

Building & Industry

NOVENCO

SCHAKO Group

Sustainability and life-safety system at the Grotius Towers

The two green towers

The Grotius residential towers rise next to The Hague Central Station in the Netherlands. With heights of 120 and 100 metres, the towers make a striking contribution to the city skyline. Completed in 2022, the buildings house 655 high-quality apartments, cafés, restaurants and an enclosed underground car park for 245 cars.

NOVENCO Building & Industry designed, supplied, installed and commissioned the certified pressurisation systems and the car park ventilation system. The project sets high sustainability standards that align closely with NOVENCO's environmental objectives. These include highly efficient production methods and 98% product recyclability.



Visual impression of the Grotius Towers



System installed on the rooftop

ClearChoice life-safety systems

In case of fires, the NOVENCO ClearChoice pressurisation systems keep the stairwells free of smoke. To safeguard escape routes, the systems take into account door openings and the building heights.

Equipment delivery

The ClearChoice pressurisation systems are designed in Revit 3D BIM and include two NovAx™ axial pressurisation fans and four ZerAx certified

Facts:

- Certified pressure differential systems
- Car park ventilation system
- Sustainable life-safety systems
- Highly efficient ZerAx axial flow fans

axial smoke fans. The full ZerAx range is certified for variable-speed smoke extract operation. Pressure relief dampers in each of the six shafts secure correct system performance.

The control system comprises several control panels and 70 ClearChoice Interface Boxes (CCIB) to control and monitor about 220 certified smoke control dampers and 210 pressure sensors.

To protect the air intake from smoke, the design includes eight shut-off dampers with smoke detectors and weather grilles.

The two-level underground car park features a NOVENCO jet-fan ventilation system to maintain healthy air throughout the space. Ten CGF 500 low-profile jet fans ensure efficient induction and air mixing while keeping adequate clearance height. Fresh air intake and exhaust are provided by speed-controlled NovAx™ axial exhaust fans. These are installed in a shaft with large ventilation grilles, SCHAKO HKU multi-leaf dampers, ductwork and an extraction hood. A central control panel with integrated CO/LPG monitoring manages all components. The garage is also equipped with a sprinkler system.

"When the doors are closed, a pressure difference of 50 Pa must be maintained, if a door opens on a floor with a fire, the system must create an air velocity from the pressurised stairwell into the corridor. The transition between pressure and air velocity must happen within seconds to prevent smoke entering the stairwell. We achieve this within three seconds."

*Toine van der Wielen, Product Manager
at NOVENCO Building & Industry*