



Fire Protection of Car Parks

With SEM-SAFE® High-Pressure Water Mist System

Danfoss Semco A/S

Total Solution Provider of Certified Fixed Fire Fighting Systems

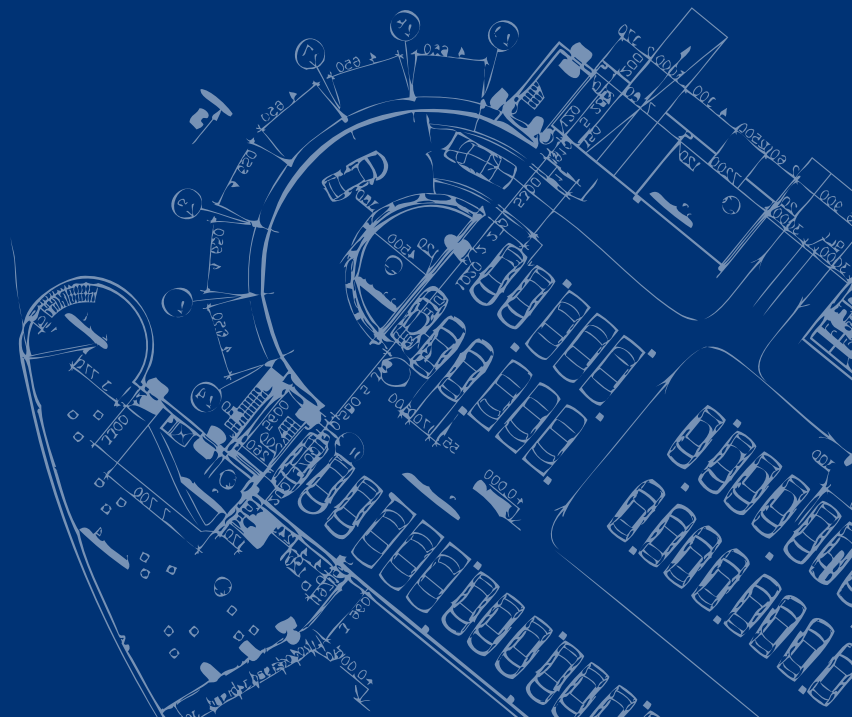


Budapest Air Traffic Control Centre - picture from test in underground car park, fully protected with Danfoss Semco SEM-SAFE® high-pressure water mist system

Need a fire fighting system that:

- Provides efficient fire protection
- Can be easily integrated in the architecture of the car park area
- Is durable in the relatively aggressive environment of a car park
- Occupies very little space
- Is easy to install and maintain, due to fewer components needed

Then SEM-SAFE® is up for the challenge!



SEM-SAFE®

For car parks



SEM-SAFE® in brief

SEM-SAFE® is a high-pressure water mist fire fighting system that uses micro droplets released through nozzles in protected areas. It comprises a high-pressure modular pump unit, section valves, piping and water mist nozzles.

The system is safe, efficient and environmentally friendly. With small pipe dimensions, large coverage, minimal water consumption, a compact skid unit and simple design, SEM-SAFE® high-pressure water mist is the perfect choice to protect underground car parks against fire, with reliability and cost-saving in mind.

Effective fire fighting with SEM-SAFE®

- Suppresses fire in fuel spills
- Higher cooling capacity of the small water droplets
- Fast nozzle activation
- Good control of the thermal environment

Unique patent nozzle design

- The only upright garage nozzle in the market
- Tested and accepted by a highly recognized authority, VdS
- No risk of accidental hit by a car
- No need to remove the nozzles in order to drain the water, when pressure testing
- Tested below ceiling 50-100 mm. The nozzles do not need to be flush with the ceiling, therefore the installation is fast and with less costs
- Up to 50% higher coverage area in comparison with sprinklers. This means fewer nozzles to be installed

Flexibility in installation

- Flexibility of pipes positioning under the concrete ceiling
- Easy to integrate with other services required in the cars par (signs, vents, security systems, etc.)

Minimal water consumption

- Up to 50% less water used in comparison with sprinkler
- By using SEM-SAFE®, the cost of water supply is significantly reduced

Space saving

- The compact and modular SEM-SAFE® pump unit has a small footprint, occupying less than half the space needed for the parking area for one car

SEM-SAFE®

Only 1 system to cover your entire building!

With SEM-SAFE® high-pressure water mist you can:

Protects an entire building

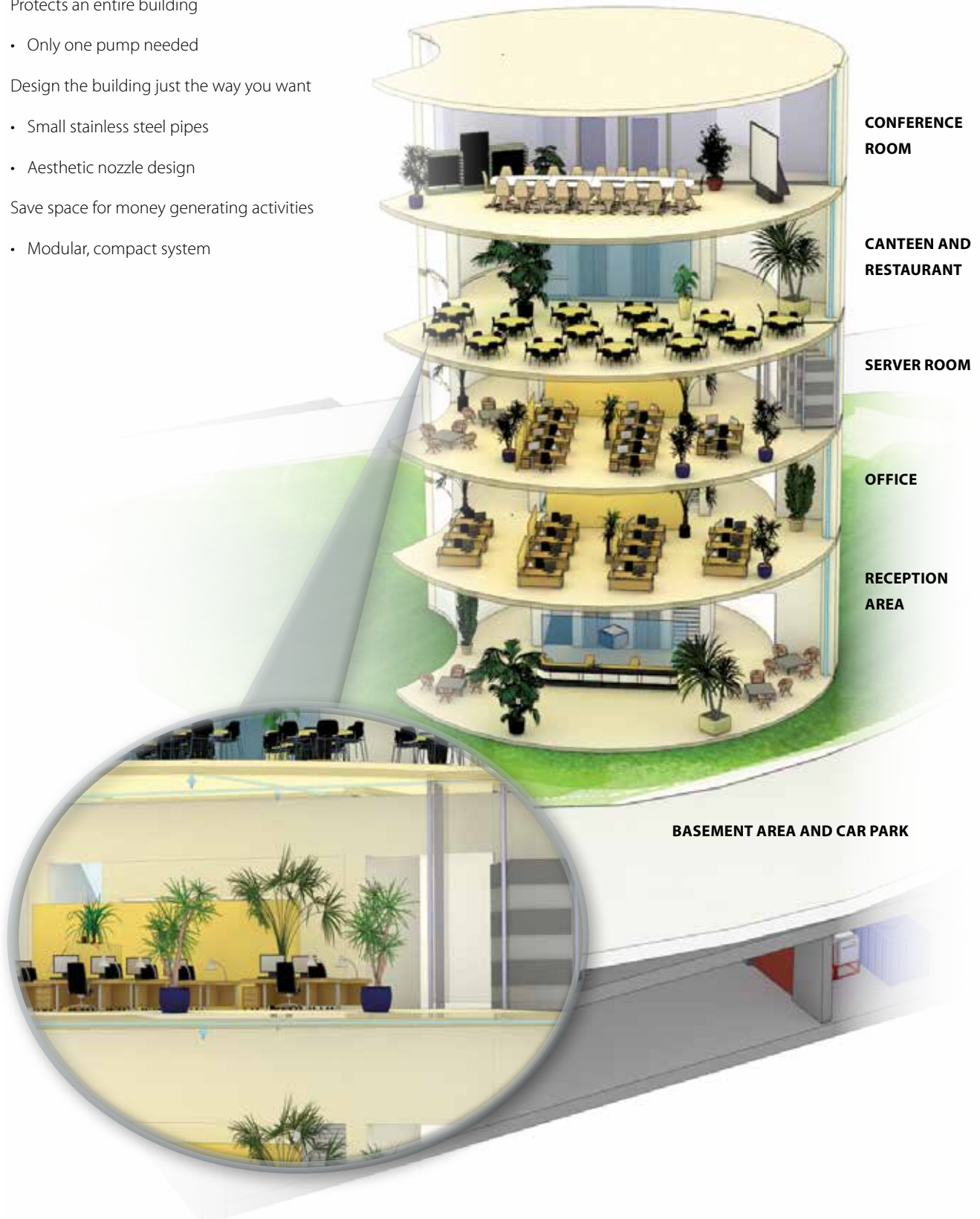
- Only one pump needed

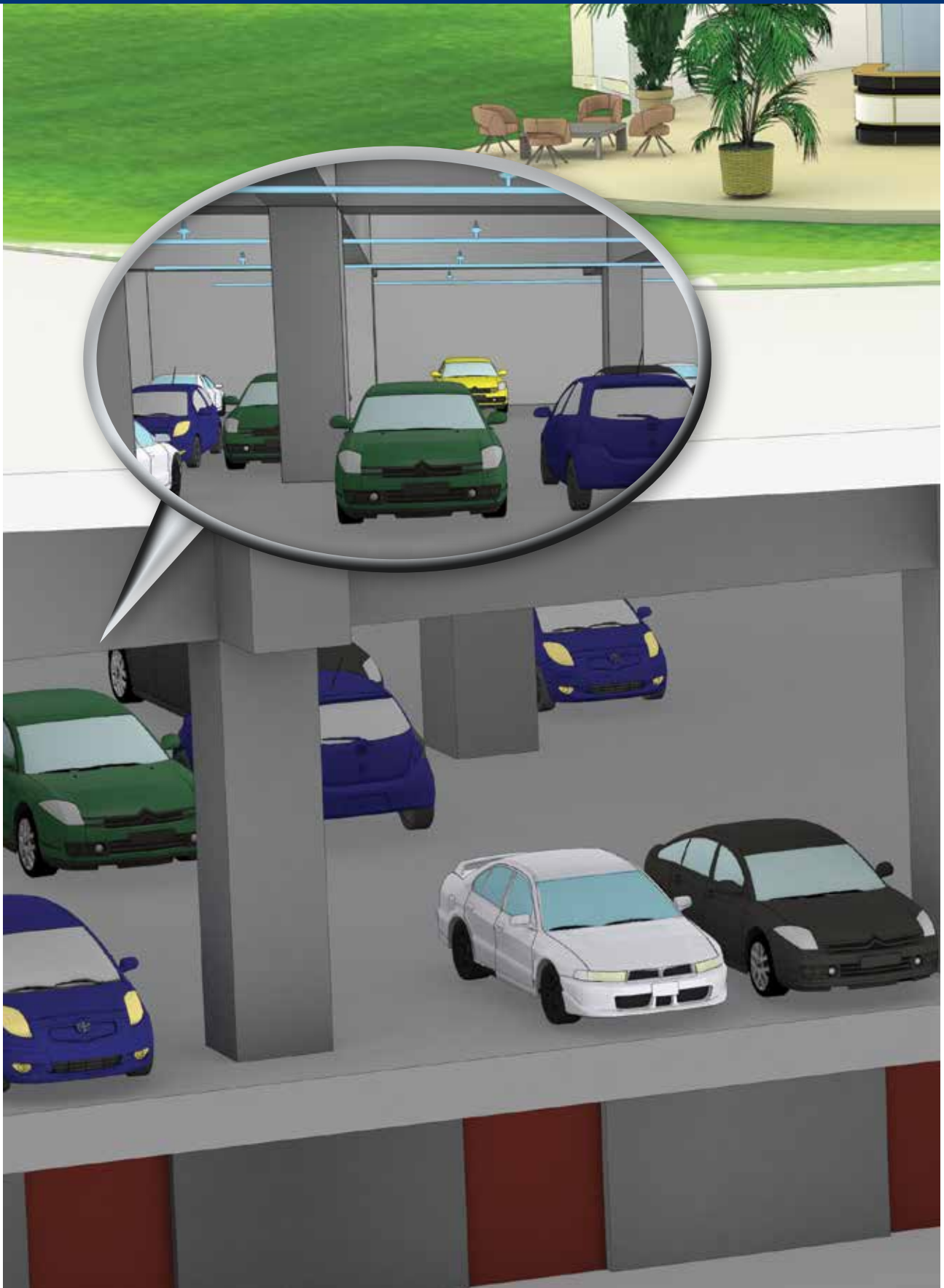
Design the building just the way you want

- Small stainless steel pipes
- Aesthetic nozzle design

Save space for money generating activities

- Modular, compact system





SEM-SAFE® high-pressure water mist system

How SEM-SAFE® works

When water is forced through nozzles at high-pressure, a fine mist is formed that has a twofold extinguishing effect – it rapidly cools down the fire and starves the flames of oxygen to reduce damage and quell fires.

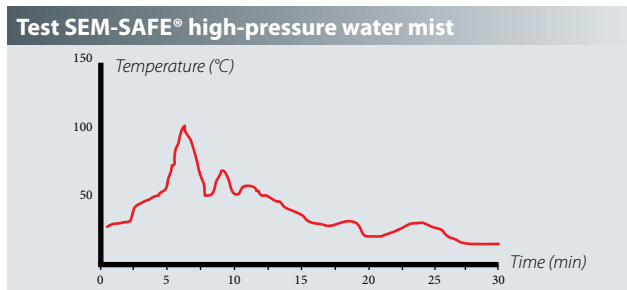
Benefits of SEM-SAFE® high-pressure water mist

Tackles fires swiftly and efficiently

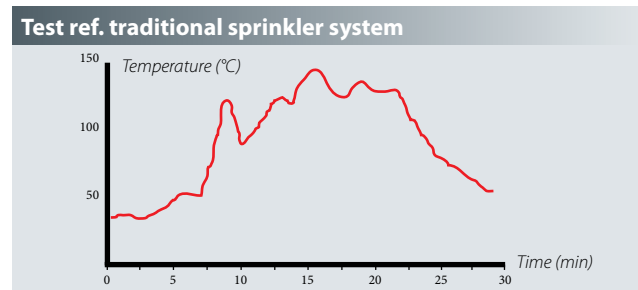
- Immediately cooling of smoke gasses, preventing flashover
- Reduced extinguishing time due to rapid and water discharge
- Minimal consumption of water
- Immediately cools the fire, preventing fire growth
- With up to 30% fewer components compared to most competing systems, the SEM-SAFE® system is lighter and more compact. This allows for easier installation, simplified maintenance and valuable space saving

Money-saving solutions

- With fewer nozzles required thanks to optimized spacing and the need for only one pump unit for all protected applications, installation cost and time as well as required service interventions are considerably reduced
- The SEM-SAFE® system is ideal for both new building projects and for installation in existing facilities
- Our stainless steel pipes are extremely corrosion-proof and dirt resistant to prevent malfunctions, e.g. clogging that usually affects other types of pipes
- The high-pressure pumps are water-lubricated and hence virtually maintenance-free



Average ceiling gas temperature



Safe and reliable solution



Proven experience

The SEM-SAFE® high-pressure water mist system has proven to be the optimal fire protection solution for protecting the entire basement and car park of ANS-III, the newest addition to the Budapest Air Traffic Control Centre. One SEM-SAFE® system protects the basement, including OH2 area, such as garage, as well as OH1 and OH3 areas.

In-house design

We have the experience and technological knowledge to provide you with the optimal fire fighting solution based on fire risk analysis made for your car park. Not only will we design the right system for your car park. We can actually show you and your customers, live fire tests of our SEM-SAFE® high-pressure water mist system.

Tested and approved

We provide a unique and complete fire protection system for car parks and basement garages (OH2), fully approved by VdS, an internationally recognized authority. As a high quality and reliable system, SEM-SAFE® has successfully passed difficult fire and component test criteria.



Danfoss Semco A/S

History

Danfoss Semco A/S is a global leader in the sale, development, production and service/commissioning of certified fixed fire fighting systems. In 2006, two leading firms in the field, Danfoss A/S and Semco Maritime A/S, joined forces to form the present company, with Semco Maritime boasting over half a century of expertise in designing and installing fixed fire fighting systems. All the while, Danfoss has developed and delivered key components for the high-tech systems.

Today, Danfoss Semco is an integral part of the Danfoss Group, Denmark's largest industrial manufacturing company with a daily output of more than 250,000 finished components. With more than 24,000 employees worldwide, Danfoss is truly a global company.

Business areas

Our company is located in Odense, Denmark and operates three main business areas.

Our water mist division comprises two business areas: the marine division and the industrial and commercial division. The former has pushed the boundaries for development and design to offer a wide range of solutions for numerous application areas on almost any type of vessel.

Within the industrial and commercial area, Danfoss Semco has a successful track record with different applications, ranging from complex fire fighting systems for museums and heritage sites to industrial applications, office buildings and universities.

Our gas and foam division is the world's largest low-pressure CO₂ based fire fighting systems supplier for the marine industry. This division supplies gas, foam and dry chemical powder systems worldwide.

In-house manufacturing of key components

Danfoss Semco operates in-house research, development and manufacturing facilities of all critical components to ensure uncompromising performance and cost-effective systems. This puts us in a unique position to maintain our technological leadership in the future.

Proven experience

Danfoss Semco has supplied fire fighting systems for a wide range of commercial and industrial applications, including remarkable projects such as:

- *Metro line* in Shanghai, the fastest-growing rapid transit system in the world
- *Equinix* in the Netherlands, a worldwide renowned data centre
- *Alston* in Denmark, a 28,400 m² building housing a university, concert hall and a research park
- *AB6* in Denmark, a unique office block in the heart of Copenhagen
- *Heinrich-Hertz-Institute* in Germany, a high-rise building for leading-edge research and development of IT
- *Shanghai Shuguang Hospital*, one of the top 100 national hospitals in China



Basement and underground car park in Budapest Airport, ANS III, protected with a SEM-SAFE® high-pressure water mist system