

LUXMATE Project

Light and Room Management
Viking GmbH, Innsbruck / A



Foto: Viking

Light motivation for office, store and production shed

Atmosphere, a feeling of well-being and a good mood are all supported by properly used lighting and by light conditions suitable for the actual situation. Office activities frequently involve switching between working at the computer and the writing desk, between giving a presentation and taking part in a meeting. The light should adapt accordingly - automatically and simply, but still flexibly enough for manual interventions.

The operative and production sector requires lighting for large areas. Energy saving here is an important factor, which can benefit considerably from the use of natural light. Safety must be guaranteed in the sense of optimal brightness combined with presence detectors and emergency lighting. Light scenes with a stimulating effect help to bring out the full performance potential of the employees and are therefore important motivating parameters.



Photograph: Viking



Photograph: Viking

Storage shed with daylight dependent strip lights



The daylight is measured using an external daylight sensor. Artificial light is added as required.

Josef Koller, Project Leader for the new VIKING building, on the benefits of the LUXMATE connection.



You are one of Europe's leading manufacturers of garden equipment. Which products do you offer?

Our range of products includes motorized garden equipment such as lawn mowers, drivable mowers, shredders, electric hedge trimmers and many other items.

Your products are machines for the environment. Did you take ecological aspects into account when designing your building?

Certainly. You could say that we are a "green" company. Ecology is part of our corporate philosophy. For example, we have completely avoided materials containing PVC in the construction of our company building. In addition, the topic of conserving energy played an important role in the planning phase.

Is that why you decided in favour of the LUXMATE system?

That was indeed an important reason for incorporating the LUXMATE system as part of the overall lighting package in our new building. We estimate that workplace oriented lighting will result in energy savings of around 40 percent compared with the previous situation.

Your list of requirements includes lighting specific to the individual workplace. Why?

It was important to us that our employees in every area of the building - not just in the office but also in production and in the storage shed - be provided with the optimal lighting for their particular workplace. For us as a company, it pays off if employees are satisfied with their environment and are provided with high-quality workplaces. At the same time, we felt it to be important that employees could decide for themselves what kind of lighting they wanted in their individual rooms. LUXMATE provides all these possibilities, and that is why we chose this system.

What is the advantage of linking the light control to the LUXMATE system in comparison to other light control systems?

Whenever the outside conditions change, the light adapts gradually in every room in a way which is not perceived by the eye and therefore does not disturb.

This imperceptible light control is very important for us, for example, in the storage shed. If the level of indoor illumination changes abruptly-



Photograph: Viking

Conference room

Daylight brought into the room

In building its new headquarters in Langenkampfen near Innsbruck, VIKING Umwelttechnik - a 100 percent subsidiary of the German STIHL Group - attached special importance to an easily installed and efficient building management services system. The specifications to be met in planning the light management of the 13,500 m² building complex were optimally adapted light conditions in every area, maximum possible use of the energy-saving potential and implementation of a single room concept for the light management system.

This was possible through use of the Lon-Marks® certified LUXMATE FTT-TLS node, which calculates and controls the amount of daylight compensation. The external brightness is measured with sensors and the artificial light adjusted according to the values obtained. The constant light levels achieved with a maximum daylight component exploit the high potential for saving energy and ensure that the different areas of the building receive the required unvarying amounts of light.

ly, it could possibly startle a fork-lift driver with potentially very dangerous consequences. LUXMATE helps us to improve safety at the workplace.

Where do you perceive the quality of your new building?

The 13,500 square metre building was erected at an acceptable price and is of very considerable quality. For me, this quality also includes the technical building services, including the lighting. Our parent company STIHL has accompanied us through the entire process of planning and construction. I am convinced that the experience we have gathered will also be incorporated in any future construction projects implemented by the group.

**Josef Ludwig Geiger,
Tiroler Wasserkraft-
werke AG (TIWAG), on
the implementation of
the project specificati-
ons for electrical and
light planning**



How did this cooperation come about between the Tiroler Wasserkraftwerke (TIWAG) and a manufacturer of garden equipment?

As a power company and supplier of electricity, we feel we should not only supply power, but should also advise our customers on how they can use this power as efficiently as possible. For this purpose we make available our know-how in the building services and facility management sectors.

For the electrical planning in the course of the

we like to work with. LUXMATE made it possible for us to fulfil the customer's special wish for single room lighting and control. If we were faced with a similar order in the future, we would regard these same components as the system of first-choice.

How susceptible is your system to faults?

The light control system is organized in a distributed way and is therefore not very susceptible to faults. If the control module in the room fails, the neighbouring rooms are not affected. Even if the overall control technology malfunctions or breaks down completely, it is still possible to set up provisional lighting. Moreover, we have designed the facility so that the works electrician can remedy minor faults himself and carry out the necessary parameterization without our help. Thus our customer is not forced to send immediately for an expensive specialist every time something goes wrong.

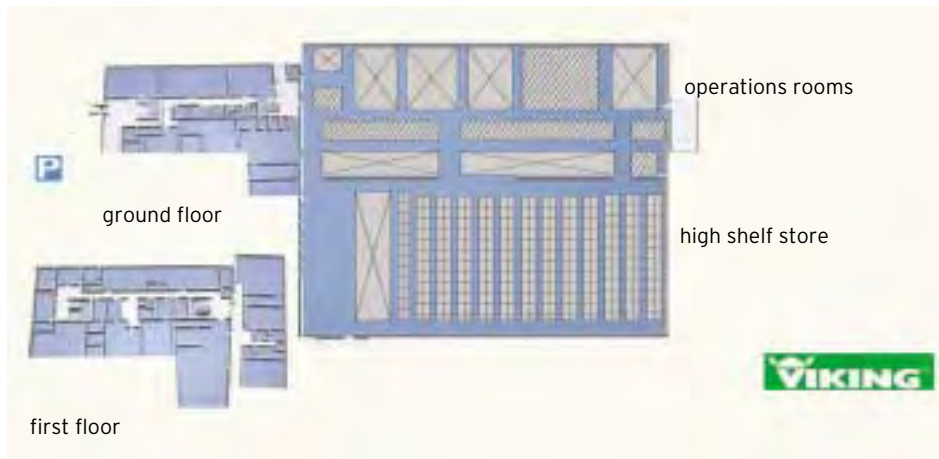
Efficient facility management also means keeping operating costs as low as possible. How have you met this requirement?

We achieve this, of course, by providing individual light control in each room. In addition, the system allows us to drive the light sources at 90 percent of their nominal output instead of at 100 percent. This prolongs the service life of the light sources enormously without the user noticing the slightest difference in the light quality. The automatic daylight dependent light control system reduces power consumption and the light sources do not need to be replaced so often.

How would you assess the cooperation with your partners in this complex project?

Cooperation is always very fruitful when all the participants are competent, flexible and knowledgeable. This was the case for this project and we were able to carry through the planning and implementation phase efficiently and punctually. The task was a challenge for all of us. Our objective is to plan and implement technical building services management for the customer as an integrated system covering the entire works. In order to achieve this, we attach great importance to inter-operable systems and technical facility management, because this constitutes a basis for service, maintenance and future expansion of the customer's facility.

A dream project for me would be - as system integrator - to plan a complex system for a services building; for example, a complete light control system with single-room regulation for the heating, ventilation and air-conditioning subsystems.



Photograph: Viking

Plan of new works building

VIKING project, the company wanted the TIWAG to install the entire electrical engineering plant, right up to the point of operational readiness.

You also took over the entire facility management at VIKING. What advantage does that have for the company?

The advantage for the company lies both in the implementation and in the subsequent maintenance. We designed the building services management system so that it was comparatively easy to install, and is functional and economical. For example, we restricted ourselves to only a few controller components and, if necessary, can replace these quickly and with little outlay. A single control unit is used for controlling the light in the entire building. This can be accessed from a central control point.

Why did you choose LonWorks® with the LUXMATE daylight control module FTT-TLS?

LonWorks® is a mature system for building services bus technology which has been established in the market for a long time and which

**Martin Hardenfels,
LITWIN Nachrichtentechnik System Integrator, on the use of
LUXMATE FTT-TLS**



What were your tasks during the Viking project?

My function was to provide support for the energy technology department of the TIWAG in all matters related to the bus system: preliminary planning, implementation of the specification, consultation, selection of equipment, cable laying, program design and programming concept, right up to commissioning the bus system on site.

Why did you and the TIWAG decide to use LUXMATE equipment at Viking Umwelttechnik?

During the preliminary planning phase we did consider other competitor products for the new building, but finally decided in favour of LUXMATE because it was the system which best met our requirements.

What specifications did your customer, the company Viking and you set for the control of the light?

We wanted an energy-saving system that was easy to install, operate and maintain and - particularly important - that enabled the light to be adjusted individually in each room. LUXMATE now enables us to provide individual daylight dependent illumination for every room.

What control tasks are performed by the LUXMATE FTT-TLS in the new Viking building?

LUXMATE controls the lighting in all rooms and sheds receiving incident daylight. The basis of the building services management system at Viking is the LonWorks® technology. Every room is fitted with a LUXMATE light sensor that measures the incident daylight and compares it with the individual value set for the respective room. According to need, the FTT-TLS control module increases the level of artificial light in the room, or very gradually decreases it.

As the total of the daylight and up to three strip lights, the amount of light at the user level remains constant under different outside light conditions. A light sensor records exclusively the daylight, thus avoiding the disadvantages of reflection oriented constant light regulation. Configuration is performed conveniently by means of the LNS 3.0 compatible plug-in, which is supplied as standard.

Can the individually defined light for each room also be individually adjusted?

Anyone entering a room can also use the light switch to set which room scene he/she would like. According to requirements, the switch is held down for dimming and pressed briefly for switching on and off. Anyone who wants to work later in the evening can press the switch again to turn the lights back on. The building services management system is set up to gradually turn off the lighting in the entire building in three stages at specific times.

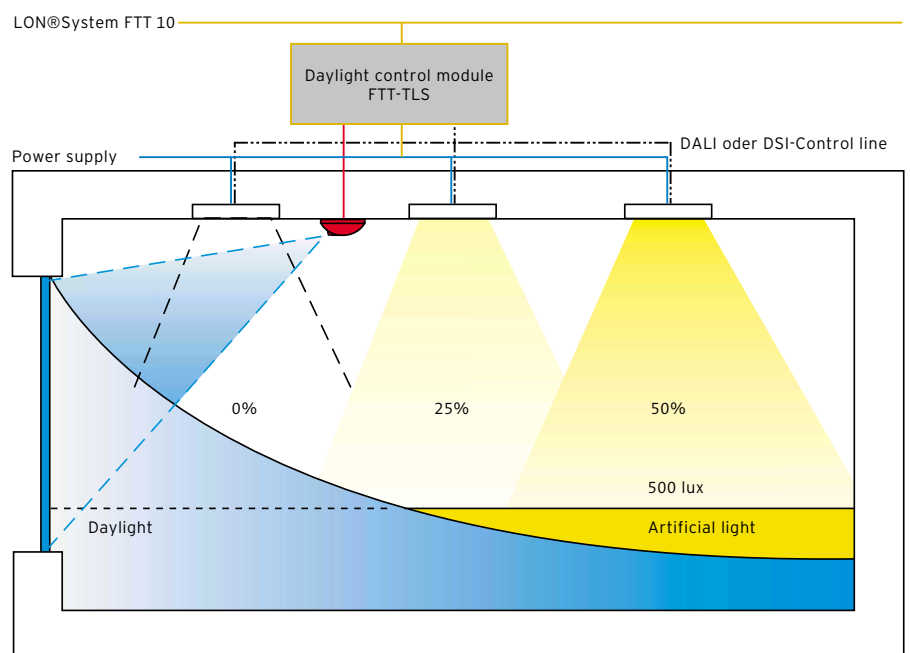
Providing individual light control for every room sounds like an expensive undertaking. How did you keep the installation costs as low as possible?

For the installation we used our commissioning tool Networker 2.0. Because this is simple to use, we were able to set up the system quickly on site with little outlay. In addition, the LUXMATE system allows us to install the FTT-TLS control modules for every room and to connect these to the previously configured LonWorks network in a plug & play manner. The LUXMATE control module optimally supports the individual room concept.



Photograph: Viking

Installed FTT-TLS



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Operator	VIKING GmbH Tochter der ANDREAS STIHL AG & Co Badstrasse 115, D-71336 Waiblingen
Architectur	Stössl Technologie GmbH, A-Hagau
Elektrical planning	TIWAG - Tiroler Wasserkraftwerke AG, A-Innsbruck
System integrator	LITWIN Nachrichtentechnik GmbH, D-Oldenburg
System partner	Zumtobel Staff, A-Innsbruck
Light management	Daylight with 50 Pcs. LUXMATE FTT-TLS (connection to LonWorks®)
Luminaires	Zumtobel Staff
Bus system	LonWorks® Technologie
Application	25 offices, operations rooms, storage shed, production shed
Area	13.500 m ²
Completion date	July 2001

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