ELARA ENGINEERING

Big Picture Thinking. Practical Approach. Sustainable Design.

MA Center Chicago (MACC) – Medium Voltage Electrical Upgrades

Project Highlights and Results

- Design upgrades to improve the reliability of existing electrical systems, replace aged equipment, and create additional electrical capacity for building renovations and new construction
- New medium voltage campus distribution system
- Multi-building, multi-use spiritual campus that includes housing, meeting/event spaces, athletic and dining facilities, and onsite water tower and treatment plant

Project Background

Owner:	**MA Center Chicago**
Location:	**Elburn, IL**
Team/Team Lead:	**Bhupendra Tailor, Don Bezek**
Elara Role:	**MEP Design Engineer**
Type:	**Electrical System Replacement and Upgrade, New Construction**
Construction Cost:	**$1,000,000 (Electrical)**

Project Overview

Building Type:	**Spiritual Campus (Lodge, Gymnasium, Event Hall, Workshop, Kitchen Building, Auditorium, Water Tower, Treatment Plant)**
Building Attributes:	**Existing: 6 Single-Story Buildings; 119,400 SF New Construction: 313,000 SF (townhomes, spiritual hub, administration/multi-purpose center, school)**
Initial Construction:	**1958**
MEPFPIT Systems:	**Medium Voltage Campus Power**

Innovation

- Coordinated with Commonwealth Edison to finalize needed system equipment to support Elara's calculated 12KV load for campus building renovations and future additions.
- Installed new medium voltage switchgear and transformers to serve newly constructed townhomes and administrative/multipurpose center. Additional transformer installed at an existing substation building.
- Specific upgrades and improvements include:
  - **Campus.** Designed new medium voltage campus substation switchgear and associated campus distribution to existing building panelboards with capacity for new and future buildings.
  - **Chalets, Villas and Townhomes.** MEP schematic design and site lighting and related construction services for the new structures.
  - **Kitchen, Gymnasium, and Event Hall Building.** Replaced the existing panelboards in the kitchen, gymnasium and event halls fed from the campus substation switchgear. Designed new power distribution for a 28,000 square foot gymnasium and 10,000 square foot event hall. A new code compliant grounding system was also installed for each of the gymnasium and event hall buildings.
  - **Water Tower.** Designed/Installed new code compliant system that included a new panelboard, new transformer and associated wiring, including provisions for a future backup generator.