Fire Control
High Pressure Water Mist and Controlled Ventilation
Fire Control
High Pressure Water Mist and Controlled Ventilation

Water and Air

Building Regulations and Objectives

Application in project Zoofenster in Berlin

Application in project Schlaues Haus in Oldenburg

Prospects
Fire Control
Fire Control
High Pressure Water Mist and Controlled Ventilation

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Prospects
Water mist streaming downwards into the fire

a n d r e a s  f l o c k  f i r e  c o n t r o l   b e r n d  k o n r a t h  f u l l  s c a l e  f i r e s
Smoke rising upwards driven by thermal updraft
Both effects directed towards each other: suppression of the thermal updraft
Fire Control
Water and Air

Fire Control: Interaction of water and air in one direction
Fire Control
High Pressure Water Mist and Controlled Ventilation

Water and Air

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Prospects
Ceilings: protective barrier / Resistance against fire spread
Escape routes: Protection from heat and smoke

andreas flock  fire control  bernd konrath full scale fires
Fire Control
Building Regulations

Protective barrier: ceilings

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Fire Control
Building Regulations

Protective barrier: escape routes
Fire Control
Building Regulations

Mobile protective barrier: curtains

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Fire Control
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Water and Air

Building Regulations and Objectives

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Prospects
Fire Control
Zoofenster

Location: Western city centre, near Bahnhof Zoo
Surface area: ca. 4,100 m²
Height according to MBO: ca. 110 m
Occupancy: hotel / offices
Installation: reception hall
Fire Control
Zoofenster

Installation: reception hall

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andreas flock  fire control  bernd konrath  full scale fires
Permitted design: Protection of the first floor escape routes with curtains.

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Fire Control
Zoofenster

Requirement: Ceiling as a barrier against heat and smoke

Requirement: Protection of escape routes

Reception Hall: Objectives
Achieving the objectives with water mist

a n d r e a s  f l o c k   f i r e  c o n t r o l   b e r n d  k o n r a t h   f u l l  s c a l e  f i r e s
Fire Control
Zoofenster

Full Scale Fire Simulations

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Fire Control
Zoofenster
High pressure water mist and controlled ventilation: observations

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Fire Control
High Pressure Water Mist and Controlled Ventilation

Water and Air

Building Regulations and Objectives

Application in project Zoofenster in Berlin

Application in project Schlaues Haus in Oldenburg

Prospects
Fire Control
Schlaues Haus

Location: Schlossplatz in the centre of Oldenburg

Surface area 319 m²

Height according to MBO: ca. 11,50 m

Occupancy: science communication centre, tourist information

Installation: ceiling openings
Fire Control
Schlaues Haus

Installation: ceiling openings

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Brandkontrolle
Einsatz im Zoofenster Berlin

Standard solution design: Protection of the escape routes with protective curtains
Fire Control
Schlaues Haus

Requirement: Ceiling as a protective barrier

Requirement: Protection of escape routes

Ceiling openings: Requirements
Fire Control
Schlaues Haus

Setting up the effects vertically

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Fire Control
Schlaues Haus

Full Scale Fire Simulations

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Fire Control
Schlaues Haus

Preparation tests

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Brandkontrolle

Ausblick

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V - 2 / 2-N - BKA / Incoming air: ground floor level / small wind guidance
V - 10 / 2 - N - BKA / Incoming air: all levels

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Fire Control
High Pressure Water Mist and Controlled Ventilation

Water and Air

Building Regulations and Objectives

Application in project Zoofenster in Berlin

Application in project Schlaues Haus in Oldenburg

Prospects
Fire Control
Prospects

Fire Control: High pressure water mist and controlled ventilation

> Systematic studies of physical effects > test series

> Description and explanation > Dissertation

> Widening the fields of application > Tunnels, high racks, servers
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