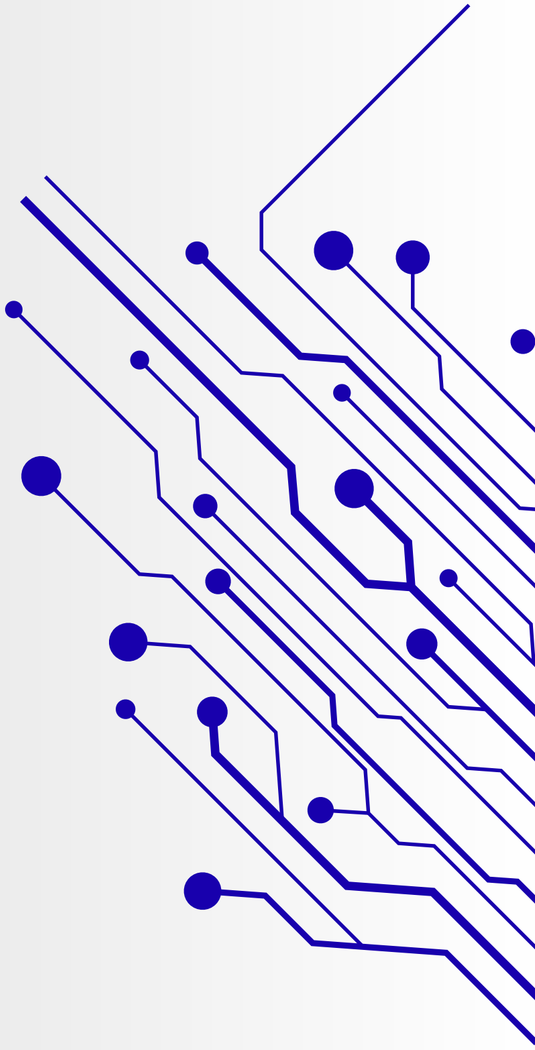
Leah Mae Arevalo, REE

Electrical Design & Cost Estimate Engineer

Electrical Systems Design | ETAP Analysis | BOQ & Cost Engineering | Infrastructure & Building Projects

Batangas, Philippines
leahmaesandoval04@gmail.com

Table of contents



01
Introduction

Registered Electrical Engineer with 6+ years of experience specializing in electrical design and cost estimation for infrastructure, energy, and utility projects.

Experienced in EPC/EPCM environments, delivering detailed electrical system designs alongside accurate quantity take-offs, BOQ preparation, and budget generation.

Combines strong technical design expertise with cost engineering capabilities to produce efficient, compliant, and cost-optimized electrical solutions.

02
Core Skills

Design
- Power Distribution Systems
- Lighting & Power Layouts
- Single Line Diagram
- Load Calculations

Analysis
- Load Flow (ETAP)
- Short Circuit
- Voltage Drop

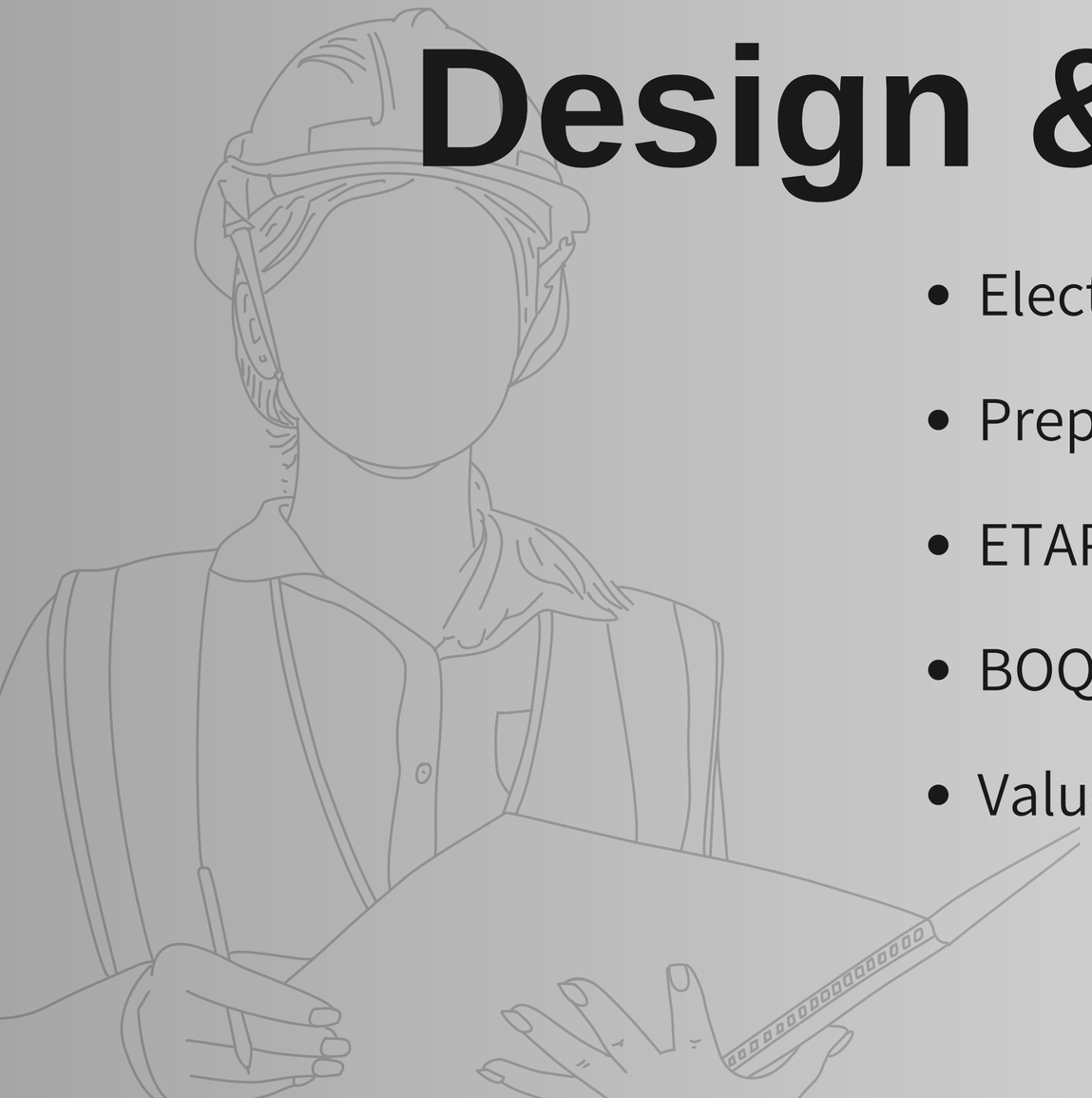
Cost Engineering
- Quantity Take-Off (PlanSwift)
- BOQ Preparation
- Cost Estimation & Budgeting

Tools
- AutoCAD
- ETAP
- PlanSwift
- Dialux
- MS Office

Standards
- Philippine Electrical Code
- National Electrical Code

03

Design & Cost Expertise



- Electrical system design for infrastructure & utilities
- Preparation of SLD, layouts, and schematics
- ETAP simulations for system validation
- BOQ and electrical cost estimation
- Value engineering and design optimization

04
Projects

SRPGC 2x350MW Thermal Power Plant

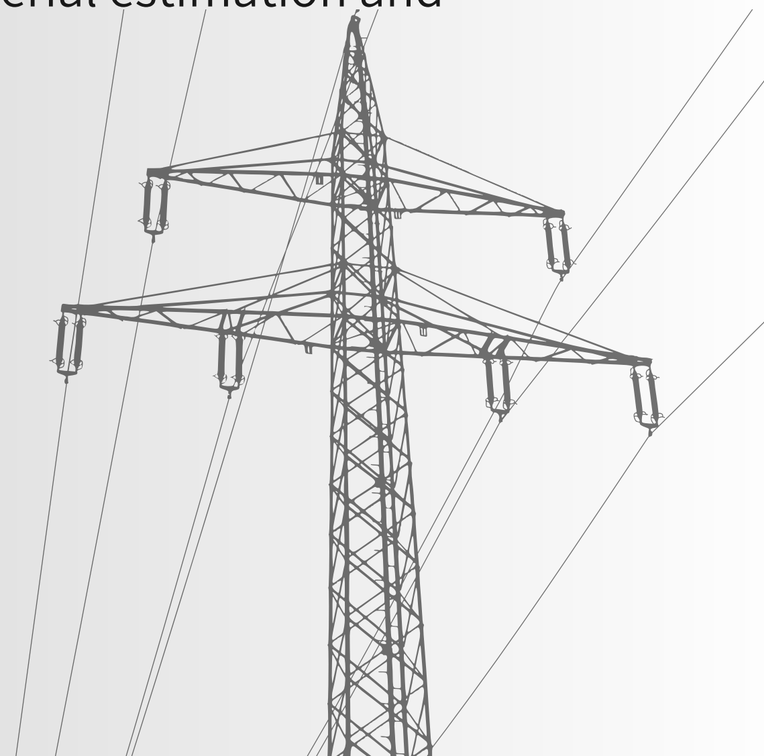
Type: Energy (On-going)

Electrical Design Scope

- Developed power distribution, lighting, lightning and grounding system layout for Non-Technical Buildings
- Lighting System design for Jetty and Coal Yard
- Created electrical schematics and system designs
- Ensured compliance with standards

Cost Engineering Scope

- Assisted in cost evaluation of electrical systems
- Supported material estimation and budgeting



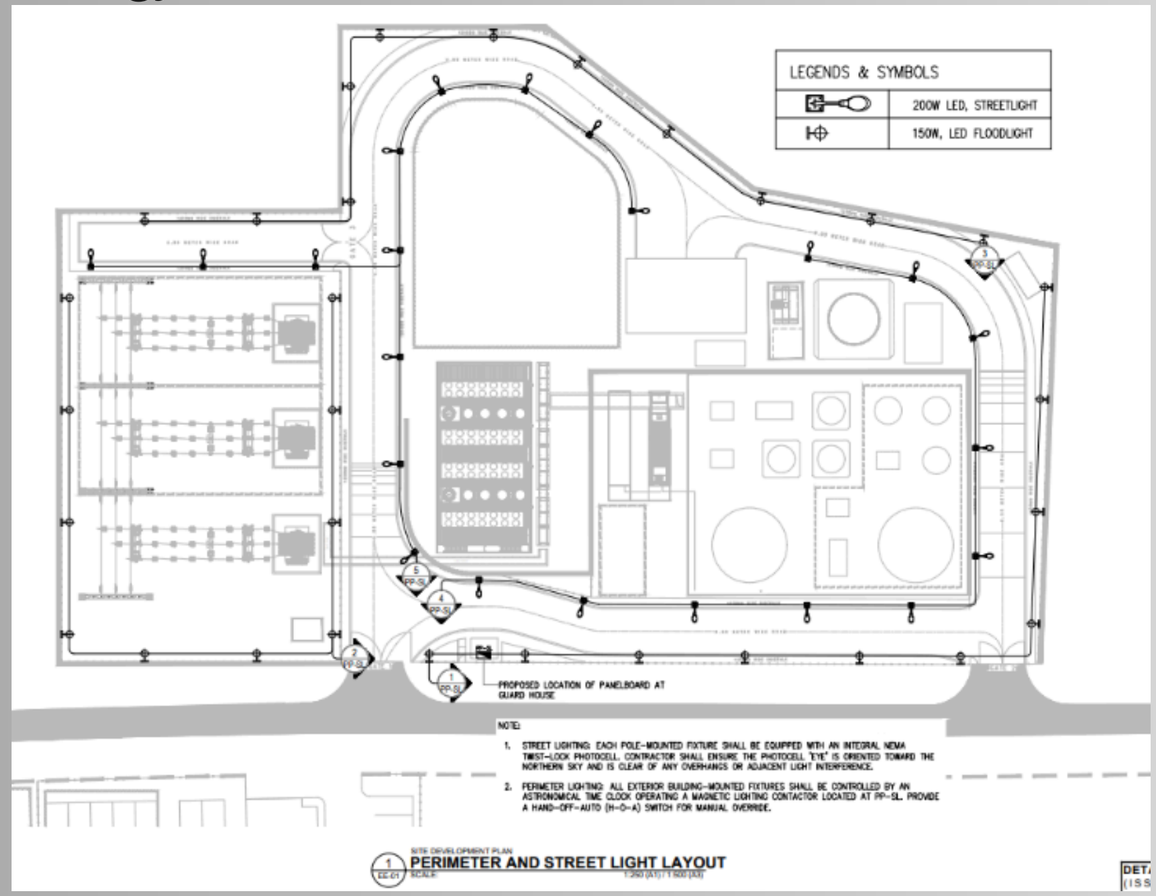
Impact

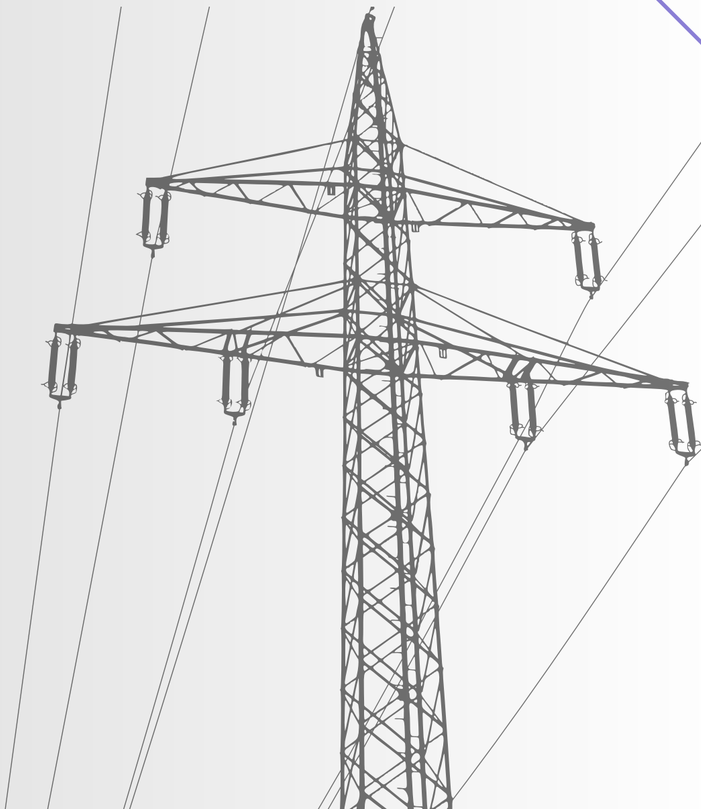
Delivered efficient and compliant system design

Supported cost optimization

4x1.88MW ROXAS BUNKER-FIRED POWER PLANT

Type: Energy





Electrical Design Scope

- Electrical System Design (Perimeter and Streetlighting)
- Coordinated with design team for system integration

DESIGN AND BUILD FOR AUGMENTATION OF RECOVERY FACILITY OF LMTP1

Type: Water Utility

Cost Estimate Engineer (with Design Optimization Support)

- Supported electrical cost estimation for a water treatment facility, while contributing to design optimization through ETAP-based cable sizing analysis.

Design Optimization Contribution

- Conducted **ETAP** analysis for cable sizing
- Identified oversized cable specifications
- Recommended optimized cable sizes based on load and voltage drop

Cost Engineering Scope (Primary Role)

- Performed quantity take-offs and BOQ preparation
- Developed electrical cost estimates and budget inputs
- Reviewed plans and specifications for estimation accuracy

Impact

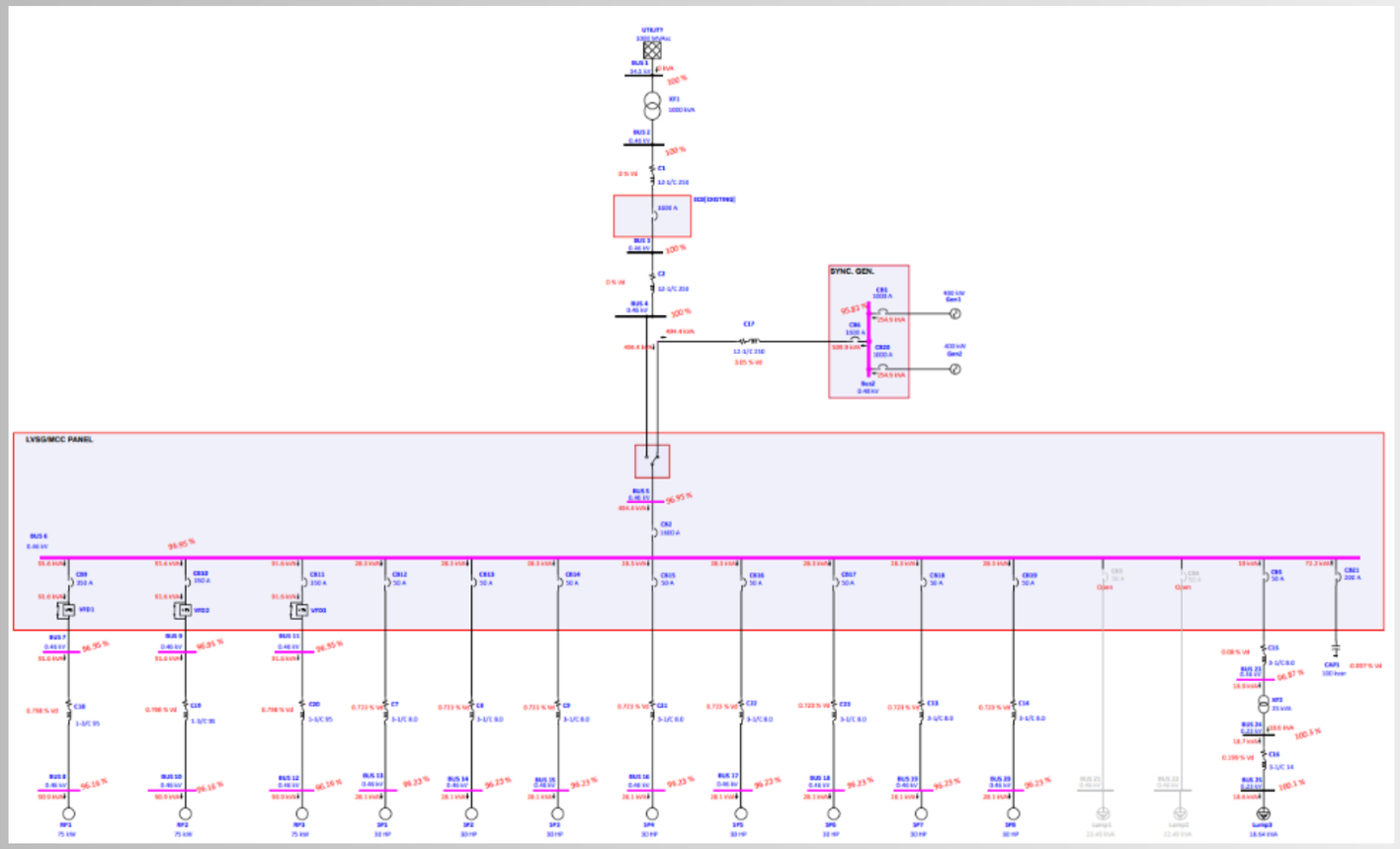
Reduced project cost by 12-15%

Maintained system safety and compliance

Improved cost efficiency without compromising performance

DESIGN AND BUILD FOR AUGMENTATION OF RECOVERY FACILITY OF LMTP1

Type: Water Utility



LOAD FLOW ANALYSIS

10MLD Water Treatment Plant

Type: Water Utility

Electrical Design Scope

- Developed power distribution, lighting, lightning and grounding system layout for Non-Process Buildings as per Employer’s Requirement
- Created electrical schematics and system designs
- Ensured compliance with standards

Impact

Delivered efficient and compliant system design

PROPOSED MARINE SCIENTIFIC RESEARCH (DENR)

Type: Government Building (On-Going)

Electrical Design Scope (Main Focus)

- Developed power distribution system design
- Designed lighting and auxiliary systems
- Prepared electrical layouts and schematics
- Ensured compliance with applicable electrical code

Cost Engineering Scope

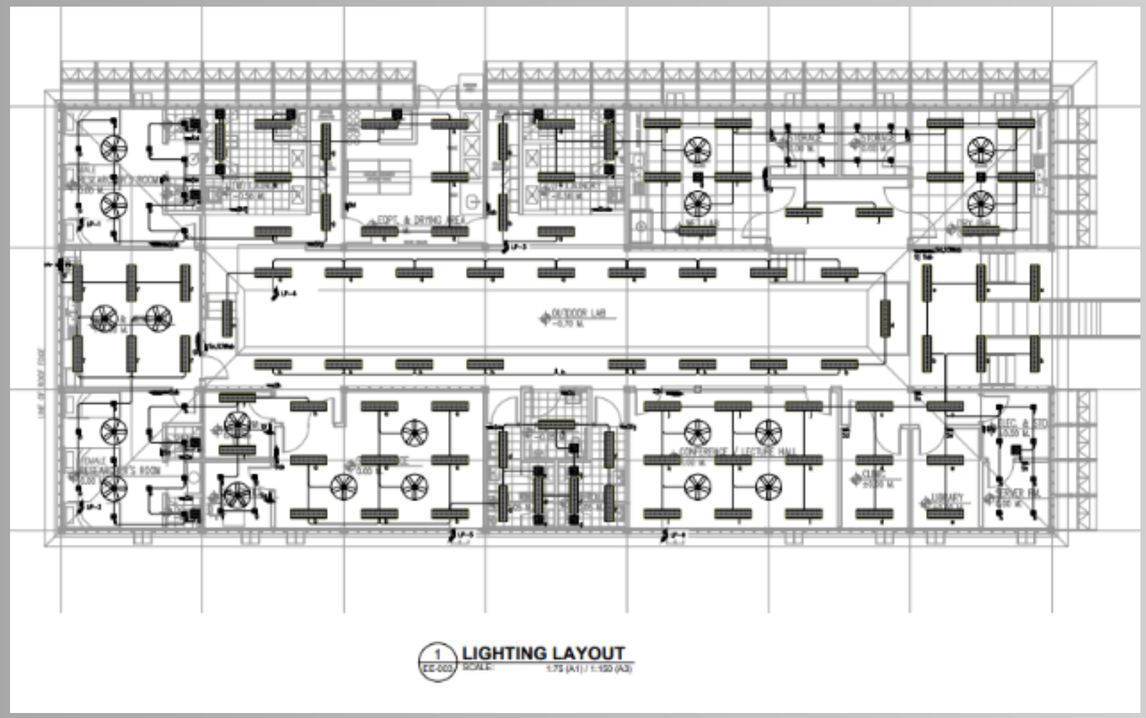
- Assisted in material quantity estimation
- Supported cost evaluation of electrical systems

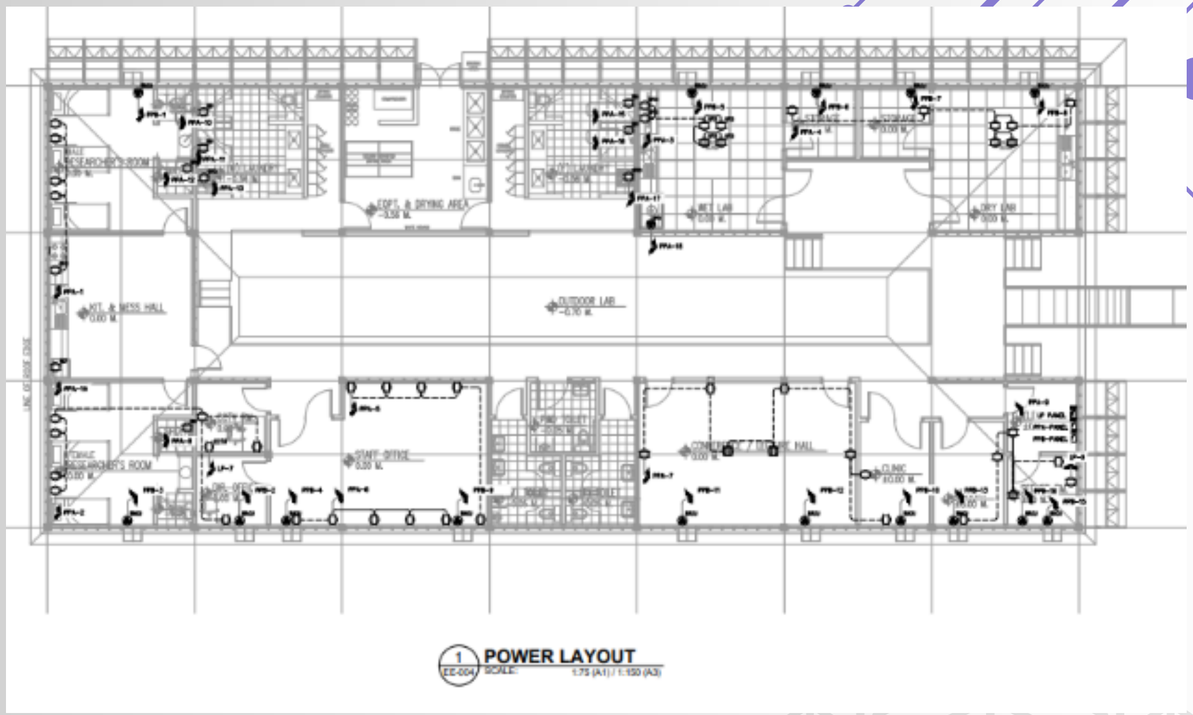
Impact

Delivered efficient and compliant system design

PROPOSED MARINE SCIENTIFIC RESEARCH (DENR)

Type: Government Building (On-Going)



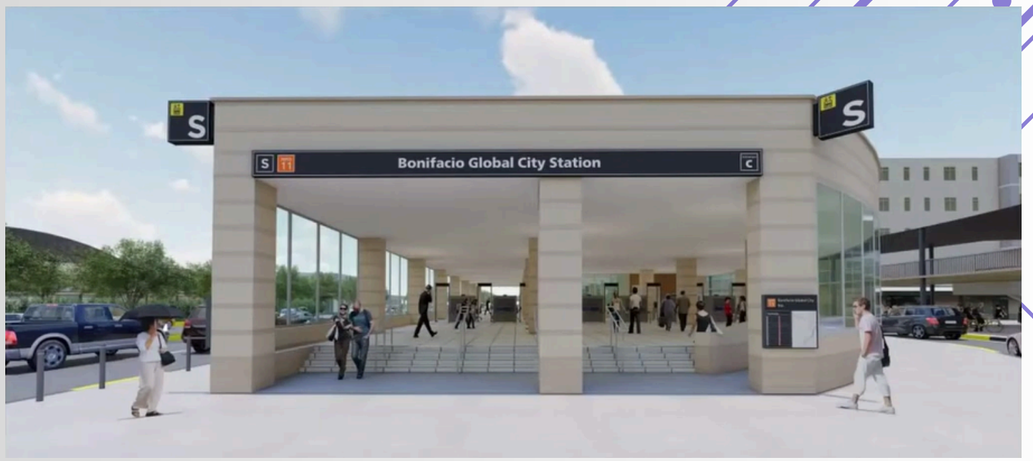


Note:

“Design developed for a government facility requiring reliable and continuous power supply for research operations.”

CP-105 Subway Station (BGC & Kalayaan)

Type: Infrastructure



Electrical Design Scope

- Reviewed electrical layouts and system requirements
- Coordinated with design team for system integration

Impact

Contributed to successful bid award
Delivered accurate cost projections for large-scale project

Cost Engineering Scope

- Performed detailed quantity take-offs using PlanSwift for Electrical and Auxiliary Systems
- Prepared BOQ and cost estimates
- Supported budget development during bidding stage

05
Design & Cost Integration Approach

1. Analyze load requirements and system demand
2. Develop efficient electrical design (SLD, layouts)
3. Perform system validation (ETAP analysis)
4. Conduct quantity take-offs and BOQ preparation
5. Optimize design through value engineering
6. Align technical design with project budget

I specialize in integrating electrical design and cost engineering to deliver practical, efficient, and budget-aligned solutions for complex infrastructure and building projects.