

Miramar Al Aqah Beach Resort pivots towards an open BMS with Niagara retrofit

THE CHALLENGE

Miramar al Aqah Beach Resort is one of the best 5* luxury hotels located in Fujairah, UAE. The resort leverages technology to save on energy costs over its 56,770 m², 321-room, so it can ultimately be more profitable & be better able to adapt to the ever-changing hospitality landscape. The Shared Savings Energy Performance project was awarded to Taka Solutions, who we worked with to retrofit the Beach Resort.

The original MEP infrastructure plan included a central Building Management System (BMS) to control HVAC, electrical, water and elevator systems. The resort had HVAC, Electrical, Plumbing and ELV systems connected to the BMS.

The existing BMS was obsolete, and the Client was facing multiple operational issues. The Client's focus was to implement an open platform BMS that can be operated and maintained at a low cost, reduce energy consumption, cost, and carbon. The decision to retrofit came following multiple years of energy, cost, and operational inefficiencies.

OBJECTIVES

- Replacing the legacy system with an open-protocol building operating system provided by Tridium's Niagara.
- Ensure energy and water savings and efficiencies.

To achieve these goals, the retrofit project team used Tridium- an open Niagara-based BMS, as well as a Niagara-at-the-Edge approach.

THE SOLUTION

Niagara Edge 10 controllers offer superior price- performance when driving applications such as zone temperature control and the operation of fan coil units, single-stage air handling units, elevators and more. Niagara Edge 10 controllers run the full Niagara stack, with 10 points of on-board IO and IO-R expansion capability. With this design, the Miramar Beach Resort operations team would be able to oversee, control and gain insight from many more data points, while still having only one operating system to learn.

To complete the BMS retrofit, existing DDC Panels, field devices and wiring were reused, replacing only the controllers inside existing DDC panels with Tridium JACE and Niagara EdgeTM10 Controllers and IO modules. Also the existing front-end supervisory control unit was replaced with Tridium's Niagara Supervisor and a custom Niagara user interface was built. The Niagara network for the whole tower comprises of 3 JACE 8000s, 22 Edge 10 controllers and 8 IO-34 and 23 IO-16 IO modules installed in 25 DDC panels. The customized graphical UI now offers histories and alarms that make any issues easy to detect, root causes easy to identify and resolution fast to happen.

“ I have been working along with Green Optima since 2016 and have had a great experience working with them during these years. Their quality of work and outcome has always been professional in all the projects worked with them. Especially for the Miramar Al-Aqah BMS Upgrade, using Tridium's unique open-protocol solutions. Miramar had multiple packages with many challenges, however, the team performed extremely well and had an efficient output in implementing a new Niagara based BMS, PICV's & Metering packages. An official appreciation was also presented to one of their employees for his attention to detail, clarity in communication, and extended support for the Miramar project. Overall, the team is very professional and is committed to deliver an excellent job. We look forward to working with our premium partners Green Optima for future projects too. ”



Mirza Shaheen Baig
Implementation Manager,
Taka Solutions

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THE RESULTS

Miramar al Aqha Beach Resort was provided with a completely open and refreshed BMS, with low operating and maintenance costs. Close monitoring and optimizing of operations through Niagara Framework has proven to assist in energy savings at no negative effect to comfort level. Early detection of equipment failures or reduced efficiency reduces energy consumption and also maintenance costs.

Energy efficiency measures have been identified with an initial estimation of over 20% of energy & water savings projected.

FAST FACTS:

Project Type: BMS Retrofit of a Multi-Use Building
Commercial/Hotel/Residential

Client: Taka Solutions

Niagara Partner: Green Optima

Property: Beach Resort spanning over 56,770 m²,
321-rooms.

Retrofit Date: 2021

HVAC Equipment: Air-Cooled Chiller(4); Pumps
(4); AHUs (18); FAHUs (12); BTU(1); Water
meter(1)

Key Technologies: Niagara Supervisor, Tridium
JACE 8000, Niagara Edge 10 Plus IO Modules



ABOUT GREEN OPTIMA

Green Optima is a well-known Tridium Partner in the UAE and an experienced system integrator delivering innovative, high quality, economical integrated building management solutions. Founded in 2006, its team of experienced professional engineers deliver customized solutions with top-of-the-range control, monitoring, energy and cost-saving objectives as a priority. Green Optima is actively involved in successfully implementing integrated automation solutions in the government and private sectors for retrofit and ESCO companies, and is a strategic supplier of Taka Solutions. It has proven ability to deliver BMS solutions with speed, tech-savvy flexibility and cost-efficiency as evidenced by its impressive project portfolio. Additional information about Green Optima is available at www.greenoptima.ae

ABOUT TRIDIUM

For over 20 years, Tridium has led the world in business application frameworks — advancing truly open environments that harness the power of the Internet of Things. Our products allow diverse monitoring, control and automation systems to communicate and collaborate in buildings, data centers, manufacturing systems, smart cities and more. We create smarter, safer and more efficient enterprises and communities — bringing intelligence and connectivity to the network edge and back. Additional information about Tridium is available at www.tridium.com

ABOUT TAKA SOLUTIONS

Taka Solutions is a UAE-based company that delivers comprehensive energy solutions to improve energy and water efficiency, reduce carbon impact and save money, using innovative financing models. Taka Solutions' comprehensive turnkey offer combines consulting, financing, implementation, energy and O&M services to help customers meet their efficiency goals without sacrificing the standards of comfort, and creating positive economic, social and environmental impact. Additional information about Taka Solutions is available at: www.takasolutions.com