance hall to the clerks' offices and courtrooms beyond, providing the visitors with a clear overview of the structure of the building. The individual judges' chambers are located on the north side, bordering the park with its rows of plane trees. The clerks' offices and courtrooms stretch out between the public axis and the secure office area. Spacious patios separate the three stacked volumes.

A similar simple scheme facilitates the separation of the court building's different users – public, judiciary, and prisoners. Interaction is organized only where specifically necessary. The judges' axis is led around the courtrooms, whereas the public enters through the central waiting spaces. Judge and defendant meet only in the courtroom itself. Meanwhile, the circulation of the judges in their robes is a fascinating sight from outside.

The cutaway volume at the southwest corner orchestrates the public entrance, where an urban plaza

brings together all forms of arrival and departure – pedestrian crossing and tram stop, cycle racks, a taxi rank, a drop-off zone, a bus

stop, and access from the public parking lot. The compact volume leaves scope for the complementary atmospheres of a city park, designed by Michel Desvigne.



Building aspect after realisation in 2006

Application Benefits:

- Long spans in both directions
- Fast erection time
- Columns free internal space providing maximum flexibility
- Integrated fire design through AF columns

Project Team:

- Client:** Regie der Gebouwen
Architects: T.V. Beel&Achtergael
Structural Engineer: Technum
Coordinator: N.V. Rabot Invest, (Besix-Dexia-Interbuild-KBC-Vanhout)
Contractor: T.H.V. Interbuild-Besix-Vanhout



Long span composite beams



Main and secondary beams with partially encased columns

Construction Details:

Heating:

In the office areas, a simple central heating system with mechanical ventilation is installed. The audience rooms are equipped with a fully automatic air conditioning. The principal facades on the border of Opgeëistenlaan street, opening segments are foreseen to provide natural ventilation in the public axes.

Facades:

With black granite, a natural stone was used for the façades, whereas the more one comes closer to zones were public access the building, glass façades are used. As a result the main public space will be entirely glassed and for the office areas granite is used.

Interior:

The internal design with its furniture will remain as neutral as possible with only some hints of color on the walls and furniture.

Structure:

The structure is made of composite beams using main and secondary beams. This allows huge spans in both directions with small amount of interior columns. The non composite main beams are connected via fin plate to the columns. Four composite secondary beams are connected each side to the main beams. They are connected through shear studs to the prefabricated composite planks that spans between the secondary beams.

Fire safety:

The columns are partially encased and need no additional fire protection. After erection of the whole structure, the main and secondary beams have received a spray protection.



Spray fire protection

Key figures:

- | | |
|-------------------------|-----------------------------|
| Construction finalised: | 08/ 2006 |
| Surface of area : | about. 5,5 ha |
| Building surface: | 36 200 m² |
| Surface greenfield: | 44 000 m² |
| Investment costs : | 115 millions € |