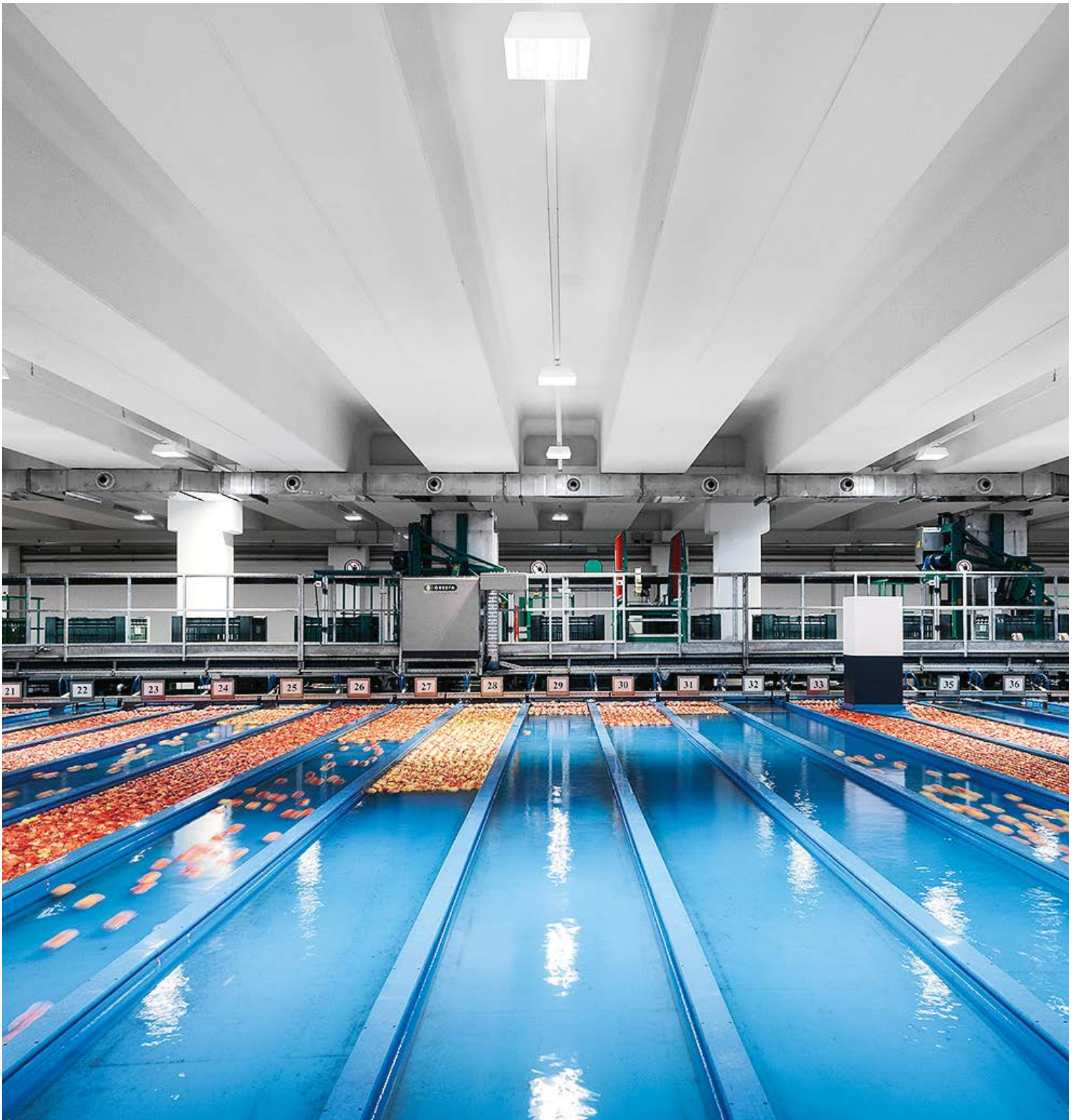


**Texel Fruit
Cooperative**

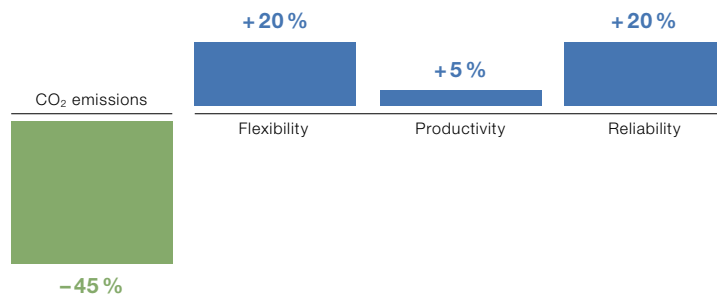




Improved lighting quality despite lower consumption

The Texel Fruit Cooperative collects at its Naturns location all apples harvested by its 350 members cultivating a gross area of 1,285 hectares, in order to sort out and pack up the apples for marketing all over the world. In line with the principles of quality and efficiency, the halls for sorting apples and storing cardboard boxes were refurbished in terms of lighting technology. Not only did the existing lighting system – moisture-proof luminaires fitted with 58W fluorescent lamps – consume too much energy, but it was also unable to provide the required illuminance levels. Providing 500 lx for the task areas and 300 lx for the conveyor belts is no problem for the new CRAFT LED high-bay luminaire – despite requiring only one third of the original number of luminaires. Two additional tasks are fulfilled by SCUBA LED moisture-proof luminaires suspended from TECTON trunking: they provide reliable emergency and passageway lighting.

zumtobel.com/industrialighting



Texel Fruit Cooperative, Naturns | IT

Design and construction management:

Dr. Ing. Siegfried Pohl, Latsch | IT

Electrical consultants: M. & N. Plan Consulting, Burgstall | IT

Electrical engineers: Elektro Gafriller, Barbian | IT

Lighting solution: CRAFT 330 Wide Beam high-bay LED luminaires, SCUBA LED moisture-proof luminaires for emergency and passageway lighting, TECTON trunking, ONLITE CPS central battery, daylight-based control system

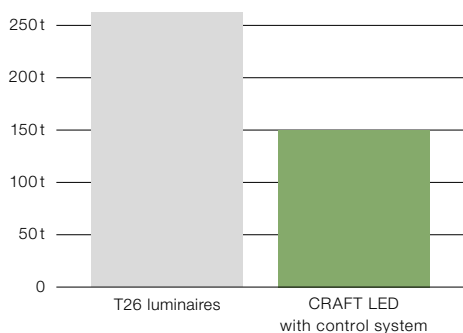
1. CO₂ efficiency and cost efficiency

-45% CO₂

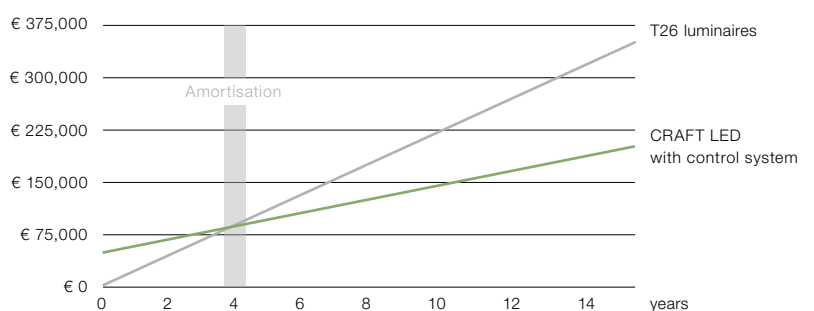
An efficient trio: Daylight, LED and Maintenance Control

Before refurbishment, the Fruit Cooperative's sorting and storing facilities included 300 luminaires fitted with an equal number of 58W T26 fluorescent lamps. Today, a lighting level of up to 500 lx is achieved with fewer luminaires: 133 CRAFT LED high-bay luminaires with 144W each reduce the annual energy consumption from 27.25 kWh per square metre to 15.61 kWh, which is highly efficient. In addition to the existing daylight-based control system, the Maintenance Control function of the DALI-dimmable LED luminaire makes a valuable contribution. In normal operation, the CRAFT luminaires are presently dimmed down to 80 percent. In order to keep up the required illuminance levels in spite of ageing, they are checked on a regular basis and the dimming levels adjusted accordingly.

CO₂ emissions over service life (15 years)



Payback period: 4 years (total cost)



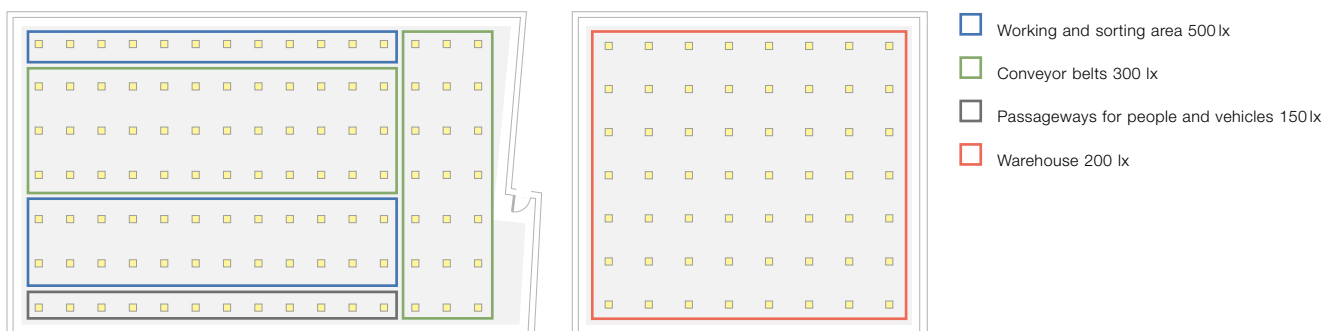
2. Flexibility

+20 %

Flexibility thanks to dimmable luminaires installed on TECTON trunking

Both the CRAFT LED high-bay luminaire and the SCUBA moisture-proof luminaire can be suspended from TECTON trunking with a flick of the wrist. One click is enough to make both mechanical and electrical connections. This means that the LED lighting modules can be relocated and rearranged quickly and easily at any time. The lighting solution will therefore quickly adapt to the changes in machinery already scheduled by Texel. Combined with the dimmability of the luminaires, this guarantees that the best illuminance level for every area will always be provided: 500 lx for the sorting area and the task areas along the walkway, 300 lx in the conveyor belt zones, 200 lx for the warehouse and 150 lx on the passageways for people and vehicles.

Usage areas sorting hall 67 x 40 x 5 m and warehouse for cardboard boxes 40 x 40 x 6.5 m (length x width x height)



eco⁺

CRAFT LED high-bay luminaires bear this label for especially resource-friendly products. For more information on eco+, please visit zumtobel.com/eco

3. Productivity

+5 %

Unique illumination with good colour rendering

Thanks to an intermediate colour temperature of 4,000 K and good colour rendering of $Ra > 80$, the natural appearance of all apple varieties is maintained even with artificial lighting. The CRAFT LED high-bay luminaire combines these qualities with good glare control – ensuring unique efficiency and uniformity: this is made possible by a lighting cone that is shaped like a pyramid with a square base, which makes overlapping cones as produced by luminaires with circular light emission a thing of the past. The fact that manual work is actually done in a few areas only is the reason why the impact on productivity is nevertheless comparatively low for the entire building. Quality control, for instance, is performed via cameras with separate lighting.

Uniform lighting thanks to square light emitting panel



In the CRAFT LED high-bay luminaire, a separate lens is assigned to every LED lighting point. This ensures that the light can be directed very precisely and provides good glare control and outstanding efficiency.

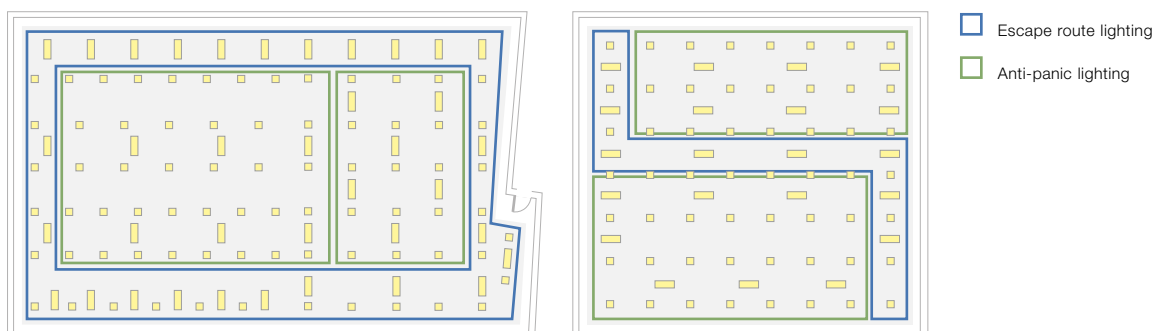
4. Reliability

+20%

Durable and maintenance-free

The pre-wired 11-pole TECTON trunking is a tried-and-tested system to keep installation times as short as possible – as required by Texel – in order to avoid production downtimes. In the sorting hall, the luminaires were installed directly above the conveyor belt systems, at a height of 4.5 m, while in the warehouse they are installed at a height of 6.5 m. In both cases, maintenance would require a lot of effort. But by opting for CRAFT and SCUBA, the Fruit Cooperative made the perfect decision: the IP65-protected LED luminaires boast a service life of 50,000 hours (with a luminous flux reduction to 70 percent) and are thus virtually maintenance-free. As a DALI luminaire with built-in emergency lighting module, SCUBA fulfils two tasks: illumination of passageways outside machinery operating times, and illumination of escape routes in emergencies. In this function it is supplied with power by the ONLITE central CPS central battery system that also monitors the building's bus system.

Emergency lighting in the sorting hall and in the warehouse for cardboard boxes





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