



## CASE STUDY SCHOOLS IN ROOT, SWITZERLAND

# Wireless works: why schools in Root are relying on merkur

The schools in Root are equipped for the future. They have optimised how they operate and have determined their energy requirement - courtesy of the solution provided by merkur Funkssysteme AG. Why a wireless and not a wired solution was considered and what challenges were surmounted at the outset.

*April 2015, Chantal Colle, merkur Funkssysteme AG*

Community? Local authority? School governors? Caretaker? Pupils? The needs and concerns in running a school are diverse and are always changing. This gives rise to new concerns, subject areas and projects. This is also the case for the schools in Root. Recent decades have seen a lot happen in terms of how the schools in Root operate. Feedback from various sources meant the heating systems have kept being reset and control parameters adjusted. The buildings have given rise to new possibilities for usage. Some buildings have been modernised in terms of energy, or even extended. Now, eight multistorey buildings stand on an area the size of roughly two football fields.

The structural alterations and modifications have greatly impacted how heat is generated and distributed around the school complex. To such an extent that the schools in Root decided to perform temporary measurements for on-site optimisation.

bapGROUP AG evaluated different solution models for the Root schools and ultimately implemented the best - wireless technology from Merkur Funkssysteme AG.

## A peek behind the scenes

What was the situation like at the start of the project? The existing measurement and control technology at the Root schools worked. But there was no way to record the readings. And important data points were lacking.

Michael Haltner, project engineer at bapGROUP AG and in charge of the Root schools project was responsible for putting into place the conditions for temporary measurements in the buildings. „A completely autonomous sensor plan had to be created for it. It was only important interfaces such as heat meters that were read in parallel to normal operation“, he explains. Michael Haltner and his team determined and optimised the energy consumption and operating temperatures for six months. The goal: enabling of the best possible operation of the systems and prevention of unnecessary energy consumption.

## Wireless works over long distances

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## Cable solution too expensive and complex

Wired measurements with the existing system was out of the question for Michael Haltner. „Besides new software, major alterations to the hardware would have been necessary.“ So, the benefits of wireless are obvious - speedy, flexible and simple installation on the one hand. The position of a sensor is no longer bound by the electrical cables. Flexible positioning of sensors is possible, such as at the coolest or warmest points in a room. On the other hand is the low maintenance overhead. Straightforward installation and long battery life (up to 12 years) reduce the main-



tenance required for devices. The merkur technology renders the tedious changing of batteries a thing of the past. Wireless works. And it is gaining more and more momentum.

## „Energy and money can certainly be saved“

And what about the bottom line? In parallel to the temporary measurements and determination of requirements, Michael Haltner's team carried out on-site optimisation of the HVAC installations. With success. „The measurements show us where there is potential for savings and how new adjustments affect ongoing operations“, says Michael Haltner. It was also possible to identify and replace deficient valve drives.

Can the benefits be expressed in terms of numbers? Michael Haltner explains shortly after project completion: „We cannot provide any exact figures at the current time.“ But he is convinced that "energy and cost savings are possible".

**64 wireless sensors**

**Area spanning 15'775 sq.m.**

**8 buildings**

**2 workdays for implementation**

