1. Manager in FM @ Brüel og Kjær

Existing policies:

- Smoke/fire detectors to set off fire alarm and start sprinklers.
- VideoSurveillance (time and weekday based): Records video.
- Access Control on all external doors and in the calibration and clean rooms.
- In the Calibration and Clean rooms air quality (constant) environment is maintained using humidifiers.
- MotionSensors are used in all toilets to turn lights on and off.

New policies:

- The skylight windows can be opened manually by a switch on a nearby wall. Since there is no rain sensor on the window, if forgotten, water damage can be caused. (If it rains outside, then close the window. When workday is over close window.)

- Room radiators have thermostats that senses the ambient temperature and adjusts the radiator accordingly. During winter, workers might find the room 'stuffy' and opens some windows, without bothering to turn down the radiators. The thermostat treats this as the room is getting colder, and turns up the heat. This is a huge waste and very bad for human comfort. (If the radiators are on, and windows are opened then turn off radiators.)

- Windows should be automatically opened based on inner room climate. (temperature, air quality)

- All offices, hallways, university should have motion sensors to control lights.

- Use light sensors to get natural light in the day time and use that to regulate brightness.

- Monitoring of clean rooms and calibration room. if temperature, humidity goes over the operating temperature, set off alarm in the janitors office and send sms/msg to person on duty.

- Log all data in a repository which can used to feed a visual monitoring system and also for easy problem backtrace.

- The central AccessControl system has actuators on only on all door to the outside. (If CLOSING_TIME then SecurityDoors-->Close. If cannot close door, then send sms with alarm to the staff so they can remove obstacle.)

- If work day is over, then enumerate through all windows, skylights and exterior doors. If any of them are not securely closed and locked, then send an accumulated list to the staff.

- Generally it would be nice to have rules/policies working not only by week/time. should also set specific rules for specific rooms. clean room - people work past work hours sometimes.

- The existing control system (CTS) for ventilation is hard to understand. The GUI is made like an electrical diagram, and is not user friendly. Moreover, the temperatures shown in the program is from sensors in the ventilation ducts, not in the room themselves, making it very hard to regulate them, since you'll have to change the settings and then wait for 10-15 minutes. Then you'll have to go to the room and manually hold a thermometer before going back and repeat this.

2. Employee in FM @ Københavns Tekniske Skole

Existing policies:

- AccessControl (time and weekday based): Opens and closes the gate to the school. Can be manually re-programmed and also de-activated. Allows for holydays.

- VideoSurveillance (time and weekday based): Records video.

- RemoteWorkStation (manually): An IT employee can remotely shut off computers, if people forget to turn them off before they leave.
- MotionSensors are used which can be annoying, especially when the light turns off in the middle of a parental meeting, and they have to flail around with their arms to see each other. Should be based on week/time and maybe using Infrared instead of motion.

New policies:

- RemoteWorkStation (automatically): Should be able to set time and weekday for the computers, so they shut off by themselves.

- Today skylight windows can be opened manually by a switch on a nearby wall. There is curtains underneath them, which can also be controlled by a nearby switch. However, people sometimes forget to close a the window, because the curtain is hiding the window. Since there is no rain sensor on the window, the curtain gets ruined by the water and needs replacing. (If it rains outside, then close the window. When school closes, roll back skylight curtains.)

- Room radiators have thermostats that senses the ambient temperature and adjusts the radiator accordingly. During winter, students might find the room 'stuffy' and opens some windows, without bothering to turn down the radiators. The thermostat treats this as the rool is getting colder, and turns up the heat. This is a huge waste and very bad for human comfort. (If the radiators are on, and windows are opened then turn down radiators.)

- By exchanging the room raditor thermostats with centrally controlled temperature sensors and radiator actuators, it will be possible to make a finer grained control of the rooms. Individual room temperature might be possible, using motion/infrared sensors indicating if the room is in use or not. If not in use the heat can be driven down. Should also be possible based on week/time.

- There are gauges on the three main resources in the school; electricity, gas and water. Sometimes, especially after weekends or holidays, an abnormal large usage of water can be registered. Someone might be stealing water for carwashes, or similar. There is a need to shut down the supply if a usage is too high. Should work based on week/time.

- The central AccessControl system has actuators on only a few doors. However, if someone has but in place an obstacle, no notice is given to the people working at the scool, meating that they provide false security. (If CLOSING_TIME then SecurityDoors-->Close. If cannot close door, then send sms with alarm to the staff so they can remove obstacle.)

- If the school is about to close, then enumerate through all windows, skylights and exterior doors. If any of them are not securely closed and locked, then send an accumulated list to the staff.

- Generally it would be nice to have rules/policies working not only by week/time, but also by integrating into the existing systems for room planning and student data. (Flex, ElevPlan). We would not like to have a new system where we have to enter everything again. Without integration, there is no realistic scenario for usage.

- The room heating should be driven partly by the heat that is entering the windows.

- The school have 20 sky lights where 5 is smoke-escape hatches in case of a fire. These 5 can be controlled centrally, the rest can't. There are also a hallway with a glass roof on 1st floor but the windows on that is only manually operated. This rule is needed (If temperature on hallway is above 25 then open the windows. Close the windows in case of rain.)

- General equipment, especially projectors, are sometimes left on by students and teachers. They should be turned off based on week/time and room planning.

- The existing control system (CTS) for ventilation is hard to understand. The GUI is made like an electrical diagram, and is not user friendly. Moreover, the temperatures shown in the program is from sensors in the ventilation ducts, not in the room themselves, making it very hard to regulate them, since you'll have to

change the settings and then wait for 10-15 minutes. Then you'll have to go to the room and manually hold a thermometer before going back and repeat this.

3. Chief Consultant @ Bygningsstyrelsen

Varme + ventilation med CTS (central tilstand styring)
- Sneider Honywell-produkter
- Gas, fjernvarme, osv.
- Ift. udetemperaturen., en kurve - i cts. "Når det er 0 sende man 45 grader, når"

Ventilation
- Nogle steder efter rum-temperatur. Nogle steder.

Varme
- Fjernvarme, primært
- Få med damp.

Helligdags-program
- Mest kontorejendomme - lav blus i weekender, ferier og heligdage.
- Sænker temp stopper ventilation. Også døgn basis i CTS. 7-17 ventilation.

Drifter statens kontorejendomme + universiteter (har egne driftsaftdelering.) + politi, domstole.

Udevendige persienner, solafskærmning (ift. en vejrstation) styrer hvornår de går ned nogle gange integreret i cts, eller standalone.

Drifter stærkstrøm, varme osv.

EBS - FN Byen Marmorkaj - der sidder følere (motion sensors), integreret i netværker - kan styre lys og solafskærmning og ventilation.

- Motion sensors mest til lys på gange, kontorer osv.
- Akkustiske sensorer - de bruger det en del. Efter kl. 9 ikke har været aktivit i en time, så slukkes.
    - Lys på trappeopgange.

FN Byen - Marmorkaj

Problem med ældre bygning
- for dyrt at installere
- for dyrt at integrerer (så skal det være trådløse systemer)
- wifi er ikke god nok endnu, for mange ting der forstyrre radiator termostater.

Lukkede CTS systemer! bundet af leverandør

Der er systemer på markedet med åbne standarder ()

Skabe konkurerrence
- Service delene
    - Programmering + Installerer et nyt ventilationsanlæg integreres med CTS.

CTS kræver uddannelse (minimum en halv time.)
- CO følere

4. Administrative Officer @ UNI-C

Existing Policies

- Light motion - Hørt andre der sige at vifte med arme og ben er irriterende. Måske efter et vist tidspunkt, idag er det hele dagen det virker sådan.
- Blinds hvis det stormer; Fint nok - sikring for dem. Ikke til anden gavn.
- Printerne går i sleep mode, og skal vækkes før man f.eks. kan scanne.

New Policies

- Gå automatisk ned når solen står lige ind på vinduet - skal kunne overrules. Det har noget med lysstyrken at gøre og ikke nødvendigvis temperaturen, da der bliver alt for lyst til at kunne arbejde. Går op igen når solen er normal igen.
- Når en medarbejder kommer ind i bygningen, kunne det være rart at computeren starter, så man ikke skal vente.
- Ville gerne optimerer så computerne slukkede automatisk for at spare energi, men der er mange problemer forbundet med det. Nogle medarbejdere har brug for at computerne kører hele tiden, pga. små arbejdsservere osv, andre har brug for at kunne tilgå den via VPN/fjernadgang, og hun kan ikke overskue om det kan lade sig gøre teknisk. Alle programmer skal være åbne med indhold. Må godt tænde og slukke hver gang man kommer/går.
- Kan den tætteste printer vækkes af sleep mode, når en medarbejder kommer ind om morgenen?
- Forskellige adgangskoder.
- Måske lys på kontoret når man bruger sit adgangskort?
- Vil have en cafe latte på borden når man ankommer om morgenen.
- Automatisk toilet-bræt-nedslå-mekanisme når man forlader toilettet.
- Hver morgen/nat skal opvaskemaskinen starte, hvis den er fyldt (enten vægt eller sensor). Problematik fordi folk ikke tømmer den, men stiller beskidt ind igen, hvilket så gør at den næste vasker det hele én gang til.
- Automatisk stille telefonen videre, når man forlader bygningen eller forlader sin plads. Men skal kunne virke med ens arbejdstider, så den ikke stiller videre når man har fri, men kun til f.eks møder osv. Det skal være muligt at angive forskellige numre den skal vidrestille til, evt. baseret på tid man er væk, eller om man forlader bygningen.