

1 Buildings (빌딩)



감옥

1.1 Prison cells, southern part of England (UK)

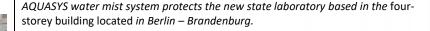
AQUASYS developed a water mist system for protecting prison cells in southern part of England and executed real scale fire tests for those scenarios.

Project period: 2018 – 2019 **Cooperation partner:** Protec UK

Project description:

- Protection of prison cells to prevent spread of fire to neighbour cells or corridors and protection of personnel and occupants in the event of a fire
- Pump room build in a 10ft container adjusted for outdoor and high security area serving a system divided into 18 sections
- AQUASYS has provided a compact test unit for local fire tests
- Integration of the system in close coordination with the british authorities
- Installation and project management by local partner

1.2 3S Laboratory, Berlin - Brandenburg (Germany)



Project period: 2018 – 2019

Cooperation partner: Caverion Deutschland GmbH

Project description:

- The water mist system is installed in a total area of 249m² and protects laboratory rooms as well as technical rooms
- The compact pump unit with a water flow of 112l/min serving a wet system divided into 11 sections
- Areas are equipped with closed nozzles
- The design of the system is in accordance to the requirements of VdS
- Installation and project management by local partner

실험실

1.3 Odunpazari Modern Museum (Turkey)

AQUASYS water mist system protects the works of art and the building structure from damage in an emergency.

Project period: 2018 – 2019 **Cooperation partner:** Arasco



박물관

- Protection over four levels, including exhibition and gastronomy areas
- In total 182 high-pressure nozzles for false ceiling and room protection
- Installation and project management by local partner







호텔 (소방시스템 개조)

1.4 Retrofit system for existing hotel (Germany)

AQUASYS water mist system protects an existing Hotel in Germany and designed a retrofit solution therefore.

Project period: 2018

Cooperation partner: Marang GmbH

Project description:

- Diesel Power pack with 810 l/min water flow situated in a 40ft container and Tank with 48m³ useable water volume
- The system with in total 4.700m piping is divided by three alarm valves and ten flow switch valves
- In total 490 nozzles are installed for room and false ceiling protection
- Installation and project management by local partner

1.5 Gesiba Gemeinnützige Siedlungs- & Bau AG headquarters, Vienna (Austria)

AQUASYS water mist to protect the listed building in Vienna's first district.

Project period: 2017
Project management: Siemens AG



- Protection of the eight-floor building
- Protection of the office spaces
- Collaboration with Siemens AG as the general contractor for the technical building services
- Commissioning and acceptance by AQUASYS

빌딩

1.6 Maakri 19/21 Tower, Tallinn (Estonia)

AQUASYS fire-fighting system for 30-storey skyscraper in the centre of Tallinn.

Project period: 2016–2017

Project management: Antifire Tuleohutuslahendused OÜ

- Protection of office areas, technical areas and car parks in the skyscraper in Tallinn's Maakri Kvartal district
- Installation and project management by local partner
- $-\,$ 2464 nozzle heads and 11,623 m of pipeline installed in total
- Building height 110 m



타워 (30층 고층 건물)



1.7 M2 metro station, Budapest (Hungary)

Water mist fire-fighting system to protect the historical Hungarian metro stations that date back to 1896.

Project period: 2015-2017

Cooperation partner: SPIE AGIS Fire & Security Kft.

Project description:

- Protection of listed stations, including commercial premises, on the M2 line
- Installation in compliance with the Hungarian authorities' requirements for monument protection
- Expansion of the existing fire-fighting system

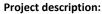


Gare de Lyon, Paris (France) 1.8

High-pressure water mist system for protecting the station hall at one of Europe's most important railway stations.

Project period: 2016

Project management: Uxello Risques Spéciaux



- Protection and cooling of the structure and its load-bearing elements with
- Successful simulation for verifying the effectiveness
- Improved safety for the station's 83 million passengers per year
- Installation and project management by local partner





철도역 (유럽 주요역, 파리)



1.9 **Barnard Castle Emergency Station, Durham** (England)

Historical fire station protected by AQUASYS high-pressure water mist system.

Project period:

Cooperation partner: PROTEC CAMERFIELD LTD

Project description:

- Modernisation of the building, first constructed in 1948
- Protection of the entire building with water mist
- Installation and project management by local partner
- Commissioning and acceptance by AQUASYS

소방서

1.10 Care home, Oslo (Norway)

AQUASYS fire-fighting system to protect a care home for the elderly.

Project period: 2016

Project management: Norges Rørleggerbedrift AS

Project description:

- Complete protection across a total of three floors comprising living areas, entertainment rooms and utility rooms
- Elimination of the need for extensive upgrade work on the public water pipeline thanks to the use of water-saving water mist technology
- Combined wet and dry system installation



양로원

1.11 A'Sharqiyah University, Ibra (Oman)

Fire protection system for the University of Business Administration, Engineering and Applied Sciences in the north of the A'Sharqiyah region.

Project period: 2015

Vision Safety LLC Cooperation partner:

Project description:

- Protection of more than 8600 books and 2133 students
- Protection of the three-storey library via six different fire areas
- Manual fire-fighting with additionally installed AQUASYS Water Mist Guns
- Project execution by local partner



대학교 (공학, 응용과학 보호)



1.12 Dreischeibenhaus, Düsseldorf (Germany)

AQUASYS high-pressure water mist for protecting the listed high-rise building in Düsseldorf.

Project period: 2015

Cooperation partner: Caverion Deutschland GmbH



고층빌딩

Project description:

- Installation of a water mist system on the second basement floor during general renovations
- Protection of the exhibition areas on the 21st, 22nd and 23rd floors at a height of approximately 70 m
- Project execution and installation by local partner



대학교 도서관 (190만권이상 장서보호)

1.13 Philipps University of Marburg (Germany)

AQUASYS fire-fighting system for the central library at the Philipps University of Marburg.

Project period: 2015–2017

Cooperation partner: Caverion Deutschland GmbH

Project description:

- Protection of the university library with more than 1.9 million books on sliding and rolling shelves
- Improved safety for 26,726 students per year
- Approximately 3450 nozzle heads and 9000 m of stainless steel pipeline installed
- Installation and project execution by local partner



<u> 박물관</u>

1.14 Museum of Estonian Architecture, Tallinn (Estonia)

Water mist technology for Estonia's architecture museum in a salt storage building that is more than 100 years old.

Project period: 2014–2015
Client: Riigi Kinnisvara AS

- Replacement of the existing sprinkler system with a modern water mist system due to its longer lifespan and shorter installation time
- Protection of the entire exhibition area, including staff and utility rooms
- Protection of the 10-metre-high atrium
- Installation by local partner, supervision by AQUASYS



1.15 Shopping Mall, Taipei (Taiwan)

High-pressure water mist system for the shopping mall.

Project period:

Cooperation partner: PAO AN FIRE EQUIPMENT CO., LTD

Project description:

- Protection of the atrium and emergency escape routes in the 16-floor shopping centre
- Measures to prevent flames from spreading to higher floors in the event of
- Water mist offers ideal protection against spreading flames due to its excellent cooling properties

쇼핑



Choithrams Supermarket, Dubai 1.16 (United Arab Emirates)

AQUASYS fire-fighting system to protect a supermarket in a shopping centre.

2013-2014 Project period: Cooperation partner: Vision Safety LLC



슈퍼마켓

Project description:

- Complete protection of the retail space across three floors
- Project management and supervision by AQUASYS
- Assembly and installation by local partner

Derag Livinghotel De Medici, Düsseldorf (Germany) 1.17

AQUASYS water mist system for a luxury hotel in Düsseldorf's historical old town hall, a listed building.

Project period:

Client: Derag Livinghotels Düsseldorf GmbH



럭셔리 호텔

- Installation of the water mist system under strict conditions for preserving the building's original character
- 2000 m of pipeline and 650 nozzle heads distributed across four storeys
- Protection of the entire hotel area in the 17th-century building
- Protection of the owner's private art collection





1.18 RheinMain University and State Library, Wiesbaden (Germany)

Fire-fighting system for the seven-storey state library of Hesse.

Project period: 2013

Client: Hesse Construction Management

Project description:

- Protection of the entire library space in the seven-storey building
- Protection of some 600,000 volumes, printed texts and manuscripts
- Installation and project management by AQUASYS



주립 도서관

1.19 Volkstheater Rostock, Rostock (Germany)

Retrofitting of a fire-fighting system during renovation of the theatre to protect the stage and its equipment, the storage areas and the foyer.

Project period: 2012

Client: Volkstheater Rostock



극장 (무대 개조화 함께 소방시스템 개조)

Project description:

- Supply unit built to customised design due to limited space
- Protection of the stage and its equipment, storage areas and foyer
- Roof heights of up to 15 m implemented
- Installation and project management by AQUASYS



고층박당

1.20 High-rise office building, Frankfurt (Germany)

Water mist replacing sprinklers for modernisation of a high-rise building in Frankfurt.

Project period: 2011–2012 Project management: ARUP

Client: Major German bank

- Surface area of 30,000 m² protected across 25 floors
- Protection of offices, equipment rooms and an atrium over three floors
- Installation performed only at weekends to avoid interrupting operations
- Only one pump room required to supply the entire 96-metre-high building





왕세자 거주지 (아부 다비)

1.21 Residence of the Crown Prince of Abu Dhabi (United Arab Emirates)

AQUASYS fire-fighting system protects Crown Prince Sheikh Saif bin Zayed Al Nahyan.

Project period: 2011

Client: Emirate of Abu Dhabi

Project description:

- Protection of equipment rooms and supply systems at the residence
- Installation and project management by local partner
- Commissioning and acceptance by AQUASYS



1.22 Emirates NBD bank archives, Dubai (United Arab Emirates)

Fire-fighting water mist system to protect the archives at Dubai's largest bank

Project period: 2010

Client: Emirates NBD



Project description:

- Real-life tests to verify that the water mist causes minimal damage
- Protection of the steel shelf archives with a capacity of 45,000 m³
- Archiving of documents on four floors
- 1500 nozzle heads installed

주립 도서관

1.23 Upper Austrian State Library, Linz (Austria)

Installation of a fire-fighting system by AQUASYS during expansion and modernisation of the library. Because of the limited space available, a tailor-made solution was required.

Project period: 2008–2009

Client: State of Upper Austria

Project description:

- Protection of the six-floor library in Linz
- Upgrade to a water mist system as part of the modernisation work
- Tailored system solution due to limited space
- Archiving of documents on four floors
- 1500 nozzle heads installed

DOK



1.24 Palacio de Cibiles, Madrid (& main post office of the City of Madrid [Spain])

Water mist to protect the historical town hall and post office in Madrid



Project period: 2008 Client: City of Madrid

Project description:

- Simulation to verify the effectiveness of the water mist system
- Protection of the building structure and emergency escape routes
- Installation by local partner, supervision by AQUASYS

시청 및 우체국 (역사적인 건물)



Musikverein concert hall, Vienna (Austria) 1.25

Protection for the home of the Vienna Philharmonic Orchestra with a fire-fighting water mist system.

Project period:

Client: Wiener Gesellschaft der Musikfreunde (Viennese Friends of

Music Society)



- Protection of the box corridors, stage and dressing rooms at the large concert hall, which has a capacity of 1700 seated and 300 standing places
- Protection of the traditional concert hall's roof structure, which is difficult for emergency services to access
- Space-saving installation of the water mist system in the basement

필하민







1.26 **Enercon office building, Magdeburg (Germany)**

Water mist walls to replace structural fire barriers.

Project period: 2006 Client: Enercon

- Replacement of the structural fire barriers with water mist walls for architectural reasons
- Additional protection for the six-storey atrium
- Delivery, installation and commissioning by AQUASYS

(미분무수로 방화벽 대체)