

Atomium, Brussels



The Project

A monumental contraption in the shape of an iron molecule enlarged 165 billion times, the Atomium was never supposed to last this long. Erected for the 1958 World Fair, the building was destined to be dismantled soon after the last of the 42 million visitors to “Expo 58” had gone back home.

The Atomium, however, had left such an enduring impression with its nine shiny spheres, the panoramic view from the restaurant towering more than 100 meters above ground in one of the nine “atoms” and the elaborate external lighting system mimicking the flight of electrons, that Belgium decided to keep it for good.

The Atomium has since become a popular landmark in Brussels. Conceived by the engineer André Waterkeyn as a celebration of scientific and human progress in post-war Europe – it housed an exhibition on the peaceful uses of atomic energy – the Atomium has come to symbolize a city that serves as the capital of the European Union.

The Challenge

The building’s shiny surface is an essential part of the symbolism of progress, one of three “imperatives” which, in the words of André Waterkeyn, dictated the technical choices made back in 1956. Today, the same imperative dictated the choice of a unique Dow Corning sealant designed specifically for the weathersealing of prestige buildings where aesthetic performance is of prime importance.

In recent decades, the Atomium had indeed lost much of its original good looks. The aluminium-clad spheres, 18 meters in diameter, had become a lacklustre, dirty grey. Wind, rain and atmospheric pollution had taken their toll.

The Team

The € 23 million renovation began in March 2004 under the leadership of the joint venture Besix-Jacques Delens. In addition to a comprehensive overhaul of the Atomium’s welded steel structure, the spheres’ original aluminium-plate coverings were replaced with more than 400 curved, triangular plates made of stainless steel.

Ensuring a lasting, glossy look, however, is tricky – particularly where the metal plates join each other. This is why the expert Belgian renovators selected *Dow Corning*[®] 756 SMS Building Sealant. The sealant was used to fill 20-millimetre gaps between the curved stainless-steel plating and to mimic the original joinery over a total length of no less than 20 kilometres.

The *Dow Corning* technical team worked closely with building envelopes and cladding specialist Belgometal (Permasteelisa) to ensure that the original vision of the Atomium’s designers could be kept alive well into the 21st century. They carried out complex design calculations to ensure optimum performance of the system.

City:	Brussels
Country:	Belgium
Product:	Dow Corning [®] 756 SMS - grey
Architect:	Atelier d’Architecture QUATR’A SA (renovation)
Main Contractors:	Jacques Delens and BESIX
Façade contractor:	Belgometal (Permasteelisa)

Dow Corning 756 SMS Building Sealant is a silicone-modified sealant specially designed for weatherproofing sensitive porous stone and metal panel substrates for new build and refurbishment projects.

- *Dow Corning* 756 SMS Building Sealant is a technically advanced, high performance medium modulus elastomeric weatherproofing sealant, which can be used on porous or non-porous substrates. It is particularly well suited to sensitive, porous materials such as natural stones, which are susceptible to fluid migration and contamination. By reducing the attraction of atmospheric contaminants and dirt pick-up on the sealant surface, *Dow Corning* 756 SMS Building Sealant eliminates fluid streaking, and long-term fluid run down, improving the façade’s appearance, leading to a reduction in building maintenance and cleaning costs.
- *Dow Corning* 756 SMS Building Sealant complies with global sealant standards including ISO 11600 25LM. It cures to a flexible elastomer on exposure to atmospheric moisture with an attractive dry matt surface finish. It demonstrates good adhesion to a wide range of substrates and exhibits a high movement capability making it perfect for sealing expansion and control joints, metal panel joints, curtain wall joints, joints between natural stone and perimeter sealing around window frames.
- *Dow Corning* 756 SMS Building Sealant is available in a range of colours as standard and can be produced in specially matched custom colours subject to a small minimum order.

The Product

Meeting the toughest specifications, *Dow Corning 756 SMS Building Sealant* cures to a dry, matt surface that is dirt resistant and reduces fluid migration and streaking. Users appreciate the new sealant's excellent application and tooling properties, including improved handling and reduced slump. Above all, the unique aesthetic qualities of *Dow Corning 756 SMS* will allow the Atomium to retain a long-lasting, shiny surface.

André Waterkeyn unfortunately died a few months before the Atomium's reopening in early 2006. But his brilliant engineering lives on, and the Atomium's shine will continue to grace the Brussels skyline for many years to come.

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