

## OptiControl: Today, mostly sunny – moderate in your office

Welcome to the local weather forecast for the Clinical Development Building G03 at Actelion. Today, mostly sunny early then increasing clouds with some scattered showers this afternoon. Hence, the climate in the building will be adjusted, the cooling system turned down in good time. Enjoy the moderate climate at your workplace.

### How does a local weather forecast for a building preserve energy?



While regulating the climate in a building, a lot of energy can just get lost: First you heat, then the sun warms up your room additionally and, as your thermostat reacts delayed, you open the windows or use the cooling system.

Since April of this year, Actelion has been involved in a vanguard project aiming at reducing energy consumption by using a predictive system of building control.

The system called OptiControl is a research project combining the latest developments in building technologies, weather forecasts, automatic control engineering and sensorics to improve the climate control of buildings.

### A predictive system to provide optimal climate control

The project was kicked-off in 2007 and its aim is to develop a predictive system to provide for optimal climate control of buildings and maximal comfort for users while reducing energy consumption to a maximum and keeping investment and operating costs at a modest level.

Over the past four years, the group has elaborated simulation software called BACLab – Building Automation and Control Laboratory. It comprises research results of the involved parties, such as models of representative buildings and their technical systems, novel control strategies, and meteorological data bases for temperature, humidity and insolation (measuring the solar radiation on the surface). Based on this software, OptiControl has now advanced to a stage where the computer simulations are ready to be tested in a prototype building.

### An Actelion building as a prototype for the test run

Actelion's Clinical building G03 was found to ideally fulfill all the requirements to serve as a prototype for the test run. Hence, Actelion is going to be a new member of the OptiControl 'community'.

Shortly the building will selectively be equipped with special sensors to start measurements in regular intervals. Employees will not be affected by the testing phase that is scheduled to last from summer 2011 to spring 2013. However,

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every six months, starting in August, an anonymous survey will be conducted among the employees involved in the project. The survey will be organized and evaluated by the OptiControl team of the ETH Zürich. The first part of the survey has been conceived to assess the current climate status and comfort level in G03 from the perspective of the employees. Further surveys will then evaluate the progress made on the basis of the OptiControl process.

If the test run proves successful, it will be possible in the foreseeable future to equip modern buildings with computer systems that exploit weather forecasts and occupancy-related information to control lighting, heating, cooling and ventilation thus contributing considerably to improve energy efficiency and reduce carbon emissions in office buildings. In addition, the room climate inside a building will be better and add to the comfort of the people working in it.

“At Actelion, we believe we have an obligation to reduce our impact on the environment and to conserve natural resources for future generations and we are therefore excited to take part in this innovative project,” says Andreas Gaiser, Head Facility Management. “This way, other Actelion buildings can gradually benefit from the results of the pilot project.” Ultimately, the OptiControl project fits very well into Actelion’s endeavors to improve its commitment to Corporate Responsibility.