

# CASE STUDIES

2026 | Innovation and advanced monitoring for the CCU of a hospital trust.

COSTER



# BUILDING

When designing or refurbishing a ward such as an Intensive Care Unit in a hospital, the project presents itself from the outset as a highly complex challenge in both technical and managerial terms.

The contract usually involves the integrated installation of mechanical and electrical systems, as well as the complete refurbishment of the ward.



The aim is not simply to create a functioning infrastructure, but to build a system capable of:

- ensuring controlled and safe environmental conditions for critically ill patients
- seamlessly integrating the various system components
- meeting variable requirements (positive and negative pressure rooms)
- simplify operational and maintenance management over time

In this type of project, the design and construction of the systems is always just the first part, because the brief also covers subsequent use, management and the tools required to carry this out.

**How and with what tools?**

# INTERVENTION

Given these challenges, projects are always a joint effort between those who design the systems and those who install them, with the aim of developing an advanced solution for the control and monitoring of the entire department.

One of the most recent projects undertaken, within a hospital, involved:



- systems for generating hot and cold fluids using multi-purpose heat pumps
- air handling units dedicated to the primary air supply
- precise control of temperature, humidity and air quality for each individual patient room
- full integration between mechanical and electrical systems

The key feature was the introduction of an advanced environmental pressure management system.

Thanks to an architecture based on BACnet communication and a control structure incorporating advanced logic, it was possible to develop a system capable of:

<b>1</b>	<b>MANAGE ROOMS UNDER POSITIVE PRESSURE (TYPICAL OF STERILE AREAS)</b>	<b>3</b>	<b>SWITCH DYNAMICALLY BETWEEN ONE MODE AND ANOTHER</b>
<b>2</b>	<b>MANAGE NEGATIVE-PRESSURE ROOMS (REQUIRED FOR INFECTIOUS PATIENTS)</b>		

This is a significant innovation, particularly in a post-pandemic context, where the operational flexibility of healthcare spaces has become a strategic requirement.

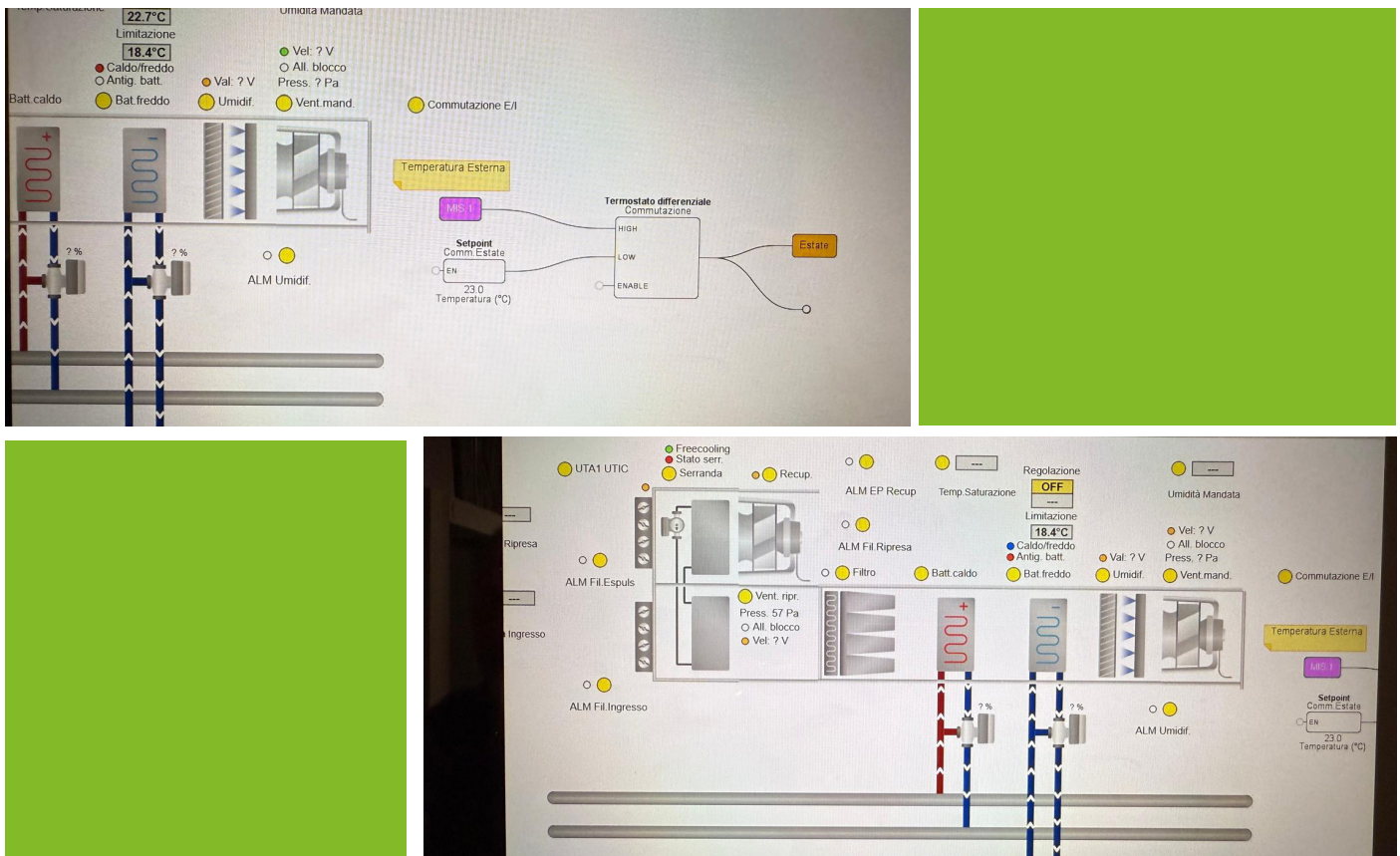
# TECHNIQUE

## Use of CosterCAD and WebGarage.

A key role in this project was played not only by the ability to develop complex logic, thanks to CosterCAD, but also by the WebGarage platform, which was used as a remote monitoring, control and management system.

WebGarage made it possible to:

- monitor all environmental parameters in the department in real time
- manage systems and settings remotely without the need for immediate on-site intervention
- respond quickly to anomalies (temperature, humidity, pressure)
- provide an intuitive and user-friendly interface, even for non-technical operators



From an operational perspective, this means that, when a report is received – for example, from users – it is possible to:

**identify the problem, analyse it and take immediate action remotely**, thereby reducing the time and complexity of the intervention.

WebGarage therefore becomes not just a technical tool, but a guarantee of operational continuity.

# ADVANTAGES

## Benefits for the end customer.

The final outcome of the project translates into a range of concrete, measurable and strategic benefits for the healthcare facility.

**1 Safety and quality for patients.**  
Precise control of temperature, humidity, air quality and pressure ensures safe and compliant environments, even in the most critical situations.

**2 Operational flexibility.**  
The ability to operate rooms in both positive and negative pressure modes enables the department to adapt quickly to different clinical requirements, without the need for structural alterations.

**3 Full integration of systems.**  
The solution eliminates technological silos and creates a coherent system in which every component communicates

**4 Efficiency in management and maintenance.**  
Thanks to remote control, response times are drastically reduced and maintenance becomes more predictive and less intrusive.

**5 Ease of use.**  
WebGarage's intuitive interface makes it easy for even non-specialist staff to manage the system.



This project has been a concrete example of how **advanced building automation**, supported by technology and digital platforms such as CosterCAD and WebGarage, can transform a healthcare infrastructure into a smart, flexible system geared towards operational continuity. This is not just about technology, but a paradigm shift: **from the management of systems to the governance of critical environments**, where every piece of data becomes a decision-making tool and every system contributes to the overall value of the healthcare service – all designed and implemented on schedule thanks to meticulous project management.