

Case study

UPS back-up system at Kenya's First Green Certified Building

Dunhill Towers

Nairobi, Kenya



The challenge

Late in 2018 the European Union Delegation to Kenya relocated offices from the Upper Hill region of the Kenyan capital, Nairobi – to the 21 floor Dunhill building in Westlands. The delegation set very high standards regarding general security, and this also extended



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to requirements in terms of energy security. Due to the important nature of the information stored and systems running on their servers and computers, it is critical that the equipment is not exposed to power cuts due to grid-supplied power failures.

Why STUDER

The Studer equipment have been programmed to sense any grid failure and will, in the case of an outage, open the transfer relay and supply the offices from the battery storage. The transfer relay in Studer inverter/chargers opens in less than 15 milli-seconds and therefore the power supply will be uninterrupted, and the equipment will not be affected. The reliability of the Studer equipment along with the 10-year warranty was also very important to the delegation when they assessed the options in terms of system components. Studer technical staff assisted local installation partners with the commissioning of the site and provide ongoing support as required.

The Solution

In order to ensure continuous power supply to the new offices, the decision was taken to install a back-up system that included the Studer components and energy storage. This system design ensures that the offices never experience periods without power. When the grid fails, the offices and all of the equipment, devices and lights they use to perform their work, remain connected to the Studer system and uses the energy stored in the batteries. The 17 XTH 6000-48 inverter/chargers are installed in separate systems distributed across the office space with their own battery banks of different sizes. It was therefore possible to adjust the parameter settings for individual systems per very specific requirements if needed in the future.

System components

The system contains the following components:

- 17 x STUDER inverter/charger Xtender XTH 6000-48
- 4 x RCC-02 STUDER Remote Control Centre
- 4 x BTS-01 STUDER battery temperature sensor
- 104 x Trojan SAGM 06 375 AGM Batteries

Project outcome

Being a 5-star rated green building, it was also very beneficial to the sustainable design that the system installed uses energy stored in fully re-cyclable AGM batteries and inverted to supply the AC loads of the offices. The building has also become the first in East Africa to be assessed under the green star TM-Africa tool, focusing on advanced green features and awarded the 5-star rating by the World Green Building Council.

The Company

The **Center for Alternative Technologies (CAT)** Kenya is a Renewable energy distributor for solar, wind, power back-up and batteries for the East African region. They have been in the renewable energy industry in Nairobi since 1996 and have successfully completed many installations for lodges, residential homes, farms, offices, hospital power backup and village water pumping. They offer Local Solar Product Warranty and support to all their Dealers and Installers, End Users and Projects, supported by Studer Innotec.

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