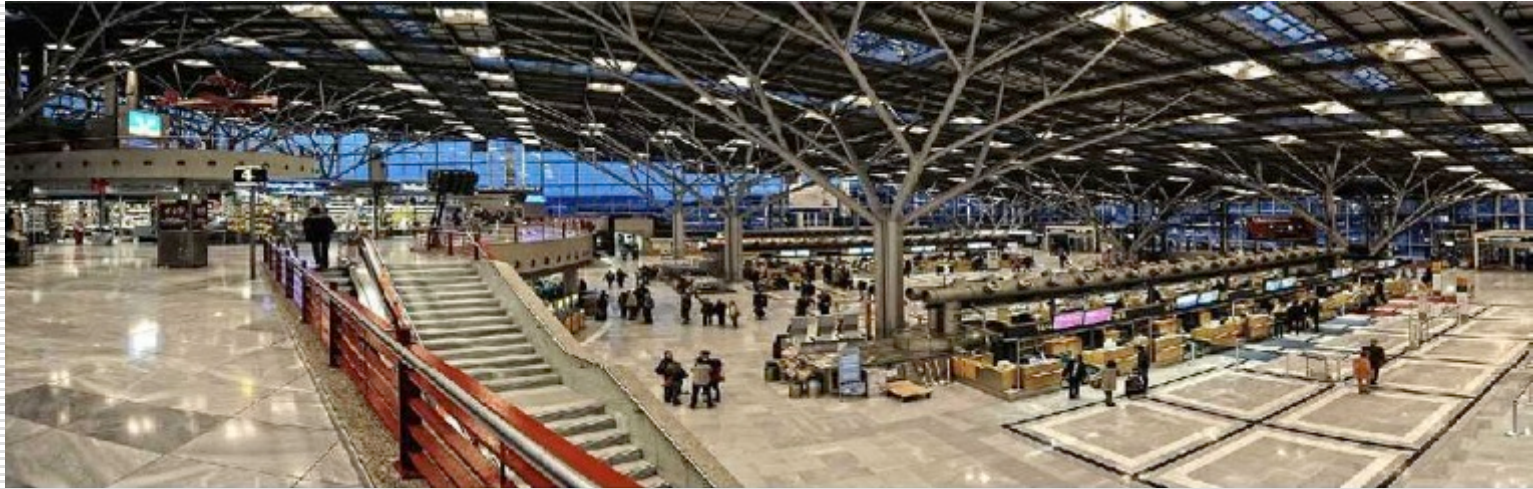




Integration of sprinkler systems into buildings today

- ☐ Introduction
 - ☐ Aesthetics – Is that a problem ?
 - ☐ Technical opportunities
 - ☐ Pay offs
-
- ☐ Appendix: General Information
-

Modern building materials



- ❑ When using modern building materials like large glass surfaces or open steel constructions it is often a problem to fulfil the fire protection requirements
- ❑ Sprinkler protection is the solution to combine the safety requirements with the use of these building materials
- ❑ In buildings with sprinkler protection it is generally acceptable to build with large glass facades and to avoid parapets

Modern building materials

- ❑ In sprinkler-protected buildings the use of combustible building materials like wood or plastics is generally acceptable under the building codes
 - ❑ In sprinkler-protected areas building codes typically allow the requirements for fire barriers to be reduced
 - ❑ In sprinkler-protected buildings the fire resistance rating of building elements (e.g. walls, floors) may be downgraded
 - ❑ In certain cases the codes may allow the specification for fire doors to be lowered or even allow fire doors to be eliminated
-

Aesthetics – Is that a problem?

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SPRINKLER SECTION

- Is this how a typical sprinkler installation looks like?

NO!



Aesthetics – Is that a problem?

☐ Is this building sprinkler protected?

☐ Yes, with
concealed
sprinklers.



Aesthetics – Is that a problem?

Concealed sprinklers:

- ❑ Different cover plate colours
- ❑ Different shapes and designs



Aesthetics – Is that a problem?

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SPRINKLER SECTION



- Integration into a ceiling



Aesthetics – Is that a problem?

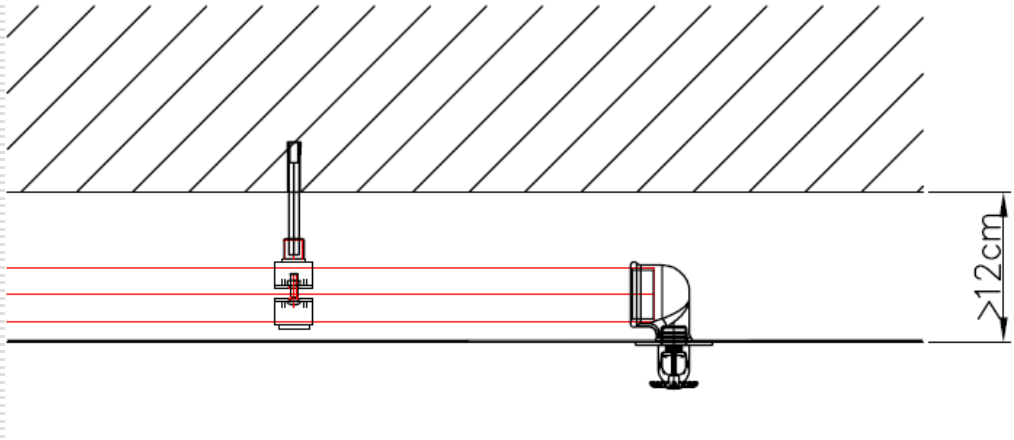
□ Examples of sprinkler integration projects





- ❑ Installation with exposed pipework, typical in industrial applications
- ❑ Installation with concealed pipework hidden in suspended ceiling, typical in offices
- ❑ Installation with pipework cast into concrete





- ☐ How much space do you need to install sprinklers?
- ☐ The minimum ceiling void depth for sprinkler pipes is 12 cm when the supply mains are installed in corridors or service shafts

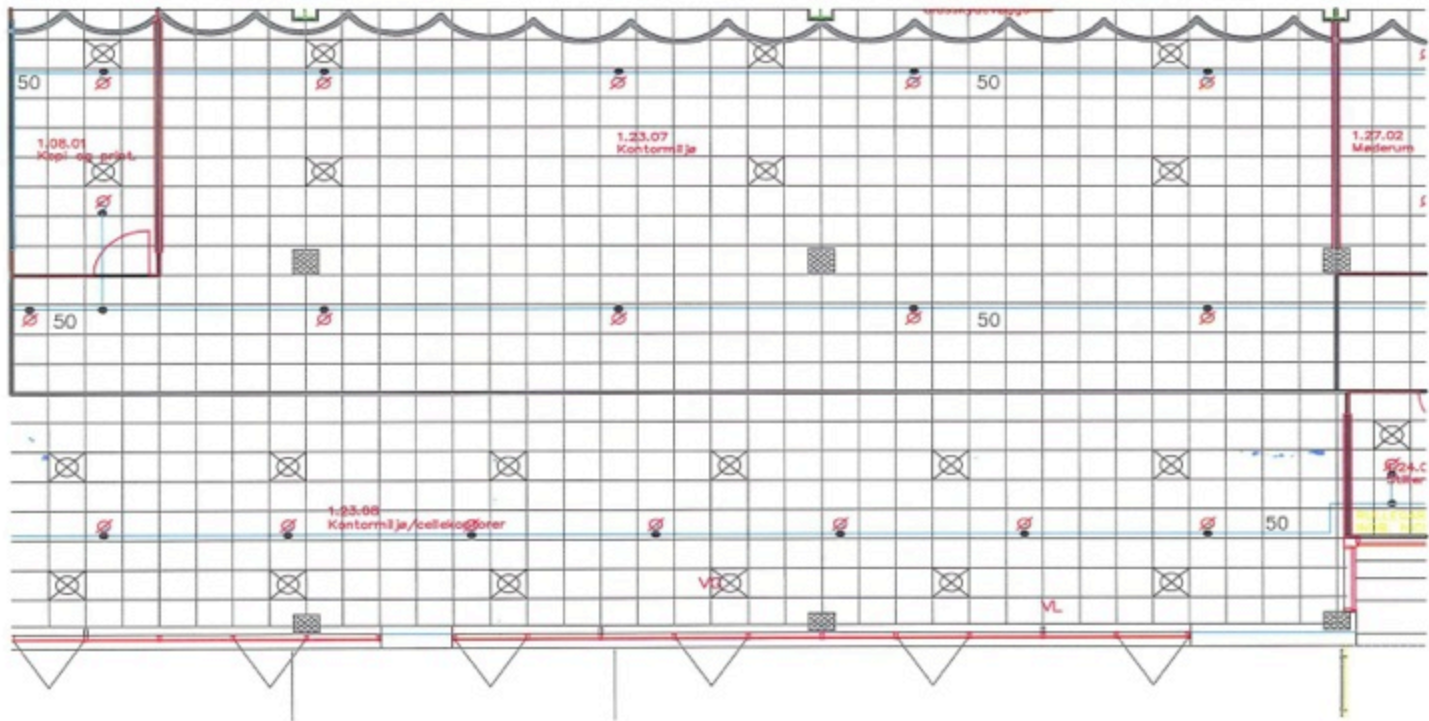


- ❑ How much space do you need to install the water supply?
- ❑ It may be possible
 - to feed the sprinkler system directly from the town mains under certain circumstances, or
 - use water storage tanks with a reduced capacity and automatic infill to reduce the space needed to store the water



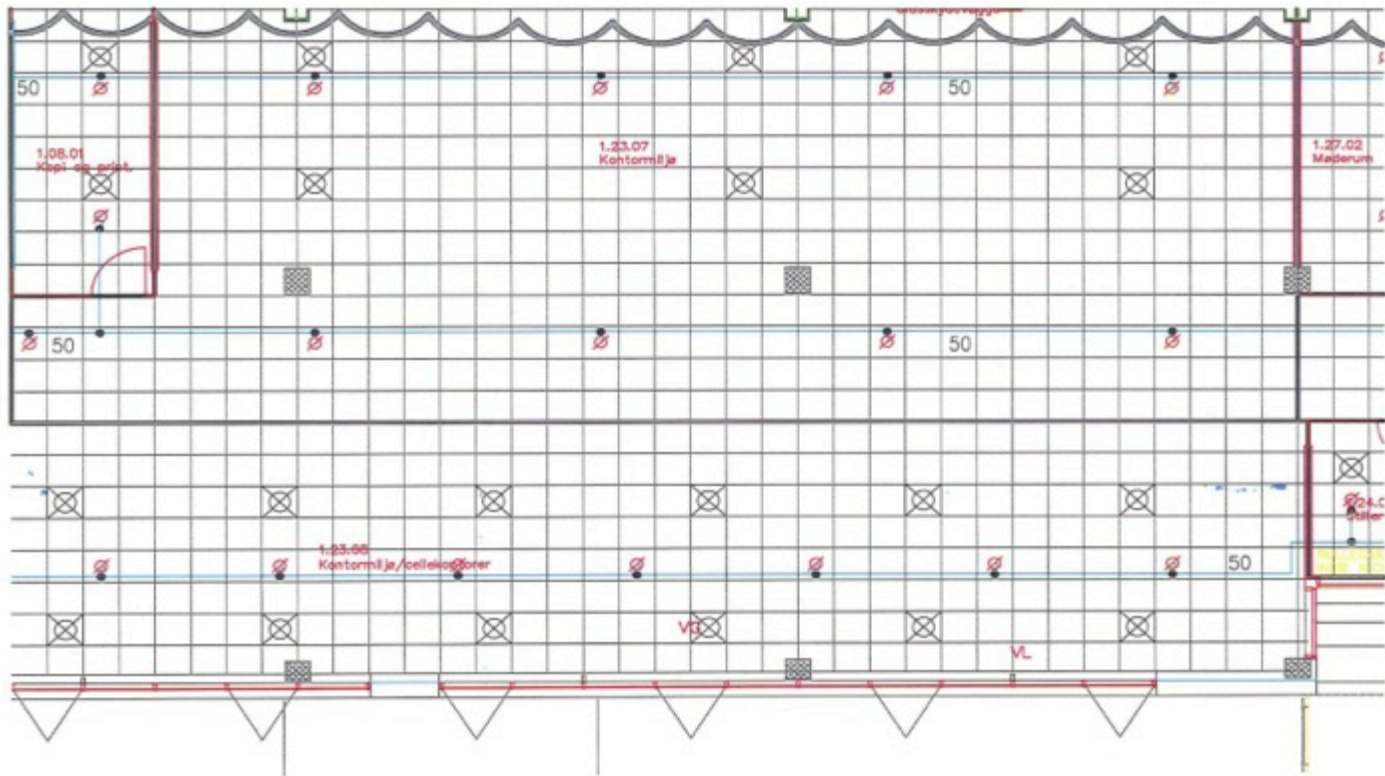
- ☐ Depending on local regulations and circumstances the use of special sprinklers may give you multiple opportunities in office buildings:
- ☐ Sprinklers may be approved for larger areas e.g. a spacing up to 6.1 m x 6.1 m
- ☐ Sprinklers may be installed in the wall and not at the ceiling

□ Office area without walls



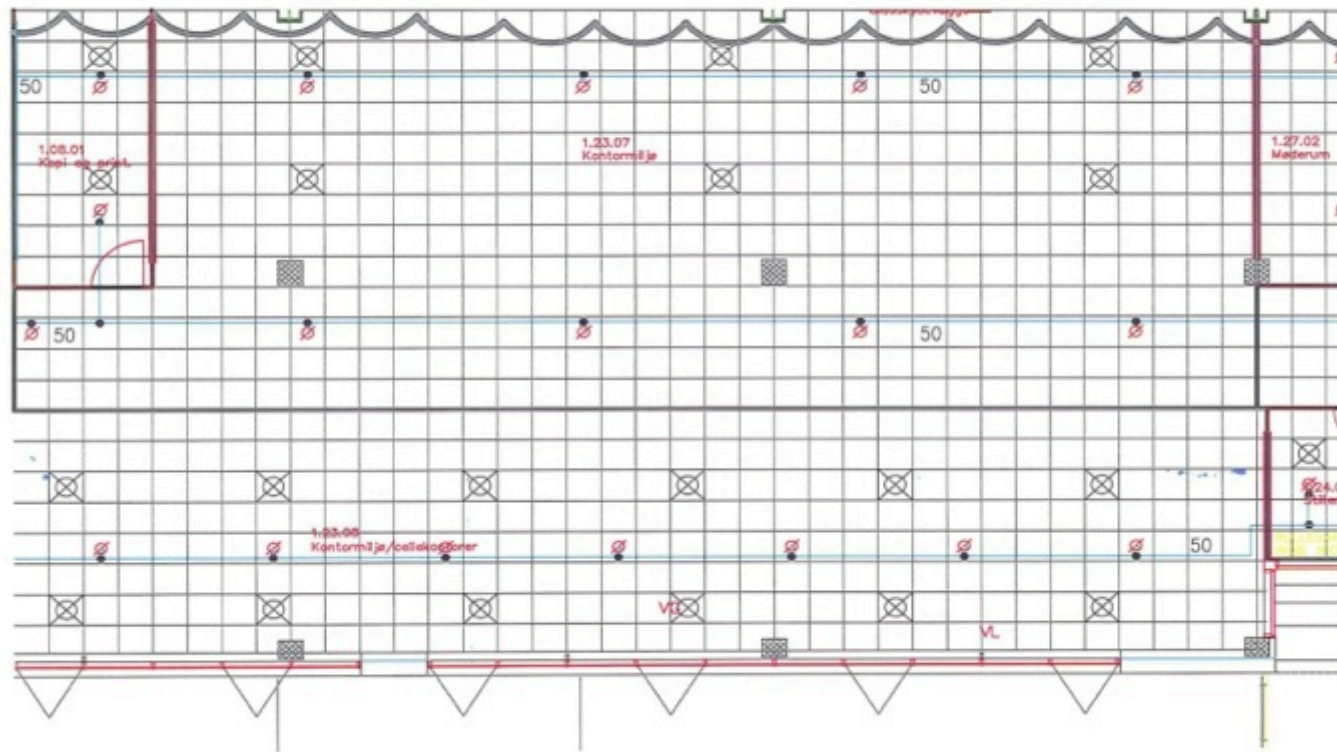
Technical opportunities – Special Sprinklers

Create your small office without changing the sprinkler system – e.g. like this



Technical opportunities – Special Sprinklers

□ ... or like this



Sustainability

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SPRINKLER SECTION

- Every fire suppressed in its early stage by an automatic fire-fighting system produces much less smoke, toxic gases and polluted water



Sustainability

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SPRINKLER SECTION

- Sprinkler systems require only a small percentage of the water needed by the fire brigade, owing to much earlier, automatic activation of the sprinkler system



Sustainability

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SPRINKLER SECTION

- The installation of a sprinkler system saves the waste of resources needed to reconstruct a building which burned down



Reputation of the architect

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SPRINKLER SECTION

- To design a safe building is good for the reputation of an architect
- You can achieve this with active fire protection like sprinkler systems
- The architect is responsible for selecting adequate fire protection for the building he is designing
- Otherwise he can be held responsible for damage to property and loss of life

Pay offs

- ▣ Installation of special sprinklers in such a way that their spray pattern will include the cooling of structural elements (especially steel constructions) may allow the use on uncoated elements



- ▣ **Installation of a sprinkler system may allow, depending on local regulations**
 - ▣ larger fire areas, i.e. reduce the number of fire walls
 - ▣ walls, ceilings, doors and vents with lower fire rating
 - ▣ longer emergency escape routes, i.e. reduce the need for emergency exits



- ▣ **Installation of a sprinkler system may also allow**
 - ▣ shorter business interruption for storage and production areas if a fire occurs
 - ▣ reduction of insurance costs
 - ▣ construction of higher buildings
 - ▣ environmentally-friendly buildings

Pay offs

- ▣ Installation of sprinklers with a spray pattern to protect windows may allow the use of windows with a lower fire rating.



Appendix

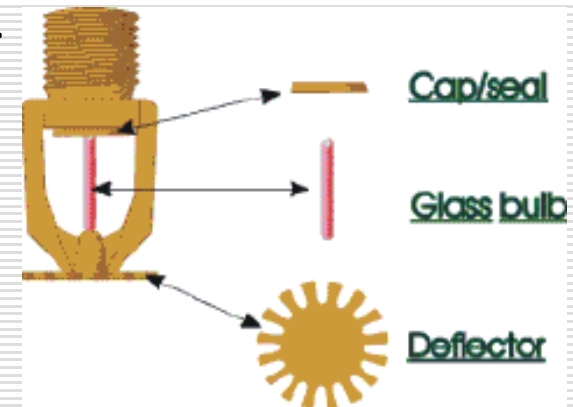
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SPRINKLER SECTION

Function

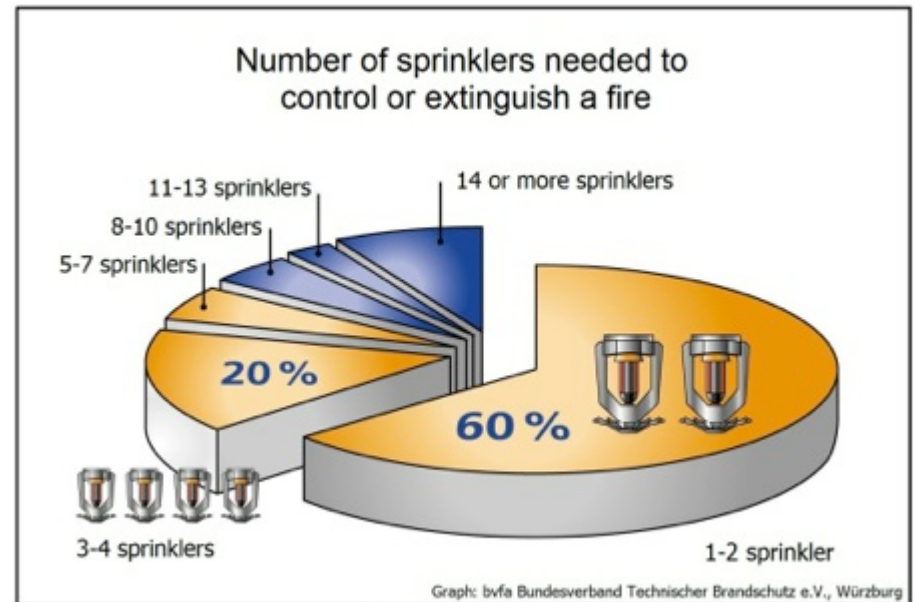
- Each sprinkler has a temperature-sensitive element and is individually activated by heat.



- Sprinkler systems are the ultimate fire safety technology available today. Experts agree the most comprehensive protection from fire is a total system of safety:
 - Early warning
 - Connection to fire brigade
 - Fire control or suppression

Effectiveness

- ❑ Sprinklers do not spray water all at once.
Only the sprinkler(s) closest to the fire will activate.
- ❑ In 80% of cases only 1 to 4 sprinklers are activated to control the fire.



Sprinklers save Lives

- ❑ Sprinkler systems incorporate a fire alarm enabling early arrival of the fire brigade which just has to complete the job, ensure extinguishment of any residual fire and assist with evacuation without risking the lives of firefighters and the lives of people in the building
- ❑ Sprinkler systems will help to keep the escape routes fairly free of smoke
- ❑ Sprinkler systems have a proven record in protecting people
- ❑ Over 100 years of experience have proven that sprinkler systems protect life and limit damage in a very effective way



Airport Gatwick



Shopping Mall Europa Passage Hamburg

Water consumption

- ❑ Manual fire fighting, on average, needs more than 8 times as much water as sprinklers to contain a fire. According to the Scottsdale Report, a 15-year study of fire sprinkler effectiveness, on average a sprinkler system uses 1.3 m³ of water to control a fire. Firefighters, on average, use 11.2m³.
- ❑ The likelihood that a sprinkler will accidentally discharge because of a manufacturing defect is extremely low.



About EUROFEU

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SPRINKLER SECTION

EUROFEU, the European Committee of the Manufacturers of Fire Protection Equipment and Fire Fighting Vehicles, is the umbrella organisation of Europe's national associations active in the field of fire protection. EUROFEU is active in the establishment and promotion of common policies on matters of mutual interest affecting all aspects of the fire trade in Europe.

The EUROFEU Sprinkler Section deals with the systems that use water as a fire-fighting agent, in particular sprinkler systems.

The European fire protection industry, represented through EUROFEU, has been committed to strict control of the quality of its products and services for a long time. Independent third party assessment has been an essential element to ensure the effectiveness and reliability of the solutions provided to our customers.
