HI-FOG®
water mist fire protection

High-Pressure Water Mist for High-Rise Buildings

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AGENDA

Fire Risks in High Rise Buildings

Functional Fire Safety Design

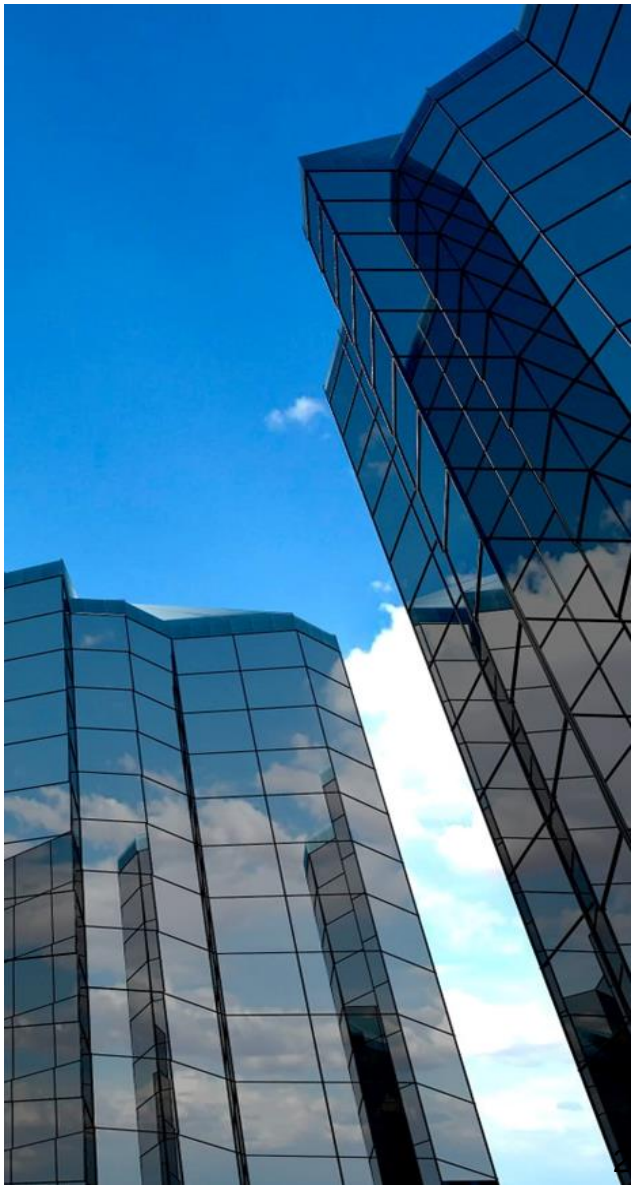
HI-FOG® For High Rise Buildings

Case: Vantage Point & Creekside Wharf

References

Summary

Questions



FIRE RISKS IN HIGH RISE BUILDINGS

FIRE RISKS IN A HIGH-RISE BUILDING

Feasibility assessment

A high-rise building is typically a multi purpose building with several fire hazard categories

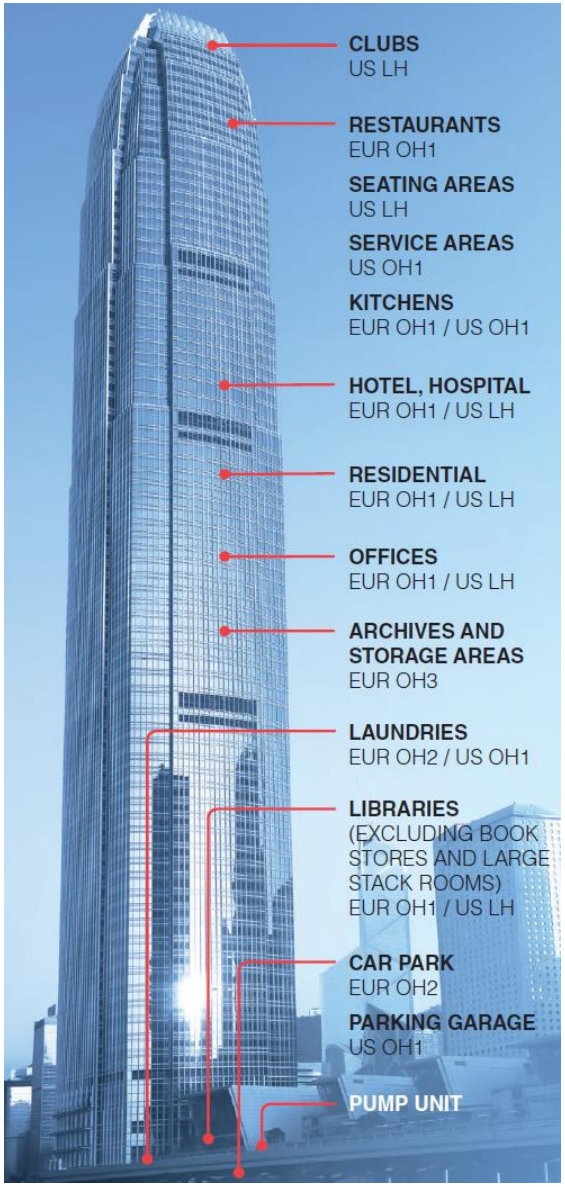
Fire hazard categorization based on occupancies

HI-FOG® system is tested and type approved in these categories

Water mist performance is proven to be equivalent or better than traditional sprinklers

Water mist is well recognized technology and complies with local standards

Benefits to installing a HI-FOG® water mist system



FIRE RISKS IN A HIGH-RISE BUILDING

Key factors impacting the fire safety design

Vertical shafts – fire spreads easier

Spreading smoke endangers evacuation and rescue operations

Limited means of escape

Greater potential for external spread

Complicated fire fighting efforts

Higher occupancy loads in design

FUNCTIONAL FIRE SAFETY DESIGN

HOLISTIC APPROACH IN DESIGN

Functional fire safety design

SUITABILITY

- Regulations, standards
- Approvals & fire testing
- FDS simulations
- Authority having jurisdiction

SYSTEM CHARACTERISTICS

- Blocking radiant heat
- Cooling properties
- Design guidelines

VALUE PROPOSITION

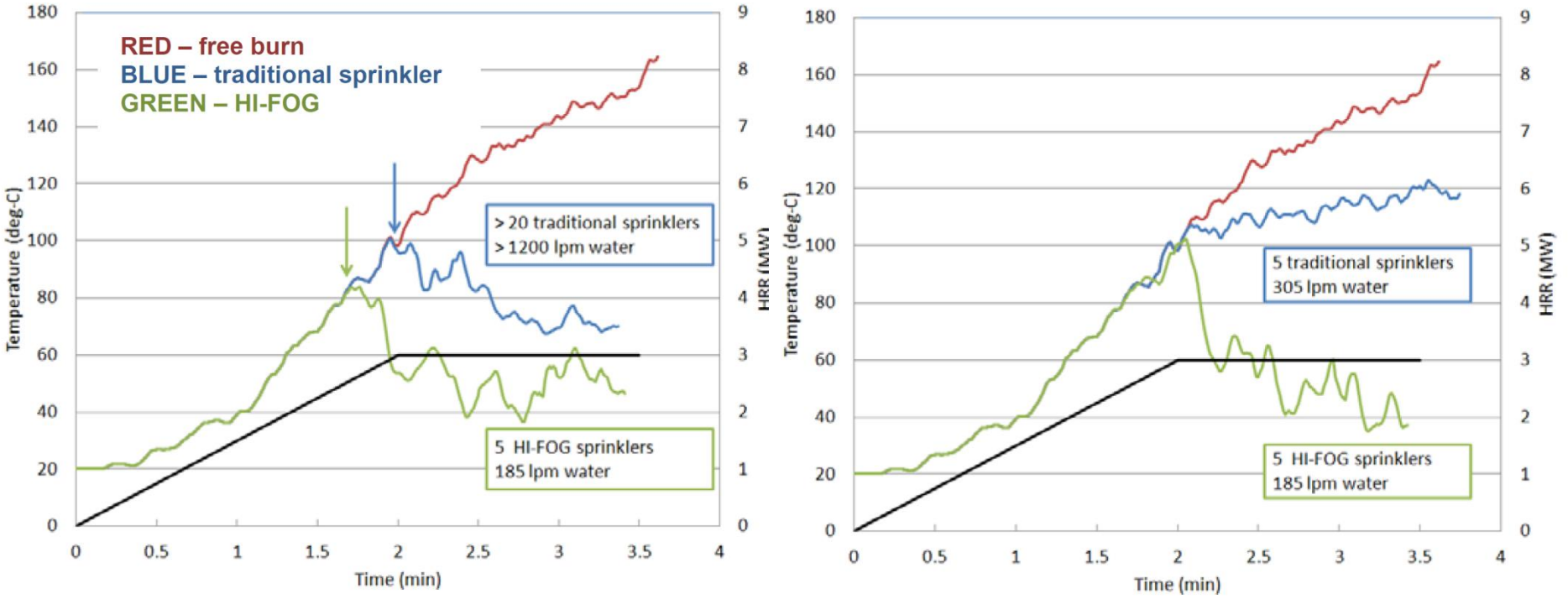
- Commercial viability
- Lifecycle costs

SAFE, SCALABLE & SUSTAINABLE

- No evacuation required
- Flexible installation
- Potable water only

FDS SUPPORTING THE DESIGN

Simulation comparison



Ceiling gas temperatures above the fire together with HRR curve (black)

Sprinklers activate individually according to their thermal characteristics (first activation shown by an arrow)

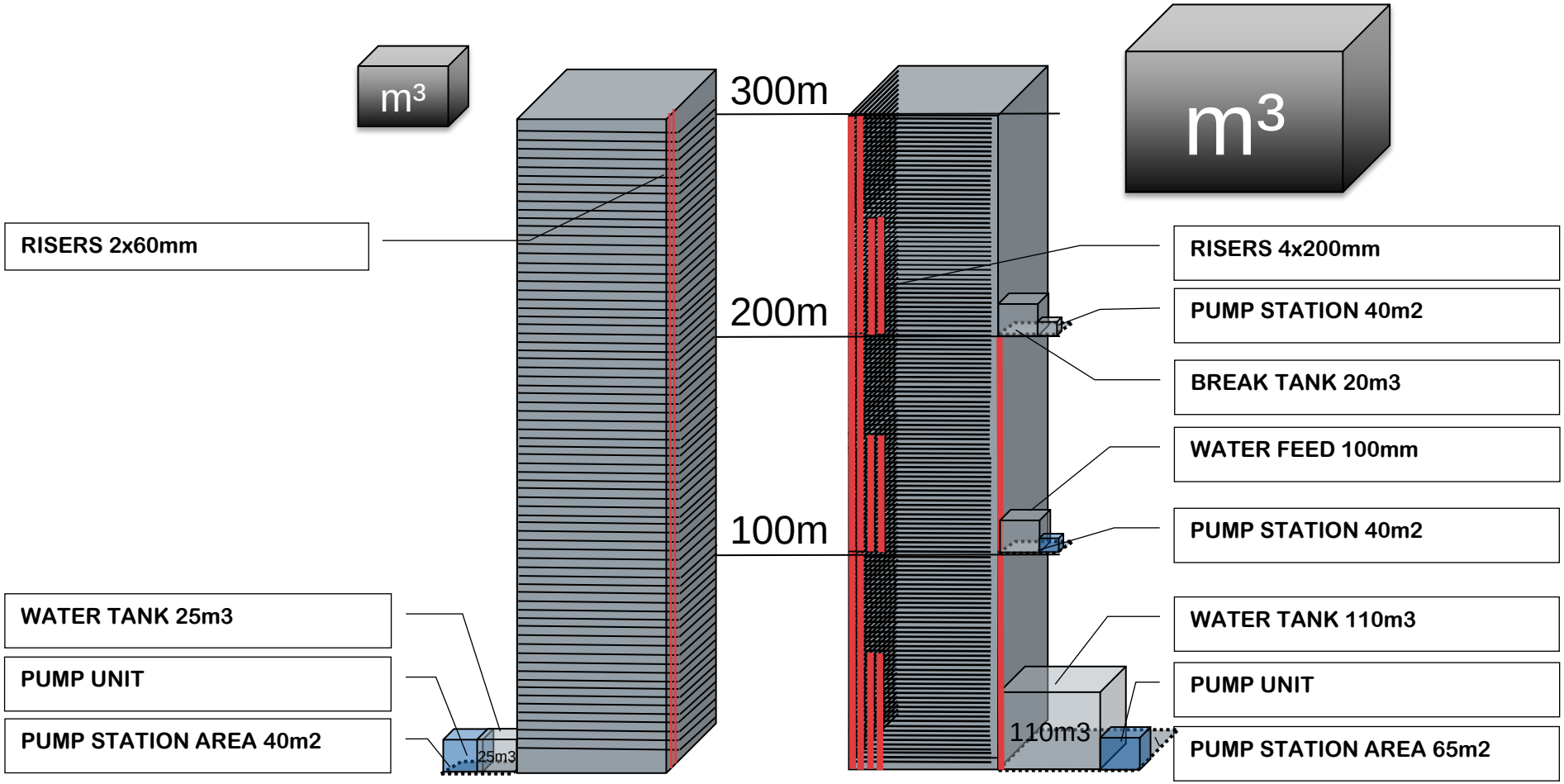
The same number of sprinklers is manually activated simultaneously in deluge mode.

HI-FOG® FOR HIGH-RISE BUILDINGS

TECHNICAL COMPARISON

High-Pressure water mist

Traditional sprinkler



SYSTEM BENEFITS

HI-FOG® Water Mist	Traditional Sprinkler
+ Water tank – 25m3	- Water tank – 110m3
+ Distribution network - smaller	- Distribution network - larger
+ Pump & tank room - single	- Pump & tank room - multiple
+ Components – longer	- Components – shorter
+ Flexible installation - yes	- Flexible installation - no
+ Water damage - reduced	- Water damage - increased
+ Lifecycle costs - lower	- Lifecycle costs - higher
+ System characteristics – increased	- System characteristics – limited
- Higher upfront cost	+ Lower initial investment

CASE STUDY – ESSENTIAL LIVING

1960’s office to residential retrofit

17 storeys / 59 meters

118 apartments

HI-FOG® electric pump unit

623 sprinklers

20 m^3 water storage tank

HI-FOG®
water mist fire protection

VANTAGE POINT - LONDON

Marioff
United Technologies

VANTAGE POINT

Customer Demand

Meet requirements of local regulations

High quality equipment & installation

Reduced footprint of plant equipment

Reduced water damage

Business continuity

Challenges

High rise (> 45m in height)

Traditional build, refurbishment

Design Criteria

OH1

VdS 3188

BS 8489

Dimensioning 216 m^2

AMAO 11 OH1 heads

Protected Areas

Apartments

Plant rooms

Generator set

Communal areas

New Build, Modular Construction

Block 1 - 22 storeys

Block 2 - 11 storeys

249 apartments

HI-FOG® modular pump unit

1693 sprinklers

36 m^3 water storage tank

CREEKSIDE WHARF - LONDON

CREEKSIDE WHARF

Customer Demand

Meet requirements of local regulations

High quality equipment & installation

Reduced footprint of plant equipment

Reduced water damage

Business continuity

Challenges

High rise (> 45 m in height)

Modular construction

Multiple linked buildings

Design Criteria

OH1, OH2, OH3

VdS 3188

BS 8489

Dimensioning 216 m^2

AMAO 15 OH3 heads

Protected Areas

Apartments

Plant rooms

Generator set

Communal areas

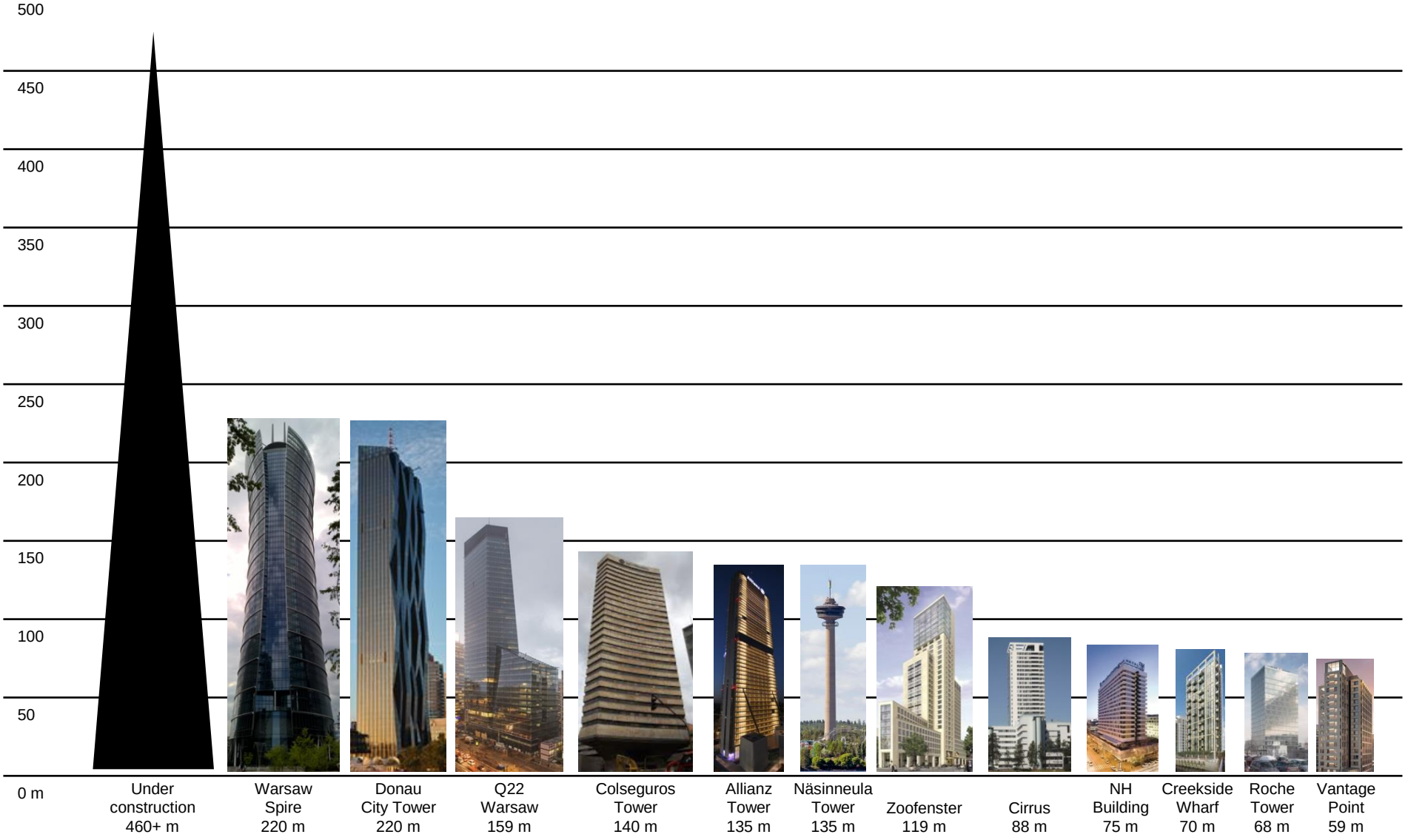
Car park

Bin store

https://www.essentialliving.co.uk/development/creekside-wharf

PROJECTS & REFERENCES

HI-FOG® HIGH RISE PROJECTS



SUMMARY

Proven benefits of high pressure water mist for high-rise buildings

Global reference sites demonstrating functional fire safety design

Performance verified in thousands of full scale fire tests

HI-FOG® is a safe, scalable and sustainable systems

Thank You & Questions

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