



### The Challenge

After being at the center of health and fitness, sports, and recreational activities for over ten decades, in 2010 the Mount Desert Island YMCA became concerned about their environmental impact and operating expenses at their facility in Bar Harbor, Maine. They desired to find a solution to increase their energy efficiencies that aligned facility capital spending with sustainable, long-term organization objectives.

### Our Findings

- A 25% reduction in annual energy costs resulting in a savings of approximately \$26,855 annually
- Predicted return on investment of 1.1 years
- Improved capital and lifecycle investment decision making
- Extended service life of facility assets



### The Solution

The Mount Desert Island YMCA (“MDI Y”) is located in Bar Harbor, Maine, is approximately 35,000 square feet and was built in 1996. In an effort to reduce their environmental impact and operating costs, they engaged Cordjia Capital Projects Group (“Cordjia”) to perform an Building Systems Operational Check.

Our team focused on the mechanical, electrical, and plumbing systems, building automation system, and building operations. We verified that the systems and equipment were installed pursuant to the design drawings. We inspected the condition and confirmed the age of all major components as well as evaluated all documents and sequence of operations for proper systems installation and operations. We tested and operated all sensors, actuators, valves, and system components to ensure proper operation. Finally, we provided technical feasibility, cost savings, return on investment, and new energy saving design options.

Systems evaluated included:

- Boilers and De-Stratification Pumps
- Air Handling Units
- Air Conditioning Units
- Heat Recovery Units
- Radiant and Baseboard Heat
- Unit Heaters
- Pool Air Handler and Circulation Pumps
- Domestic Hot Water System
- Hot Water Circulation Pumps
- Building Automation
- Lighting and Exit Signage

#### FINANCIAL HIGHLIGHTS

▪ Total Implementation Cost:	\$40,469
▪ Efficiency Maine Incentive:	(\$11,982)
▪ Cost to MDI Y:	\$28,487
▪ Annual Energy Savings:	<b>\$26,855</b>
▪ Return on Investment:	<b>1.1 years</b>

#### Findings

Cordjia’s Building Systems Operational Check determined that the mechanical systems are currently running with limited automated control. The heating system is not efficient and potentially overheats parts of the building. Numerous valves and adjustments are out of tolerance allowing the equipment to run continuously or not allowing it to run at all. The mechanical equipment appears to be lacking preventative maintenance and its poor condition is not due to age. Several pieces appeared not to be working. Variable frequency drives should be installed on the hot water circulation pumps, pool air handler, and pool circulation pump. The domestic hot water system should be redesigned.

With the implementation of all the recommendations, the MDI Y would recognize a 25% reduction in annual energy costs or approximately \$26,855 annually. With the Efficiency Maine incentive, they will realize a return on investment of 1.1 years.

Cordjia has commenced implementing energy savings solutions at the MDI Y.

