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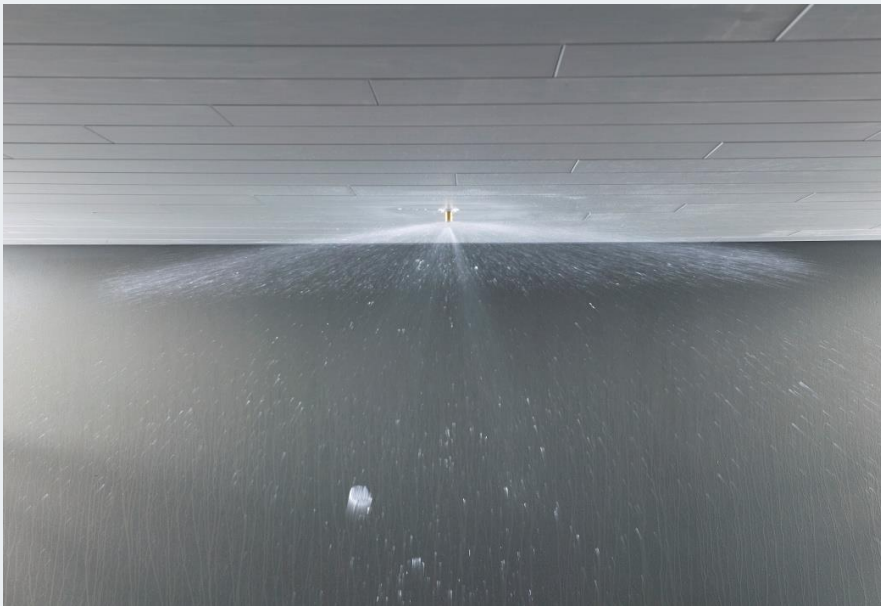
12. Marts 2015

SPRINKLER VS. MIST SYSTEM

	Conventional Sprinkler System	Water Mist System
Pressure at Nozzle	0.5 bar	4 bar
Way of extinguination	Cooling	Cooling and Oxygen suffocation
System configuration	Difficult	Simple
Price	Low	Low
Water consumption	5 l/min/m ²	1.6l /min/m ²
Pipe size	Large	Small
Recommended Pipe material	Steel	Stainless steel, Galvanized pipes
Working Pressure	< 12 bar	<16 bar
Fitting	Sprinklerfitting	Pressfitting
Max. Areal coverage pr. sprinkler	12m ²	25, 26, 30 m ²
Installation time	100 %	40 %

ACTIVED NOZZLE

Mist nozzle vs. sprinkler head



BENEFITS OF XFLOW SYSTEM

- * Less water and less energy- environment friendly
- * Rapid response when activated
- * Rapid fire suppression and control
- * Safe for personnel in occupied areas
- * Less water damage in case of fail activated
- * Plastic or thin walled press fritting for discreet pipe work configurations
- * Smaller pipe, large spacing, easy for adjusting pipe work in the building- leaving space for other installations
- * Smaller water tank
- * Small pumps that save on space and costs
- * Easy to conceal nozzle heads
- * Easy installation of the system

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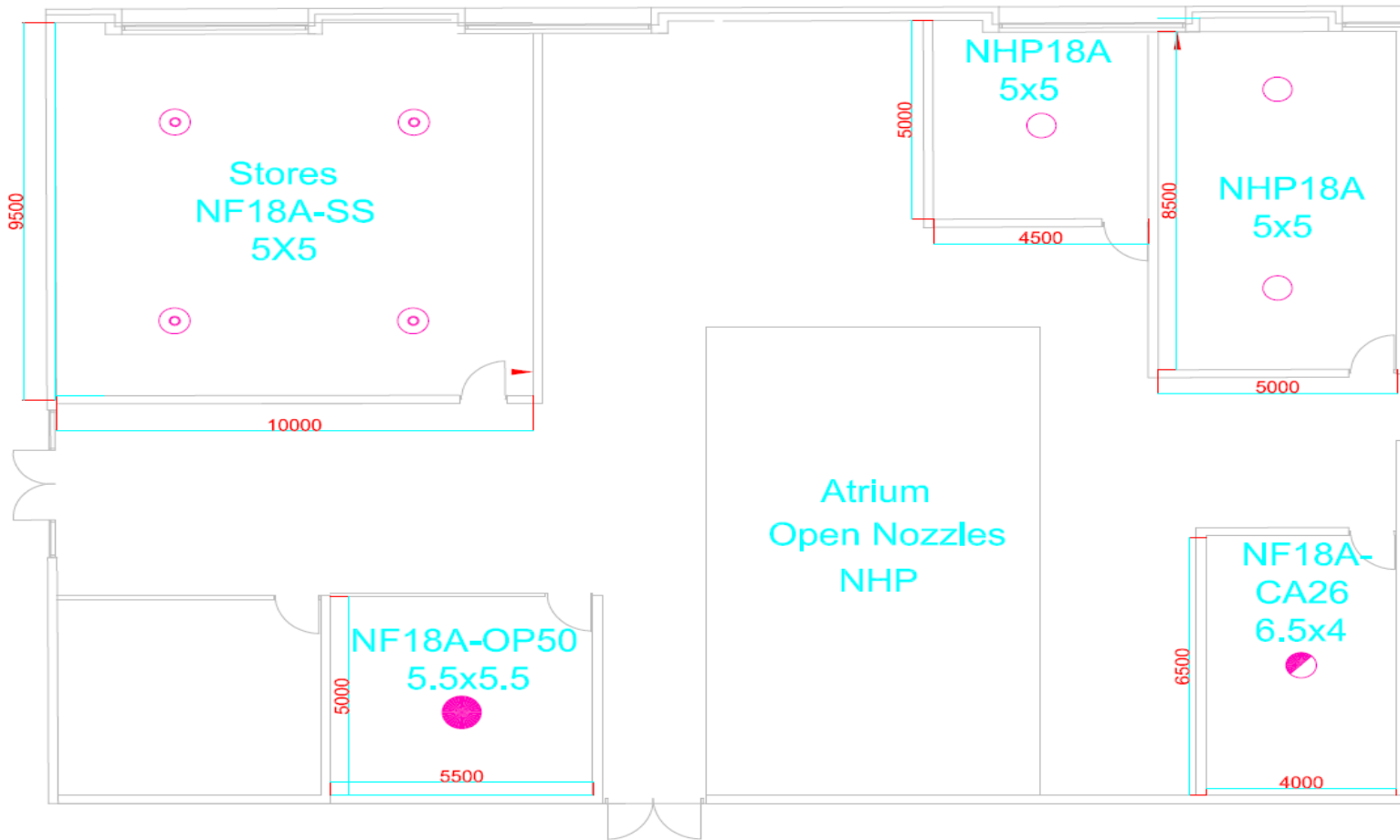
BENEFITS OF XFLOW SYSTEM

- * Low cost reinstatement after system discharge
- * Low maintenance costs

APPLICATIONS

- Hotel
- Day Care
- Hospice, Hospital
- Museum
- Office Building
- University
- Shopping center
- Industrial application

OVERVIEW OF NOZZLE



TURBINEHALLEN

ARKITEKT m.a.a.

KARL C. ROSENBERG RASMUSSEN A/S

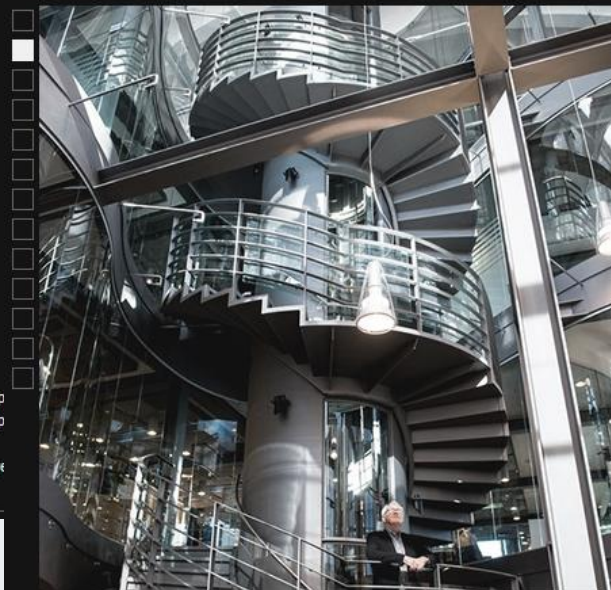
FORSIDE TEGNESTUEN AKTUELT ERHVERV BOLIGER UNDERVISNING



Turbinehallen

Ombygning og renovering af den gamle Turbinehal på Middelfart havn samt opførelse af fire nye punkthuse.

Opført år: 1. etape op
Bygherre: Selfrent Ap
Areal: 4600 m²
Sted: Gl.Banegårdsve



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Opført år: 1. etape opført 2013
Bygherre: Selfrent Aps
Areal: 4600 m²
Sted: Gl.Banegårdsvej, Middelfart

TURBINEHALLEN



OBH Rådgivende Ingeniører A/S
Agerhatten 25
5220 Odense SØ
Att.: Carsten Heuck Jørgensen

19. februar 2013
PBN/NIB/-
Antal sider: 3
RMG sagsnr.: 18148

Vedr.: Vandtågeanlæg i Turbinehallen i Middelfart

Det forudsættes endvidere at:

- Der som aftalt snarest fremsendes tegningsmaterialer, der dokumenterer fordelingen af vandtågen hen over glasadskillelsen
- Der i forbindelse med det endelige sprinkler (vandtåge) projekt dokumenteres, at de forudsætninger, der fremgår af diverse certifikater er opfyldt
- Diverse forudsætning i h.t. drift og egenkontrol m.v. af vandtågeanlægget indskrives i den brandtekniske dokumentation



Lloyd's Register Verification Limited

71 Fenchurch Street, London, EC3M 4BS
Telephone 020 7423 2416 Fax 020 7423 2053
Email med@lr.org

Page 8 of 11
Document number MED 1350097
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 26 July 2013	Quote this reference on all future communications LDSO/SFS/TA/MEH/MF
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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No.MED 1350097

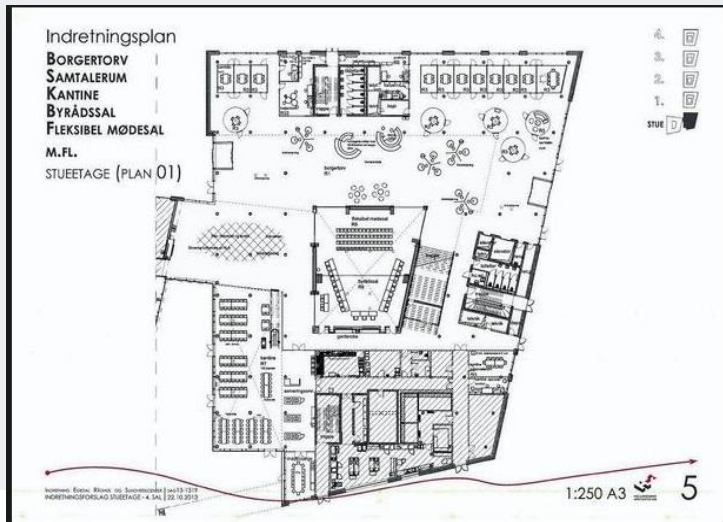
15. The pump unit shall have on the pressure side a mess strainer (mesh size No. 30 BSI-410, 500µm).
16. The number of spare watermist nozzles which are to be specified for each application is to be in accordance with Table 8-1.

Table 8-1. Required Number of Spare Nozzles

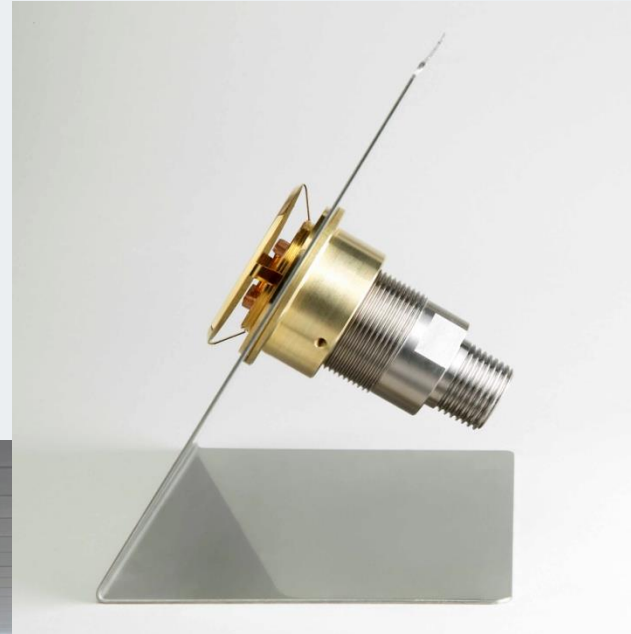
Number of Installed Nozzles	Spare Nozzles Required
≤300	6
300 to 1000	12
>1000	24

17. The use of the following system arrangements must be specially considered at the design stage in all cases:
 - 17.1 Nozzle types and arrangements for the protection of windows.

EGEDAL RÅDHUS



CLOSED NOZZLE IN THE CEILING



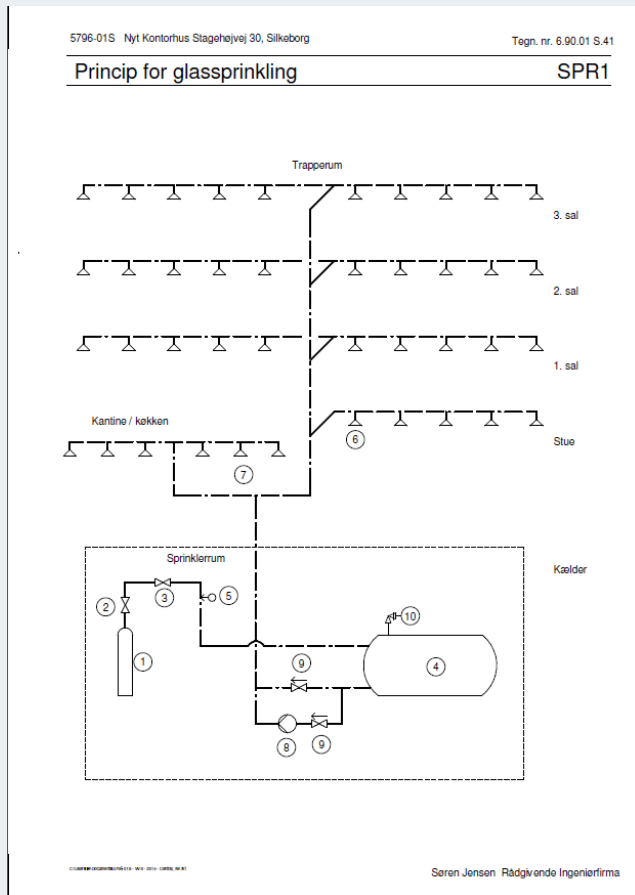
OVERVIEW OF NOZZLE



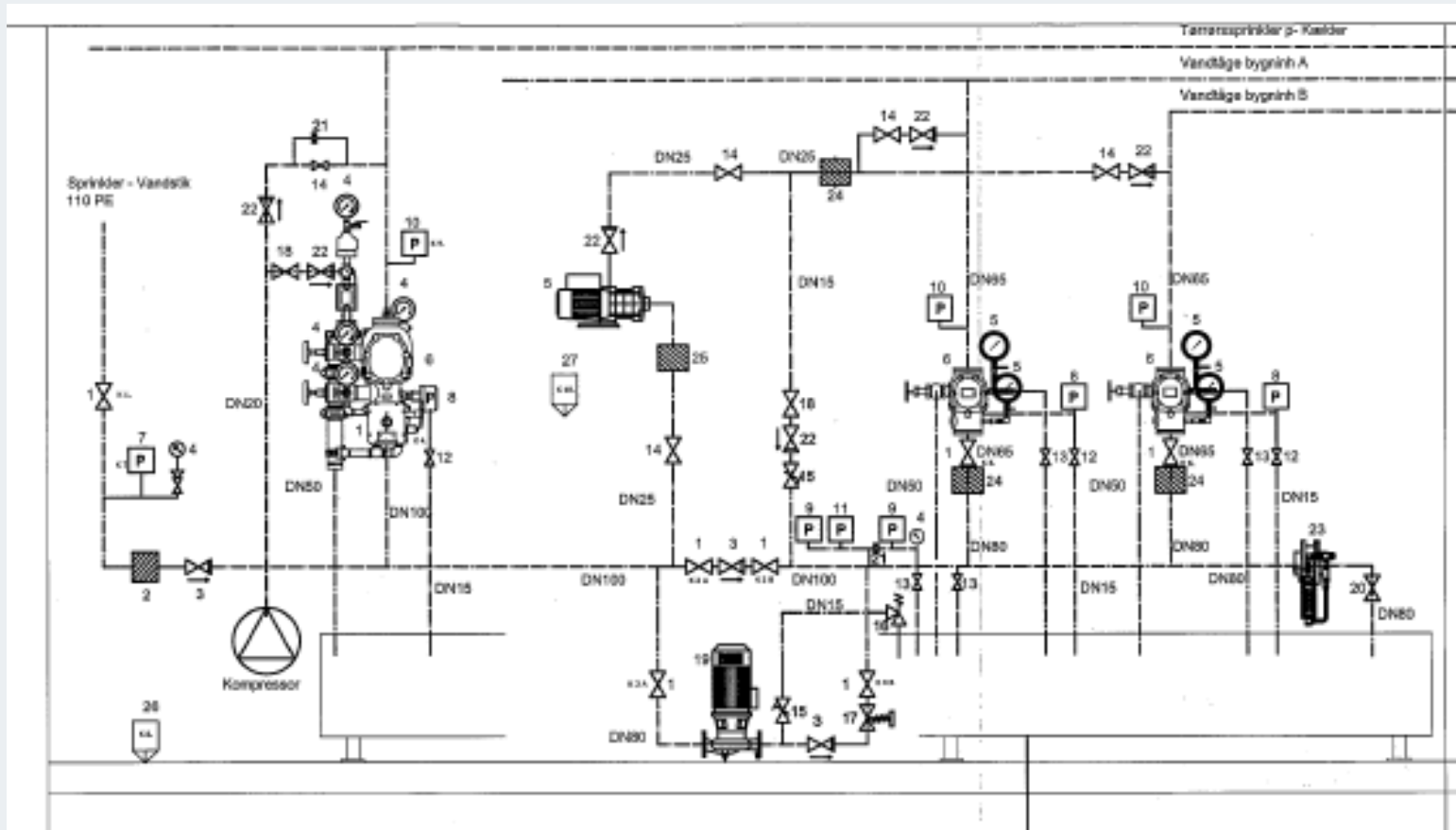
OVERVIEW OF NOZZLE



STANDALONE SYSTEM WINDOW PROJECTION



TECHNICAL ROOM



PUMP SET



SEB BANK

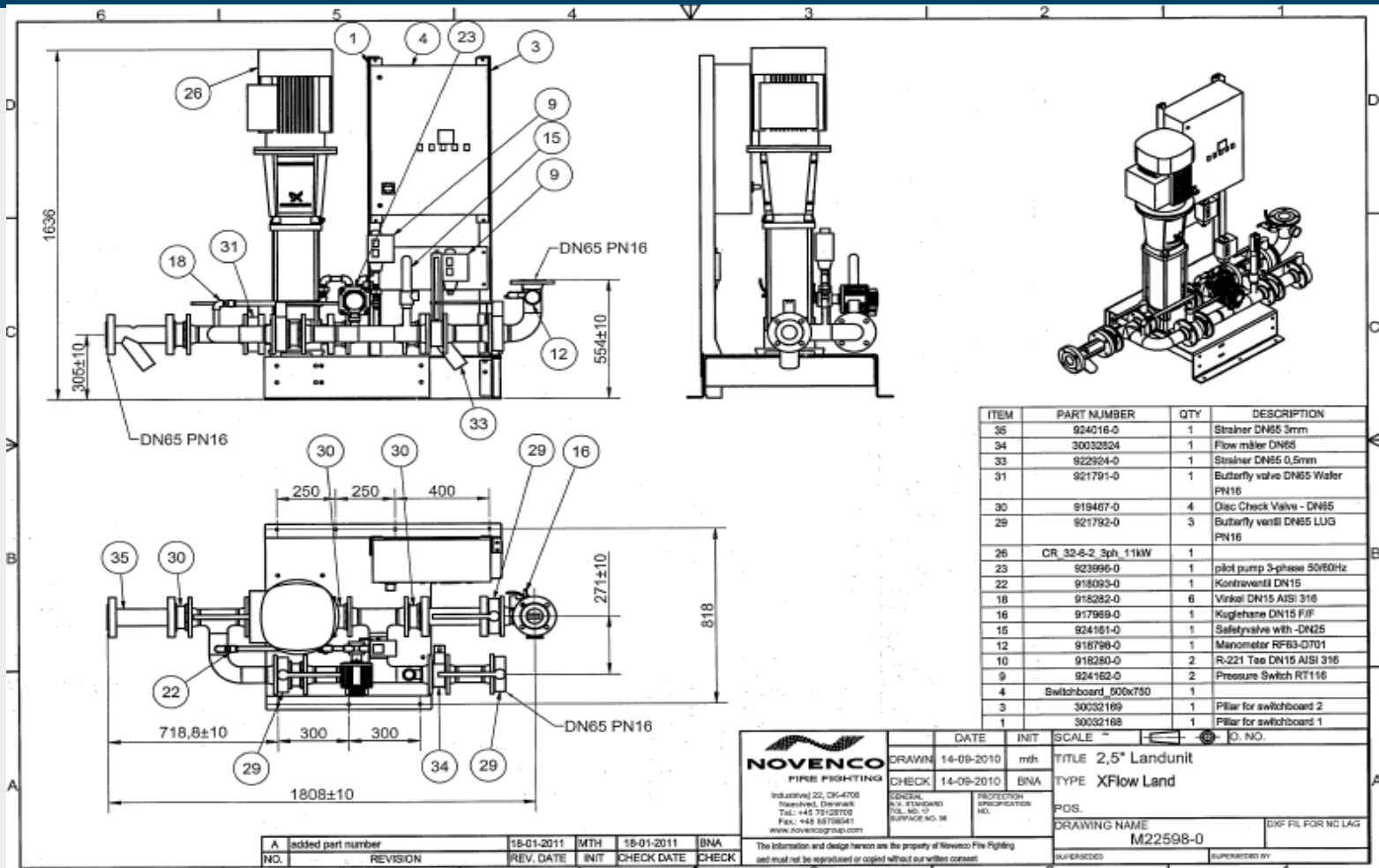


Novenco Water Mist system and sprinkler system

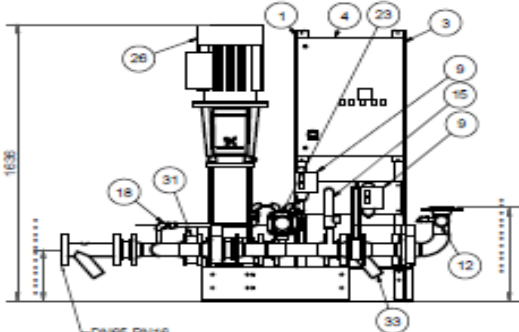
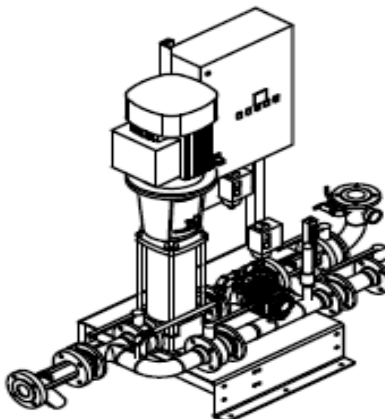
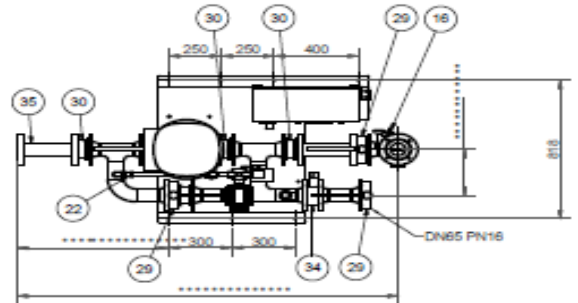
OFFICE BUILDING



PUMP SET DN65



PUMP SET DN

	1	2	3	4	5	6																																																																																																																																						
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B	<p>Weekly Testing of System Call Fire-alarm central and inform of the testing</p> <ol style="list-style-type: none"> 1. Read the pressure on manometer (Pos.12) 2. Open the test valve (Pos.29) 3. The pilot pressure drops and pilot pump (Pos.23) will start. 4. After 10 seconds pilot pump (Pos.23) will stop and the main pump (Pos.25) will start 5. Check the alarm is indicated as on the pump control panel (Pos.3) 6. Close the test valve (Pos.29) 7. Observe Control Panel is operational 8. Stop Main Pump (Pos.3) by turning S01 to "0". 9. Read the pressure at the manometer (Pos.12). If the pressure is over the design pressure, open test valve (Pos.12) slowly until the set design pressure. 10. Re-establishing the pump control panel by the following procedure <ul style="list-style-type: none"> • Turn main pump switch S01 to "AUTO" • Check pilot pump switch S04 to "AUTO" 11. Control all valves positions correct with diagram 																																																																																																																																											
C	<p>Pos. Description - State</p> <ol style="list-style-type: none"> 1. Main Pump stop 2. Butterfly Valve with Limited switch - Open 3. Butterfly Valve with Limited switch - Closed 3. Butterfly Valve with Limited switch - Open 3. Butterfly Valve with Limited switch - Closed 12 Pilot Pump - Maintain system pressure by stop/run 16 Manometer System pressure 22 Drain Valve - Closed <p>Activated : One or more nozzles are activated, the system pressure is reduced.</p> <p>Pressure switch Pos.9 activate the pilot pump.</p> <p>If the Pilot pump cannot maintain system pressure within 10 second, main pump is activated, and fire alarm signal is given.</p> <p>If system pressure continue to decrease below the setting value in pressure switch (Pos.9), the main pump unit will be activated by Pressure switch (Pos.9), and fire alarm signal is given. (As a back-up to the pilot alarm described in the above square)</p>																																																																																																																																											
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- Areal 32000m²
- Består af flere atrium
- Antal dyser: 1500 stk

Markant trekant ved åen



Byggeriet får hovedindgang ned mod vandet, hvor der skabes en ny central plads

Projektet omfatter 20.000 kvadrater til universitet og 12.000 kvadrater til en kommende forskerpark og et p-hus. Første etape af universitetsbyggeriet består af et trekantet byggeri på 13.600 kvadrater, mens anden etape på 6.400 kvadrater består af et byggeri langs trekantens sydside.

Den markante trekantede bygning rejses tæt ved Kolding Å med hovedindgang vendt mod en ny central plads mellem bygningen, åen og gaden, der hedder Buen.

Facaden vil fremstå med et diagonalt system af sprosser, der gengiver den trekantede struktur i hovedgrebet. Det giver et meget fleksibelt lysindtag og flere muligheder for solafskærmning.

Atrium skaber åbenhed

Der er lagt vægt på lys, glaspartier og åbenhed i bygningen, som rejser sig i fem etager. Et atrium roterer ned gennem etagerne og spreder et naturligt lys fra oven. Det fem etager høje atrium bliver et livligt mødested for de studerende samtidig med, at det samler de fem plateauer med undervisningslokaler, studiepladser, grupperum, bibliotek, kantine og kontorer.

I atriet forskyder trapper og svalegange sig ind over hinanden og skaber en særlig dynamik, hvor trekantede former kan ses op igennem hele bygningen.



UNDERGOING PROJECT KUA 3

- Areal 50.000m²
- 10% sprinkling over nedhængte lofter
- Antal dyser: 4600 stk.

KUA 3

Projektet udgør, sammen med KUA 1. og 2. byggeafsnit, en kerne i Søndre Campus.

📍 NJALSGADE 80-90, 2300 KØBENHAVN S

↪ VIS PLACERING PÅ KORT



Bravida

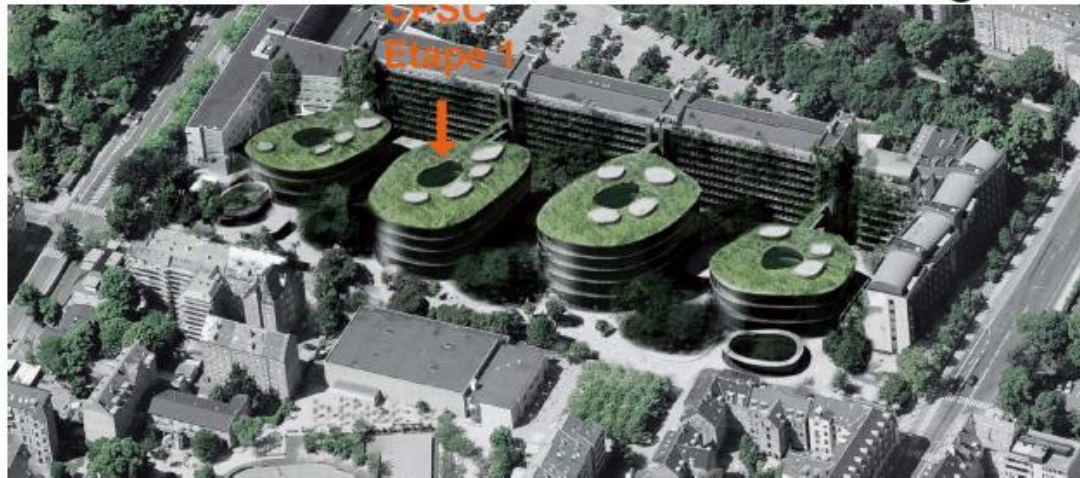
UNDERGOING PROJECT

- Areal 15000 m²
- 10% sprinkling over nedhængte lofter
- Antal dyser: 1200 stk.

KØBENHAVNS UNIVERSITET
DET NATUR- OG BIOVIDENSKABELIGE FAKULTET



Copenhagen Plant Science Centre opføres på Bülowsvej



CPSC 1 placering (Illustration fra skitseforslag)

UNDERGOING PROJECT

- Areal 20000 m2
- 10% sprinkling over nedhængte lofter
- Antal dyser: 1500 stk.



END