



Sustainability standards place a high demand on facility managers to maintain a delicate balance of energy efficiency, client comfort, and environmental impact.

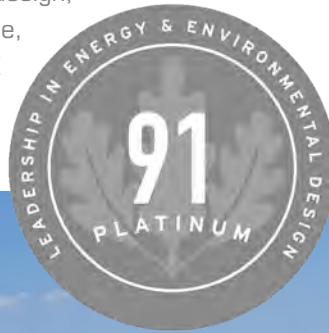
The ease of use, versatility, and resilience of a Reliable Controls system allows building operators to achieve that balance.

Enhanced project profiles provide an in-depth profile into a project that highlights an Authorized Dealer and showcases the versatility of the Reliable Controls system.



With 28 percent of global CO₂ emissions attributed to heating, cooling, and lighting in commercial and residential buildings,¹ it's incumbent on the building industry to advance the World Green Building Council's mission to transform the built environment to be healthier and sustainable. In alignment with this goal, MP Service, a mechanical engineering and controls contractor in San Salvador, set out to construct a new head office building that would become the first LEED Platinum—certified facility in El Salvador.

A Reliable Controls Authorized Dealer and valued partner since 2002, MP Service takes great pride in promoting the green building initiatives advocated by the U.S. Green Building Council. When the company outgrew its headquarters, it purchased a property to be renovated and set strategic guidelines for the development of a highly sustainable building that prioritizes environmental stewardship and the health and well-being of its occupants. MP Service implemented an integrative process in the design, construction, and operation of the renovated space, with all HVACR systems designed under ASHRAE Standards 189.1, 90.1, 62.1, and 52.2.



LEEDing the way

MP Service hired B100 Arquitectos, a group of architects with extensive experience in LEED- and HAUS-certified projects, and implemented the Arc platform and LEED Performance Path to collect, manage, and benchmark data during the steps to LEED certification. Arc calculates a performance score out of 100 based on a global data set and action-oriented strategies across five categories: energy, water, waste, transportation, and human experience.



LEED is a non-profit organization that seeks to promote leaders in the construction market, with the aim of creating ecological awareness through education that leads to sustainable development.

To belong to the El Salvador Green Building Council is to be part of a network of companies, professionals, students and the like in the construction field that seek to be part of the industry's change towards sustainability.



El Salvador
Green Building Council

The promotion of sustainability through education aims to create leaders in the industry that transform the market, achieving a social, economic, and environmental balance. Being part of the various technical committees that generate synergies between members for the development of adaptable techniques in sustainable projects, participation in ESGBC activities, representation in regional delegations of the Green Building Council, and participation in educational programs are all directed to the development of professionals focused on a sustainable built environment. MP Service is proud to be a player in this sustainable development and was awarded the Latin American Leadership Award from the USGBC for the innovative construction of their new headquarters.

MP Service headquarters is one of the top five buildings of its kind in terms of performance in the world.

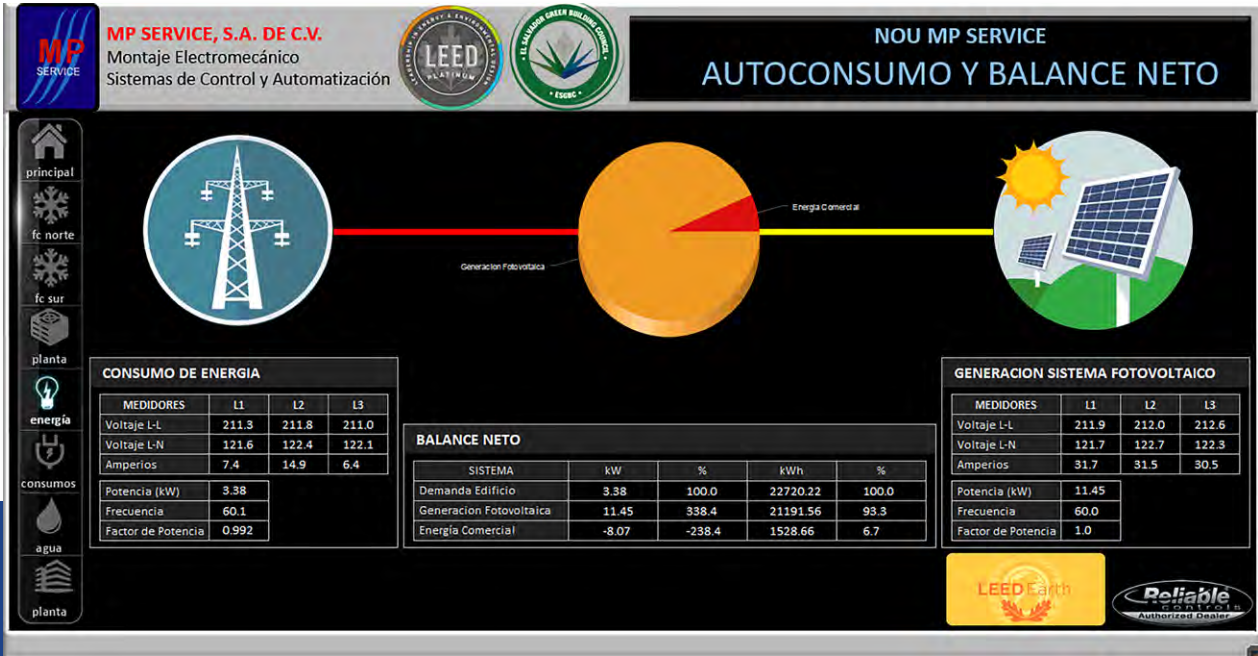


Total points: 100 hard points, 900 soft points.

Better by design™

energy

The building management system, building envelope, air-conditioning system, lighting control system, and power generation system contributed to MP Service's energy Arc score of 30 out of a possible 33 points.



Energy consumption metrics.



Rooftop at MP Service.

MP Service integrated a MACH-ProWebCom into the local area network to communicate with all Reliable Controls and third-party HVAC devices. Twenty-six MACH-ProZone controllers are distributed throughout the facility, connected via BACnet MS/TP. Building managers use RC-Studio to control ventilation, exhaust, and a chilled water plant networked with fan-coil units by BACnet IP.

The Reliable Controls system has the flexibility to keep clients connected using the latest technologies and the resilience to be effective for the life of the equipment controlled.

Every controller manufactured by Reliable Controls contains a BACnet communication stack on board and is BACnet Testing Laboratory listed for quality assurance. Reliable Controls provides an industry-leading, 5-year warranty on all programmable controllers.



The interior was designed to maximize the use of natural light whenever possible, and MP Service installed a MACH-ProCom to seamlessly integrate a third-party lighting control system. Building managers rely on occupancy sensors and RC-Studio scheduling to ensure the system operates at peak efficiency. RC-Archive collects information about light fixture status, illuminance levels, and power consumption, and a third-party meter monitors voltage, current, and other electrical parameters for both the external power supply and MP Service's own solar power plant.

El Salvador has high solar radiation levels, which made the use of photovoltaic power a viable option. The photovoltaic system can provide up to 32.9 MWh per year, or up to 90 percent of the building's power requirements. To improve efficiency, building operators extract actionable intelligence from collected building data using RC-Reporter.



A view of the photovoltaic system at dusk.

One of the most effective measures to reduce the building's thermal load was to apply a coating to the building envelope that helped reduce passive heat gain. MP Service installed thermoacoustic panels with a heat-reflective finish on the roof to combat the heat-island effect and provide waterproofing. This configuration earned an R13 rating for thermal insulation.

EQUIPMENT INSTALLED

- 1 MACH-ProCom™ CONTROLLER
- 1 MACH-ProView™ CONTROLLER
- 1 MACH-ProWebCom™ CONTROLLER
- 28 MACH-ProZone™ CONTROLLERS
- 48 SPACE-SENSOR™ DEVICES
- RC-Archive®
- RC-Reporter®
- RC-Studio®



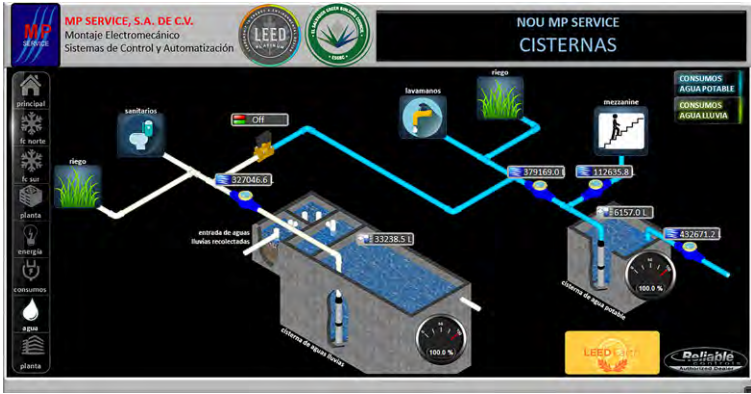
An aerial view of MP Service.



water

Typically, most of a building's water cycles through the building and offsite as wastewater.² One way to reduce water consumption is to use reclaimed water. MP Service installed low-flow toilets and a rainwater harvesting system to earn a water Arc score of 12 out of 15 points. The 3.8-liter single-flush toilets are served by the harvesting system, which has a capacity of 35,000 liters and can satisfy the building's demand for toilet and irrigation water throughout the wet season and over 3 months during the dry season. Using collected water for these purposes reduces the burden on the municipal water supply and wastewater systems and limits the use of potable water for landscaping.

MP Service water cistern operations.



Chilled water plant operation.



human experience

Employees are happier, healthier, and more productive in LEED buildings, according to the U.S. Green Building Council.³ MP Service installed 48 SPACE-Sensor devices in its new facility to measure and control temperature, humidity, CO₂, and volatile organic compounds. Outdoor air is supplied through 16 injection fans that comply with the fresh air requirements set out in ASHRAE Standard 62.1. In addition, MP Service flushes out the building's air every morning before employees arrive.



Green space.

waste

A constant stream of products is acquired and discarded in commercial buildings to support operations and maintenance. The amount of waste a facility generates has a significant environmental impact. At MP Service, waste-sorting bins for paper, polyethylene, aluminum, and residual waste are provided at four locations throughout the building, and the company held information sessions for employees when the new facility became operational. As a result, MP Service collected over 350 pounds of recyclable material during the LEED evaluation period and earned a waste Arc score of 8 out of 8 points.



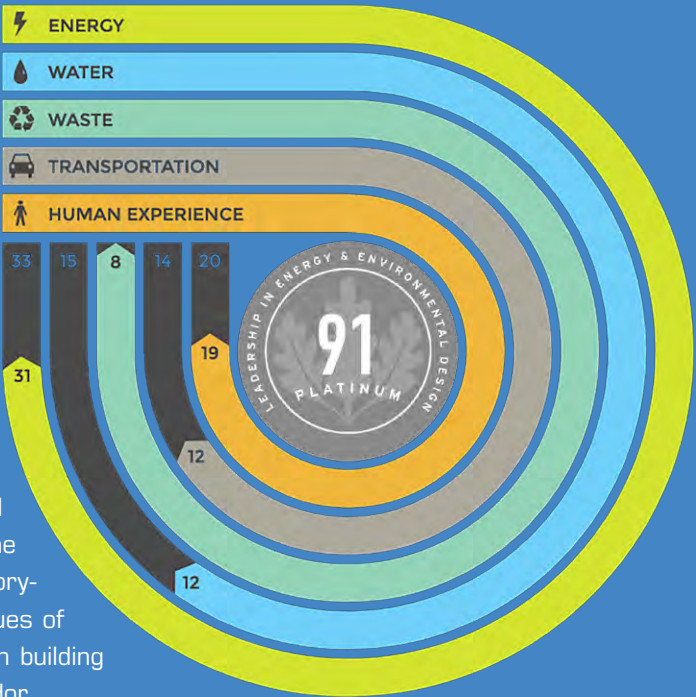
transportation

Transportation is one of the largest contributors of greenhouse gas emissions. A well-considered location is a key component to reducing the environmental impact of employee transportation. The transportation score in Arc is generated from a brief survey administered at least once a year that asks respondents, “On a typical day, how to you get to the building?” The new MP Service headquarters is centrally located with easy access to urban infrastructure and public transit, which earned it a transportation Arc score of 12 out of 14 points.

MP Service achieved an impressive 19 out of 20 points in the human experience Arc score, which is based on occupant satisfaction, interior CO₂ levels, and interior volatile organic compound levels.

In the LEED Performance Path, 90 of the possible 100 points are derived from how a building performs in the Arc criteria. Project managers can pursue the remaining 10 points by submitting LEED documentation to Green Business Certification Inc. (GBCI), the credentialing body that administers LEED certification. MP Service scored 81 points for performance and received 10 credits from GBCI for its renewable energy generation, heat-island effect reduction, thermal comfort, and light pollution reduction efforts.

MP Service is proud to achieve energy savings of approximately 50,000 kWh per year with its new facility. The simplicity and effectiveness of the Reliable Controls system helped empower the organization to realize a 91-point LEED v4 O+M rating and a history-making Platinum certification. The building not only reflects the values of MP Service and Reliable Controls; it also promotes the local green building industry and contributes to a more sustainable future in San Salvador.



1 [worldgbc.org/news-media/hero-net-zero-uae-emirates-green-building-council](https://www.usgbc.org/news-media/hero-net-zero-uae-emirates-green-building-council)
2 <https://www.usgbc.org/articles/metrics-motion-exploring-water-arc>
3 <https://www.usgbc.org/articles/metrics-motion-exploring-human-experience-arc>



reliablecontrols.com

The power, flexibility, and sustainability of the Reliable Controls system is demonstrated in LEED projects all around the world.

Reliable Controls is pleased to have played a role in helping MP Service achieve the first LEED Platinum certification in El Salvador. To learn more about MP Service visit mpservice.com.sv



"When we embarked on the project for the new headquarters, never did we dream that it would culminate in such a prestigious acknowledgement. The work of our team of professionals coupled with a company which specializes in LEED certification made for a fantastic crew and the results speak for themselves. The end was wonderful, but the road traveled even better. This would not have been possible without the aid of our partners, especially that of Reliable Controls, providing a level of quality and support that is far above that of their peers in the marketplace"

Carlos Moreno Portillo - CEO, MP Service