



SUCCESS STORY

INDUSTRIAL SHIELDS

BETTER MONITORING AND CONTROL OF HVAC FOR SHOPPING MALLS



SITUATION

The needs of shopping centres require a **wide variety of HVAC** (heating, cooling, ventilation and air conditioning) solutions to ensure consumer comfort and energy efficiency.

Our customer wanted to ensure control and improve all monitoring information in order to start anticipating the best configuration, thereby maintaining the best quality for customers, and at the same time preventing a high energy consumption.

The current equipment did not allow to do this without the use of some hardware, external modules and multiple software interfaces and protocols.



It is key to avoid a **complicated installation and integration**, and also the **lack of information to start working with greener solutions and more reasonable energy consumptions.**



CHALLENGE

There were different points to take into account when solving the customer's requirements:

- Simplify the hardware equipment by reducing the current elements used to control and monitor.
- Allow remote control of the HVAC installation.
- Improve the monitoring of the HVAC status, consumptions, warnings, alerts.
- Ensure optimal HVAC performance, and thus guarantee the best environmental conditions at the mall.

Using an industrial PLC with GPRS was the best option to ensure the monitoring needed by the customer. Also, this PLC has enough inputs and outputs, and industrial communications to control the HVAC installation.

The open source software allowed the following milestones:

- Solving all programming parts in a shorter period of time.
- An easy and fast integration of all the elements present in the installation.
- The customer is the owner of the software.
- The customer can add, modify or adjust the solution.
- Reduction of the time needed to complete the project.

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The Gañar Group company requested the improvement of the design of an HVAC system to manage the heating, ventilation and air conditioning installations of a shopping centre.

The goal was to **automate, control and monitor** the system with **open source** technology. By means of a single PLC with the knowledge and recording of the operating hours, as well as the air conditioning parameters, Gañar Group wanted to **remotely manage** the monitoring of the entire process with quality technology and easy programming.



SOLUTION



The solution suggested by Industrial Shields consists of installing a **Raspberry PLC & GPRS 21 I/Os Analog/Digital PLUS** industrial controller.

The installation of this PLC provides the customer with an easily integrable solution because:

- Using a variety of inputs and outputs, the controller can be easily integrated into an existing system;
- It is a scalable system, which can be expanded without becoming obsolete; and
- Data transfer is improved thanks to GPRS.



IMPLEMENTATION

Gañar Group, together with its integration partner **Square One Project Group**, integrated an Industrial Shields **Raspberry PLC** in order to **automate, control** and remotely **monitor** a 5000 m2 area in Pretoria, South Africa.

Gañar first assessed the size of the HVAC unit required. The company then began manufacturing and programming the system once the laboratory testing was completed. Finally, the completed unit was shipped to the final customer for on-site commissioning.

Raspberry's GPRS and Wi-Fi communications facilitate greater data transfer for **remote monitoring** in the SCADA system and greater data management.



Thanks to this application, the **5000 m2 of shopping area can be managed to improve the comfort and healthiness of the mall.**



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ADVANTAGES



Less is More

With a single PLC it is possible to remotely manage the entire solution and all the monitoring. Reducing the hardware of the HVAC installation makes it easy, fast, and cheap.



Focus on customer

One of the most important demands of the solution was the need for remote management. Thanks to the GPRS PLC this can be done.



Easy programming

The Raspberry PLC can be programmed with the system that best suits the customer's needs. It is an open source based operating system, making it easy for the customer.

? WHY INDUSTRIAL SHIELDS?

Industrial Shields won this project and beat its major competitor thanks to the key points below:



Open solution
No licence fees.



24/7 technical support
Our team is available 24 hours a day, 7 days a week, by phone, mail or WhatsApp.



Modular solution
Product specifications can be extended in the future.



Equipment designed and manufactured for **industrial use** at a lower price than competing products.