



## Dow Performance Silicones

# Brussels, Belgium



### Case Study: Charlemagne



#### City and Country

Brussels, Belgium

#### Products\*

- DOWSIL™ 3362 Insulating Glass
- DOWSIL™ 993 Structural Glazing Sealant

#### Key Participants

- **Architect**  
Helmut Jahn
- **Curtainwall**  
Permasteelisa

\*Prior to February 2018, products listed were branded as Dow Corning.

#### The Project:

- Charlemagne is a renovated building. The former building was built in the 1970's and typified the style of the period. The new model employs wide expanses of glass facade to allow greater use of natural light, replacing concrete walls.
- The design used a four-sided structural glazing system where the silicone has the dual purpose of bonding the structural joint whilst providing a weather sealant around the panel.
- DOWSIL™ 993 SG Sealant was specified as the silicone sealant for the structurally glazed curtainwall. The versatility and adhesion capabilities meant that the product was used to rigidify the glass fins, via a silicone joint between the edges of the glass fins and the aluminium profiles. This produced a sheer glass wall, forming an imposing sail-like shape. DOWSIL™ 3362 Insulating Glass Base was also used as the insulated glazing silicone sealant.

## The Project

Modern architectural design is tasked with the sympathetic renovation of tired and dated buildings as much as it is with the construction of new and innovative structures for the 21st century. Both the Charlemagne building and the South Tower Station in Brussels are proof that dramatic structures can be developed regardless of however mundane the original may appear.



In the case of Charlemagne, the former building was built in the 1970's and typified the style of the period: a heavy concrete exterior and an oppressive interior which, whilst maximising the available space, paid little or no attention to environmental impact, energy efficiency or even the conviviality of the surroundings, when compared to modern thinking.

The renovated Charlemagne is an inspiration. Designed to integrate more effectively with its environment, the building employs wide expanses of glass facade to allow greater use of natural light. All concrete walls have been replaced by a structurally glazed facade and metallic systems, which ensure the environmental integrity of the building, such that it now meets European energy efficiency standards. A new atrium has also been constructed using a bolted glass system. It replaces a single concrete supporting arm, thus further enhancing light penetration into the centre of the structure and creating a smooth transition from the exterior to the interior of the building.

## The Products

DOWSIL™ 993 SG Sealant was specified for this project as the silicone sealant for the structurally glazed curtainwall, along with DOWSIL™ 3362 Insulating Glass Base as the insulated glazing silicone sealant. To maximise the potential of the Charlemagne design, the building concept demanded a very clear, high performance, low emissivity glass for the facade, used in conjunction with external glass fins. The design used a four-sided structural glazing system where the silicone has the dual purpose of bonding the structural joint whilst providing a weather sealant around the panel.

A similar system, also using DOWSIL™ 993 SG Sealant, was utilised in the construction of the glass arch linking the two primary arms of the building. Furthermore, the versatility and adhesion capabilities of DOWSIL™ 993 SG Sealant meant that the product was used to rigidify the glass fins, via a silicone joint between the edges of the glass fins and the aluminium profiles.

No other technique would have allowed the design of a sheer glass wall, forming an imposing sail-like shape.

The renovation of Charlemagne has provided the city of Brussels with an exciting and innovative means of exploiting the full potential of structures, which may otherwise appear unattractive and outdated.

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