

# UNIVERSIDAD CENTROAMERICANA JOSÉ SIMEÓN CAÑAS NET-ZERO ENERGY BUILDING

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## INTRODUCTION

A team of engineers and architects, with input from students, designed a net-zero energy building at the [Universidad Centroamericana José Simeón Cañas](#) in San Salvador. Researchers there gather climate data and conduct experiments to explore sustainable building technologies for the region.

## PROJECT DETAILS

Authorized Dealer [MP Service](#) installed a Reliable Controls building automation system during construction of the net-zero facility.

To integrate mechanical equipment, MP Service used RC-Studio software and a MACH-ProWebCom controller that communicates over the local area network via BACnet/IP. Three MACH-ProPoint Input modules expand the controller to accommodate 24 inputs that each collect signals from more than 70 sensors in the building. MACH-ProZone controllers connected to the MACH-ProWebCom by a local BACnet MS/TP network operate the HVAC system and monitor temperature, relative humidity, and CO2 levels in two zones.

RC-Reporter and RC-Archive software provide teachers, students, and researchers with a simple, sustainable way to collect data under varying conditions.

Energy use, weather conditions, surface air temperature, and air velocity in the building are monitored to determine how energy consumption and thermal behavior affect its operation. The 100-square-meter structure, a living laboratory with classrooms, study areas, and offices, is the first of its kind in El Salvador.

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### MARKET SEGMENT

Education

### PROJECT TYPE

New construction

### INSTALLATION TYPE

HVAC, lighting

### TOTAL AREA

100 m<sup>2</sup> (1,076 ft<sup>2</sup>)

### PROTOCOL

BACnet

### EQUIPMENT INSTALLED

- 3 MACH-ProPoint™ Input expansion modules
- 1 MACH-ProWebCom™ controller
- 2 MACH-ProZone™ controllers
- 3 SPACE-Sensor™ Temperature devices
- RC-Archive® software
- RC-Reporter® software
- RC-Studio® software

### INTEGRATED EQUIPMENT

Loytec L-DALI lighting control system, DENT power scout, LG variant refrigerant flow system

### TOTAL SYSTEM OBJECTS

280

### RELIABLE CONTROLS AUTHORIZED DEALER

