Applications in hospitals
Economical, safe and comfortable with GAMMA *instabus*
Economic and smooth-running hospital operations

Economy, safety and comfort are of considerable importance in the increasingly competitive health sector. A hospital operator is faced with the problem of having to provide high quality services with the minimum of expenditure of time and money and with all the key functions running smoothly at all times.

In hospitals, the GAMMA instabus building management system provides through intelligent connection of all electrical functions:

- reduced operating costs
- a guarantee of safe and smooth operation
- protection of human life in an emergency and minimizing of any damage
- the comfort expected in modern usage

Turnkey installation solutions

As a complete service provider for building installations, we offer you a comprehensive solution from the energy supply right up to the socket outlet in a patient room – tailored to the requirements of your hospital.
A healthy economy

The complex requirements of a hospital operation demand particularly well thought out solutions. In order to save energy, simplify procedures and reduce overheads, Siemens provides an integrated system with GAMMA instabus which meets all these requirements.

Light and shade on demand

- Light and shade are controlled so that, as far as possible, the available daylight is used without glare. Having the light switched on and the blinds closed is a situation that is avoided as much as possible. Electricity is saved and the air conditioning system doesn’t need to struggle against sunlight and the heat created by artificial lighting. To make this happen, the blinds adjust automatically according to the position of the sun.
- A constant light regulation automatically supplies the room only with the amount of artificial light needed, e.g. 30% instead of fully switched on, and the lighting level is always adequate. Of course, you can always adjust the lighting manually to your needs.
- In corridors, restrooms or lounges, the lighting outside main usage times can be presence-dependent. During main usage times, the lighting is reduced to a minimum brightness when the room is unoccupied. This achieves optimum energy saving for a longer average life of the lighting.

Room temperature according to use

- Heating and cooling costs are a major factor in a building’s operating costs. GAMMA instabus reduces these costs significantly, by only fully heating, cooling or ventilating patient rooms, waiting areas and laboratories when they are actually needed. The room temperature can be controlled by motion detectors, room-based utilization plans or manually.

- As long as windows are open, the heating is lowered automatically to frost protection level and the cooling and ventilation are reduced or deactivated altogether.
- In areas of the building that are temporarily unused, a “Central off” setting can reduce heating, cooling and ventilation to protection mode.

More efficiency in building management

- With its central visualization, GAMMA instabus permits an up-to-date picture of the whole building and the operation of all building functions. This supports efficient building management in hospitals.
- The connection to existing data networks (LAN and Internet) or a building control system allows the building management to spread across several parts of a building or buildings. Even distributed hospitals can be administered optimally thanks to real-time status information.

If a patient opens the window, the heating is turned down automatically. This saves energy and costs. On closing, the heating turns up again automatically.

If the lighting in corridors and stairwells is presence-dependent, permanent light can be abandoned. This saves energy without loss of security and comfort.
The connection to an existing LAN or the Internet supplies current status information at all times. This allows several parts of the building or a number of buildings to be monitored and administered centrally.

- **Central monitoring** of several hospitals or buildings reduces staff overheads.
- GAMMA *instabus* offers this without additional costs for special monitoring devices. Pressing any button in a temporarily unused area can trigger an alarm indication, for example.
- To reduce energy costs, energy consumption data can be gathered for analysis, peak loads capped and currently unneeded consumers switched off. For example, in peak periods, the output from the air conditioning system can be reduced temporarily, in some areas.
- **Operating costs can be reduced prioritizing maintenance and repair according to need.** This is made possible by counting operating hours and switching cycles, as well as failure reports, e.g. from DALI-ECGs.

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Constant light control with daylight control supplements only the artificial light needed – less at the window, more by the wall.
Patients sheltered in safety

Where large numbers of people are accommodated in a single building as in a hospital, then safety has absolute priority: for the protection of persons and property, for avoidance of damage and to limit costs downstream. GAMMA instabus is on duty twenty-four hours a day.

It is better to prevent damage than to repair it

• Accidents due to inadequate lighting can easily be avoided. If corridor lighting is switched on when a person is in the corridor, then the right lighting is always there when it is needed.
• The lighting of the exterior and walkways can be made dependent on brightness, movement or time and so is always turned on in time.
• Windows, roof hatches or doors left open can cause significant building damage in the event of storm, rain or frost. The indication of “Open window” or “Open door” makes sure you can close these in time.
• In order to avoid damage due to unsupervised electrical equipment, e.g. in lounges, these are switched off centrally with a single press of a button when the room is unoccupied.

In the event of danger

• In case of danger, everyone in the hospital is guided safely out with emergency and escape route lighting based on GAMMA instabus installed according to EN 1838.
• Fast and proper reaction in the event of danger is possible with visualization that shows the location of danger.
• Buildings or areas of buildings that are unoccupied at night, such as consulting rooms, laboratories, dispensaries, out-patients, registries, stores, laundries or kitchens can be monitored through the network from another site.
• If the fire alarm system is connected with GAMMA instabus, a response can be made automatically at the right place in a danger situation. Electrical consumers will be switched off before they become an additional risk. The complete lighting system can be switched on, thus reducing the danger of panic. Blinds will be raised to allow escape if necessary through windows and doors will be unlocked. Roof hatches and skylights will be closed to prevent the fire spreading.
Thoughtful solutions throughout the hospital

Just how intelligent the solution is for a hospital is illustrated particularly by the fact that all the relevant requirements for the numerous public areas of the hospital are fulfilled. With its modularity and flexibility, GAMMA instabus is ideally suited to all a hospital’s interests.

Patient rooms

- Room functions can also be set with a hand-held remote control. This is particularly important for patients whose mobility is limited.
- Room functions are operated by means of an illuminated pushbutton, clearly labelled or provided with symbols. These are ideally suited for patients who must grapple with these buttons on the spur of the moment.
- The timed air delivery and extraction control guarantees high air quality.
- If a patient opens the window, the heating is turned down automatically.
- Patients who need help in the bathroom can raise the alarm simply and quickly by pulling the pushbutton with pull actuation.

Restrooms

- The lighting and extraction system can be presence-dependent. This is convenient for patients with reduced mobility and saves energy costs.
- Water sensors give early warning of pipe fractures and flooding.

Ward center

- The ward center becomes distribution center via a control panel, in order to control building functions centrally at the ward. Patients’ rooms can also be indicated and controlled. Alarms will be indicated.

Conference room

- With one touch of a button, the entire room can be switched to the current mode of use (scenario control). For example, when giving a presentation, blinds are lowered, the projection screen is rolled out, lights are switched off in the area surrounding the screen and lowered to 10% in the rest of the room, the beamer/digital projector is switched on – all by one touch of a button.
- The presenter can also control these scenes completely mobile with the remote control.

Consulting rooms

- The lighting must be matched to the current requirements, whether this be dark for an ultrasound scan or bright for a subsequent puncture.

Operating rooms/intensive care ward

- Coloured socket outlets offer secure distinction between a no-break power supply and a normal mains supply.
- In an emergency, there is no time for lengthy searches and therefore switches and socket outlets must be clearly labelled or marked with symbols.
- In Group 2 areas used for medical purposes, e.g. operating rooms and intensive care wards, changeover devices and earth leakage monitors guarantee the power supply for operating room lights, oxygen resuscitation equipment and ventilators, or refrigerators with valuable drugs.
- In order to guarantee permanent availability of the power supply, any fault reports will be transferred quickly and securely via GAMMA instabus. This improves safety for patients and hospital staff alike and reduces maintenance costs.

... and the right control for every task

- The best technology is useless if it is difficult to operate. GAMMA instabus was therefore designed to be so user-friendly that an inhibition threshold isn’t even allowed to appear in the first place. Despite its impressive range of functions, the system is very simple and convenient to use: from the familiar switches, remote controls, operating displays, touch panels or via a central visualization PC.
- In hospitals, there are also high hygiene criteria for the pushbuttons. Stable, environmentally friendly thermoplasts are particularly hygienic, because they are easy to clean.
The functions at a glance

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With the GAMMA Building Management System, your hospital will fulfil every need with regard to economy, safety and comfort.

You would like to find out more?

Are the examples we’ve described of interest for your hospital project? Then please turn to your Siemens partner. He will gladly support you and provide you with further information.
Answers for infrastructure.

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

“We are the preferred partner for energy-efficient, safe and secure buildings and infrastructure.”