

The image shows a modern, dark-colored building at dusk. The sky is a deep blue. The building's facade is composed of large, multi-paned glass windows that are illuminated from within, creating a warm, yellow glow. The interior spaces visible through the windows appear to be a hallway or a common area with white walls and doors. The foreground is a dark, textured surface, possibly gravel or a lawn, which is mostly in shadow.

chromaZenit

# Chroma Zenit Circadian Lighting

Psychiatric ward in Aabenraa

# Chroma Zenit Circadian Lighting at the Psychiatric Ward in Aabenraa

The new psychiatric ward consists of eight sections with a total of 115 beds and joint functions. This makes the installation of Chroma Zenit Circadian Lighting to the most extensive so far in psychiatry.

The Region of Southern Denmark has taken a new turn in the construction of the new psychiatric ward with regard to lighting. They chose Chroma Zenit Circadian Lighting from Chromaviso - a further development of dynamic lighting that supports the body's natural circadian rhythm and ensures the proper lighting.

"Chroma Zenit Circadian Lighting becomes a natural part of the building, and when you walk on the site, you can clearly feel the effect. Furthermore, the light optimises the possibilities of each room – from relaxation to conversation or pause, as you can reset the atmosphere and create another one with the lights. This is brand-new", explains Peter Houd from White architectural company, which is responsible for the construction.

## Lightning fast reaction time

"A complex assignment", explains Søren Busch Madsen, project manager from Wicotec Kirkebjerg.

"The project is very large and challenging, and it is the first time that we have handled such an extensive integration between two systems - our KNX system and the lighting's DMX system. This has worked out even better than expected, and Chromaviso has just carried out contractual delivery on time and without any remarks."

That the task of integration has been fulfilled can be measured through the reaction time. One of the demands from the developer right from the beginning was high speed - from you press a button until the light reacts.

"We see a lot of cases where it takes too long before the light changes. Today, this is one of the things I am proud of about the Aabenraa project. The reaction time is very short – 3/10 of a second or 'as you are pushing'. This is important in emergency situations where you need to switch to full light intensity immediately," explains Søren Busch Madsen.

## Specially developed night light

The dimmed night light contains all colours except the ones that primarily affect the body's waking state during the night. This means that the staff has good visual conditions without affecting the patients' circadian rhythm and sleep quality. The lighting uses the latest technologies within LED with energy efficient light sources.

## User-friendliness and safety

The operation of the light consists of central touch screens in the staff room as well as push button in the rooms.

I am thrilled with the panels. With these panels, the light becomes user-friendly

Peter Houd, architect

"I am thrilled with the panels. In the old days, it was on-off. Then came the dimmers and it required a degree in engineering to turn on the light. With these panels, the light becomes user-friendly", explains architect Peter Houd.

The staff has an overview of all rooms and can set the lighting according to the treatment, atmosphere or activity.

## A reliable solution

Because it is a psychiatric hospital, there has been a number of special circumstances.

"The light fittings have to be protected against vandalism, making sure that they cannot be smashed, used as a weapon or to hurt yourself. Here, Chromaviso found a good solution at a reasonable price. They have a professional approach, they take on the challenges right away and find a solution," explains Søren Busch Madsen.

"We have not had many errors along the way, and we have used tested and documented components. The system functions stably today, and I expect the solution to be reliable in the long term", says Søren Busch Madsen.

## Next step: Training of the users

The psychiatric hospital was taken into use in September 2015, and the users have been trained in using the light and the last fine adjustments are in place.

"It looks good down there, and I think this is a system we can be proud of and get recognition for" explains consulting engineer Hans Peter Smidt from Norconsult/Wessberg, which is the company responsible for the implementation of the project.



## Research of the effect

– Implemented by CoLab and Region of Southern Denmark

### Patients – effect

- Reduced night activity
- Better sleep
- More cosy atmosphere
- More calmness

### Staff - effect

- Better sleep
- More energy
- Physical well-being
- More calmness



Health-promoting lighting solutions – day and night



“ The circadian lighting is good when I work at night because it gives a much better transition from day to night. I feel I've got more energy in general - probably because I fall asleep easier when I come home after a night shift ”

Hanne Bendixen, nurse



## Benefits of Chroma Zenit Circadian Lighting

Chroma Zenit Circadian Lighting support the natural circadian rhythm of patients and staff. The lighting rises with the sun, is most intense in the middle of the day. And at night, a specially designed broad-spectrum night light is turned on.

- Proven effect in relation to factors such as sleep, well-being, appetite and behavior.
- Specially developed night light ensure staff optimal lighting while the body's circadian rhythm is not disturbed.
- Clinically validated light protocol that unites considerations for the patient category and the rhythm of the ward.
- Ergonomic light setting makes it possible to use lighting actively in activities and treatment.
- User-friendly control panels, such as touch screen or push button.

## Lighting options

The operation is specifically designed to ensure high user satisfaction. There is a possibility of different settings - tailored to the needs of each room.

**Aabenraa psychiatric hospital uses the following control panels:**



## Chromaviso – experts in health-promoting lighting solutions

Chromaviso is highly specialized in health-promoting lighting solutions for hospitals. Since 2006, in collaboration with leading physicians, researchers and professionals, we have developed innovative solutions that improve the working environment, safety and quality for the staff, and improve the patient's well-being and sleep, including reducing depression, fatigue and hospitalization. Our solutions are customized to the individual project, based on the latest technologies and documented in international research. We have implemented more than 1500 solutions to more than 100 hospitals, psychiatric wards and nursing homes throughout Scandinavia, and we are recognized for our high level of reliability and user satisfaction.

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