dom|OS
building

greenhouse
and nursery

DSSTech

FROM DOMOS EXTENDED, THE ADVANCED DOMOTIC SYSTEM MADE BY DSSTECH, IT WAS DEVELOPED DOMOS BUILDING TO MANAGE NON-RESIDENTIAL STRUCTURES.

DOMOS BUILDING PROVIDES SOLUTIONS OF BUILDING AUTOMATION TO INCREASE THE EFFICIENCY OF BUILDINGS USED FOR PRODUCTIVE, COMMERCIAL OR DIRECTIONAL PURPOSES.

DSSTECH DEVELOPS A DOMOTIC SYSTEM ACCORDING TO CUSTOMER REQUIREMENTS, OFFERING ASSISTANCE FROM DESIGN TO POST-SALE PHASE.

DSSTech was commissioned to automate, with DomOs Building, 6000 sq.m. of greenhouses in a nursery that operates in the north of the province of Vicenza.

Between the initial customer requirements there was the need to automate greenhouses with a simple and intuitive interface.

CUSTOMER REQUIREMENTS

- LIGHTING CONTROL OF 8 DISTINCT ENVIRONMENTS
  - detection of light intensity and automatic management according to time slots

- HEATING AND COOLING MANAGEMENT OF THE 8 ENVIRONMENTS

- MANAGEMENT OF 25 IRRIGATION ZONES
  - management according to time slots and disabling in case of rain

- SHADING CURTAINS MANAGEMENT OF THE 8 ENVIRONMENTS
  - separate management, based on internal detected temperature, external brightness, shading of the single zone

- SKYLIGHT MANAGEMENT OF THE 8 ENVIRONMENTS
  - automatic temperature management of single zones thanks to the opening/closure of roof's skylights, according to internal temperature
  - forced closure in case of raining or wind

- MONITORING OF 30 TECHNICAL ALARMS
  - real-time signaling via SMS of technical alarms (heat drops, shading curtains and skylights malfunctions, pumps alarms)

- 24 ZONES WITH PERIMETRIC AND VOLUMETRIC ANTITHEFT SYSTEM

- SIMPLE AND INTUITIVE USER INTERFACE
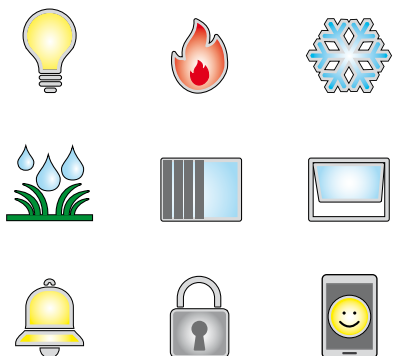
With the application of DomOS Building system, it becomes possible to use ad hoc solutions that extend to the maximum level the integration of the domotics.

The management of greenhouses is made instantaneously and in extremely simple way.

dom|OS
building

MANAGEMENT OF ENVIRONMENTAL BRIGHTNESS FOR EVERY SINGLE ZONE

Through a two thresholds sensor, the control unit manages the turning on and off of two separate lighting lines to maintain constant as much as possible the brightness level into some settable time slots.
The setting of the time slots is performed by connecting to the domotic interface via smartphone and PC.

TEMPERATURES MANAGEMENT

The management of the heating and cooling systems is based on preset optimal environmental temperature values.
It's also possible to manage the system within the preset time slots.

IRRIGATION MANAGEMENT

The management of every single solenoid valve in the irrigation system is made through customizable time slots, with a forced closing command in case of rain.

MANAGEMENT OF SHADING CURTAINS

The control unit automatically manages the opening and the closure of shading curtains based on detected internal temperature and on environmental brightness.
The management of shading curtains is even possible in manual mode. In this case the opening and closure are performed after the user's commands.

ROOF'S SKYLIGHT MANAGEMENT

The management of opening and closing of the skylights is possible through a local or remote connection, as well as the manual and automatic mode.

When the system is in automatic mode, the control unit detects temperature variations, compared to predefined threshold values Tmin and Tmax and actuates the opening or closing of skylights.

In case of rain or wind, a security procedure is activated that closes the skylights until the weather conditions return to normal.

TECHNICAL ALARMS MONITORING

In case of alarm (trip of thermal magnetic circuit breakers of shading curtains and skylights, alarms from pumps of the irrigation system, etc.) a signaling SMS is sent.

ANTITHEFT SYSTEM MANAGEMENT

Thanks to perimetral protection and presence sensors, in case of intrusion, the system can send a signaling SMS in real time.

MANAGEMENT AND PROGRAMMING OF ALL FUNCTIONS VIA APP

The complete management of the system via smartphone app proved to be the optimal solution which gave an added value to the project.

POSSIBLE IMPLEMENTATIONS

ENERGY MONITORING

DomOS is able to monitor the produced energy in Real-time from photovoltaic panels and can record the consumptions of electricity, gas and water.

CONTROL OF THE SOUND SYSTEM

Through domotics it is possible to spread the music in the whole nursery, setting diversified volumes and equalizations for any environment.

VIDEO SURVEILLANCE

On the interface of the domotic system you can view IP cameras that, in combination with a specific NVR (digital recorder), allow the video surveillance of the building.

BRIGHTNESS MANAGEMENT

Lighting control can be implemented through automatic dimming of the lights based on the desired brightness.

Through Smartphone, Tablet and PC the final user can control and command the entire system in a simple and intuitive way from a unique interface, locally or remotely.

The DomOS Building system brings the control to a higher level resulting in the raising of the manufacturing plant's reliability.

BEFORE INSTALLING THE DOMOS BUILDING DOMOTIC SYSTEM

The greenhouses were controlled with 34 control units located in various electrical panels, scattered inside in the building. This configuration was causing significant problems in the functionality management. To manage every single control unit it was necessary to reach the place where it was installed and then set different programming menu depending on the specific control unit on which to intervene.

AFTER INSTALLING THE DOMOS BUILDING DOMOTIC SYSTEM

The 34 control units have been replaced by the domotic modules that communicate with each other via the communication bus. The operator must not move any more, data have to do it. The operator of the irrigation system, for example, via his Smartphone is able to monitor and control in real time every single solenoid valve of the plant.
User can customize system's functionality through the creation of scenarios to respond to specific needs.

dom|OS
extended

dom|OS
easy

dom|OS
home

dom|OS
care

dom|OS
building