



Power • Generation • Renewable Energy

About Us

The Firm

CMA Architects & Engineers LLC, founded in Puerto Rico in 1959, is a full service multi-disciplinary firm. Today, CMA continues to be one of the largest firms on the Island operating from its 30,000 sq.ft. office building in Guaynabo, Puerto Rico and growing into the US market with an office in Miami.

Experience

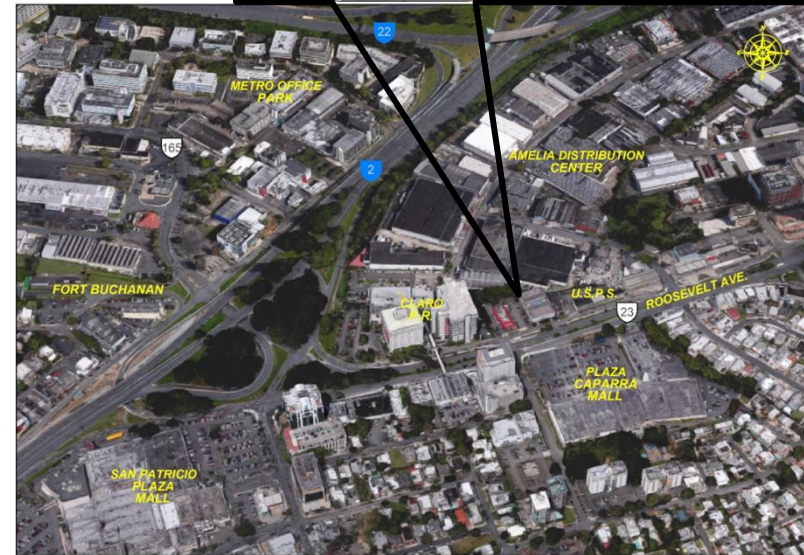
With **over 58 years** of continuous consulting practice in the fields of architecture and engineering, CMA offers comprehensive assistance from Planning and Design Development, Start-up, Field Observation and Construction Management. The firm is Minority Business Enterprise, and is proud member of the U.S. Green Building Council.

Staff

CMA staff encompasses **over 90 professionals** in the fields of architecture, planning, civil, transportation, water resources, environmental, mechanical and electrical engineering, as well as cost estimate and construction management.

CMA walks the walk!

In 2010 we invested in the design and installation of a solar system at our offices in PR, resulting in a 15 % reduction of our electric power usage.



JORGE TIRADO, P.E.

Managing Member
Civil Engineering
Professional Societies: CIAPR, ASCE

JORDI BOFILL, P.E.

Member
Environmental Engineering
Professional Societies: CIAPR, AAEE, AIDIS,
ASCE, AWWA, WEF,
Diplomate American Academy of Environmental
Engineers,
Past President, Puerto Rico Chapter of WPCF and AWWA
Past Member, WPCF Board of Control (1985-1988)

JOSE A. CARRO, P.E.

Member
Transportation Engineering
Professional Societies: CIAPR, ASCE, ITE, T&DI, TRB, SAME,
ACI, PCI
Past President ASCE Puerto Rico Chapter

ARIEL R. VERA BEVERAGGI, AIA, NCARB, CDT, LEED AP

Member
Architecture
Professional Societies: AIA, CAAPPR, NCARB, CSI, USGBC

RICARDO A. HERRERA, P.E.

Member
Structural Engineering and CADD Services
Professional Societies: CIAPR, ACI, ASCE

ALVIN M. RODRIGUEZ, P.E.

Member
Structural Engineering
Professional Societies: CIAPR, ASCE, ACI,
Earthquake Engineering Research Institute, Seismological
Society Of America

GERALDO E. JUSINO-ARROYO, P.E., CDT, LEED AP

Member
Project & Construction Management
Professional Societies: CIAPR, CSI, USGBC, ASTM,
ACI, AWS, DHI, FBPE, ICRI, NRCA

SUZ ANN ARROYO, P.E., LEED AP, HFD

Member
Mechanical Engineer
Professional Societies: CIAPR, ASHRAE

LUIS MERLE, P.E.

Member
Mechanical Engineering
Professional Societies: CIAPR, ASHRAE, ISPE,
NFPA, ICC

ABRAHAM SANCHEZ, P.E.

Member
Electrical Engineer
Professional Societies: CIAPR, IEEE, SIE

FRANCISCO VALENTÍN, P.E.

Member
Electrical Engineer
Professional Societies: CIAPR, IEEE

JOSE TORRES, P.E.

Member
Sciences and Environmental Engineering
Professional Societies: CIAPR, AIDIS

PEDRO JANER, P.E., REM, LEED-GA

Member
Sciences & Environmental Engineering
Professional Societies: CIAPR, AIDIS, INCE,
IECA, SWANA, NREP, USGBC, WEF

Leadership

RAFAEL E. BULERIN-ROSARIO, P.E., MEM, CDT, PMP

Associate
Project & Construction Management
Professional Societies: CIAPR, PMI, ASTM, ASCE, ACI

JOSE O. COLON VELEZ, P.E.

Associate
Transportation Engineering
Professional Societies: CIAPR, ASCE

CARLOS A. MEDINA ALAMEDA, P.E.

Associate
Civil Engineering
Professional Societies: CIAPR

JUAN BOLIVAR FUENTES, PH.D., P.E.

Associate
Structural Engineering
Professional Societies: CIAPR

IRENE PEREZ RAMIREZ, P.E.

Associate
Project & Construction Management
Professional Societies: CIAPR

LUIS JULIAN VILLALON, P.E.

Associate
Mechanical Engineering
Professional Societies: CIAPR

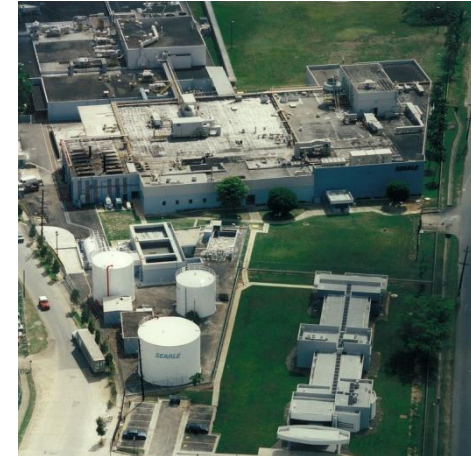
ALEXIS MARTINEZ, P.E.

Associate
Civil Engineering
Professional Societies: CIAPR

Why CMA?

Advantages

- Fully integrated A/E team
- 58 year of proven track record
- Technical and local expertise
- Understanding and efficient execution of Client's goals
- Specialized services thru the entire project life cycle
- Managing projects from conceptual design through post-construction phases



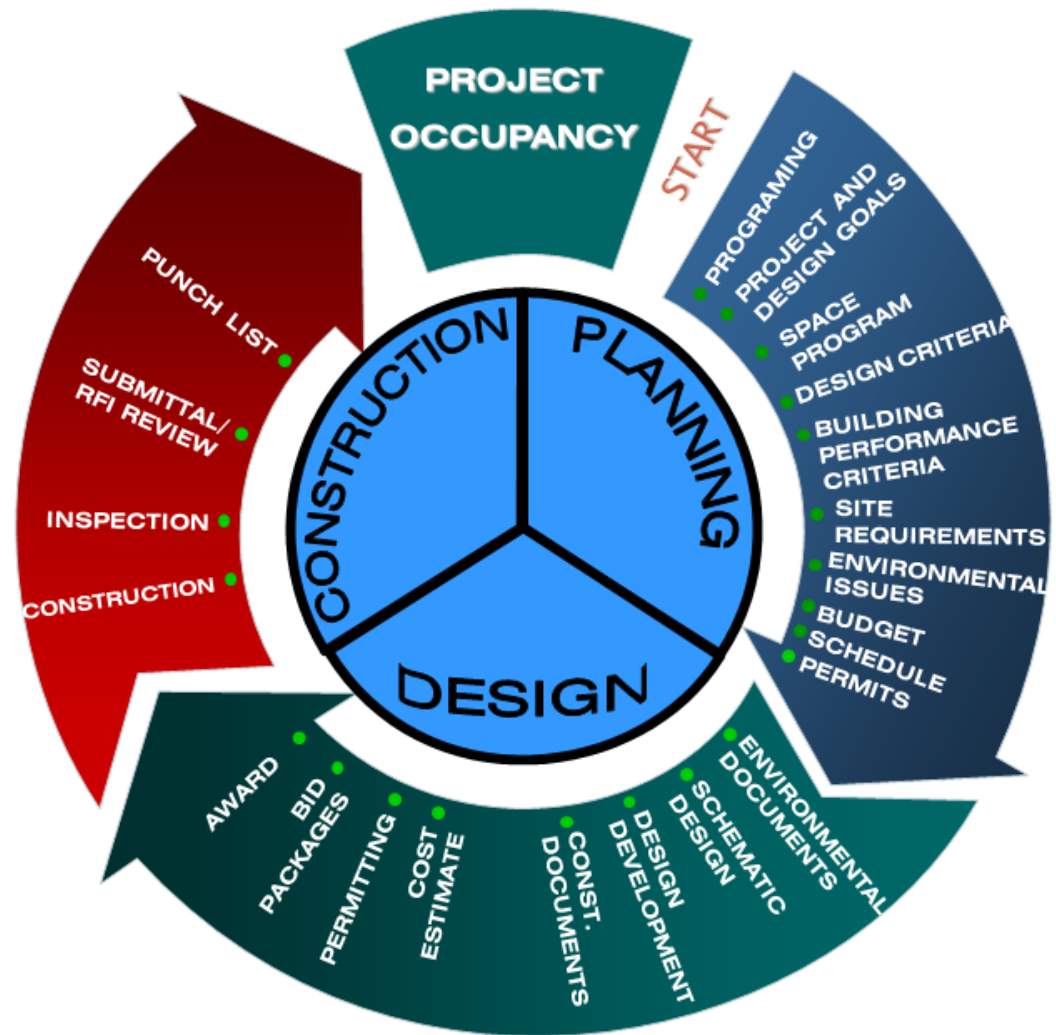
... solutions to make our client's goals successful !

Fully Integrated Services

CMA Architects and Engineers LLC can provide services for the complete project cycle:

- ❖ Planning
- ❖ Design
- ❖ Construction

From **Conception to Completion**, CMA can assist you thru all the project activities to ensure the final product is what you envision.



ELECTRICAL ENGINEERING SERVICES



Power

- High, Medium and Low Voltage Transmission and Distribution
- Substation and Switchyards
- Gas Insulated Substation (G.I.S)
- Fault Analysis, Arc Flash and Protection Coordination Studies
- Grounding & Lightning Protection
- Industrial Control & Instrumentation
- Communications and Data Infrastructure
- Special Occupancies
- Load Management
- Building Management Systems
- Construction Management



Renewable Energy

- Site surveys and planning
- Energy Assessments
- Economic Analysis
- System Sizing
- Residential, Commercial and Utility Scale Systems
- Electrical Integration
- Structural Analysis
- Utility Interconnection Design
- Certification and Permits
- Inspection





Emergency Power Systems

- Optional Standby Systems
- Critical Operations Power Systems (COPS)
- Legally Required Emergency Systems
- Energy Storage Systems
- Uninterruptable Power Supply (UPS) Systems
- Access Control and Security Systems
- Fire Alarm Systems
- Emergency Lighting



Sustainability

With **LEED Certified Professionals** in most of our disciplines, and CMA's membership in the U.S. Green Building Council, we are able to provide our Clients with the alternatives that best suit the LEED Certification level pursued.

Some projects that have achieved LEED Certification are:



LEED Gold. Environmental Protection Agency Region 2. City View Plaza, Guaynabo PR



LEED Silver. Internal Revenue Services. City View Plaza, Guaynabo PR



LEED Certified. Department of Veteran Affairs. El Nuevo Día Annex Building, Guaynabo PR

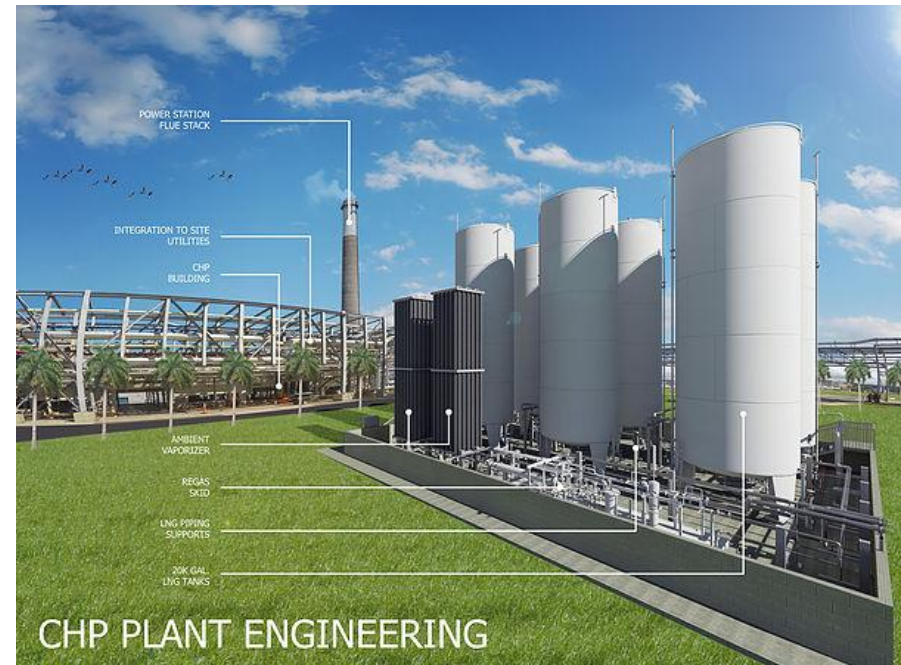
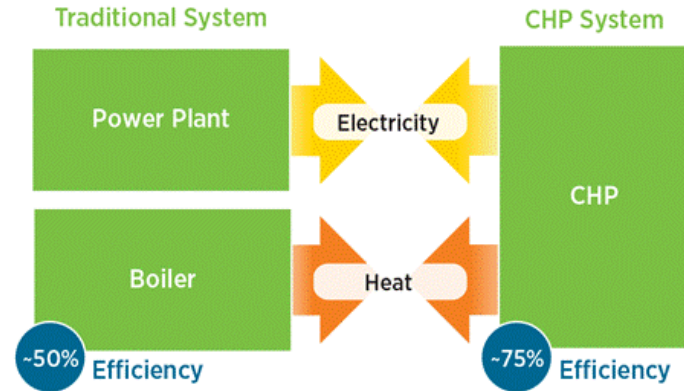


LEED Silver. US Customs and Border Protection. City View Plaza, Guaynabo PR

OPERATIONAL AND ENERGY SAVINGS

Co-Generation

- Combine Heat and Power (CHP) Systems increased utilities efficiency
- Reduce energy and operational cost
- Stable energy source
- Business continuity
- Cleaner fuel alternatives
- Power independence
- Increased reliability and facility value
- CMA will guide you thru your project life cycle from conceptual to post construction phases



EXPERIENCE IN THE
INDUSTRY

Transmission & Distribution

- **PREPA Martin Peña**
 - Description: 115/38 kV G.I.S
 - Construction Cost: \$16 M
- **Palo Seco**
 - Description: 115/38 kV G.I.S
 - Construction Cost : \$4.7 M
- **Hacienda San José Substation and Transmission Center**
 - Construction Cost: \$4 M



Emergency & Prime Generation

- **Microsoft P.R. Ops. Stand-by Generator**
 - Construction Cost: \$9.8 M
- **Rehabilitation of Culebra Power Station**
 - Construction Cost: \$2 M
- **Schnitzer Power Generation Building**
 - Construction Cost: \$700 K



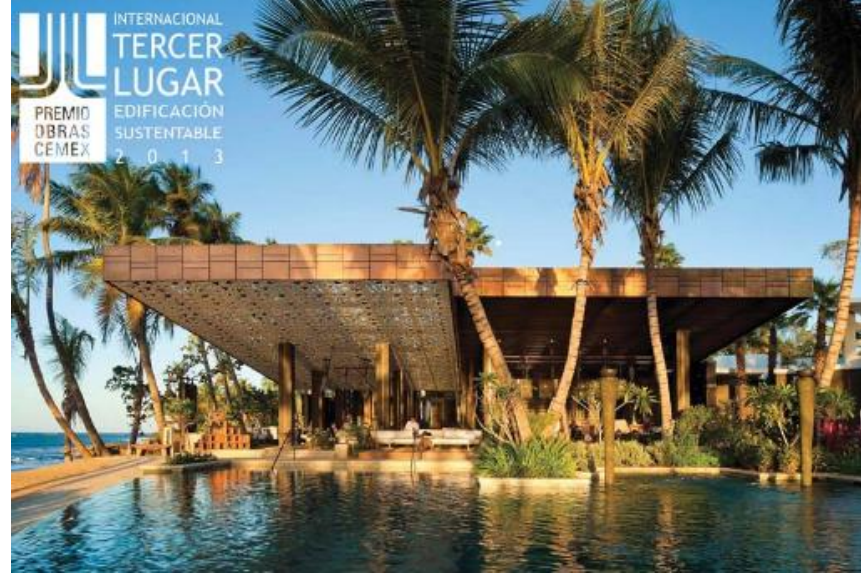
Industrial and Commercial

- **Honeywell Aerospace**
 - Construction Cost: \$23 M
- **Microsoft Puerto Rico Operations**
 - Construction Cost: \$24 M
- **City View Plaza**
 - Construction Cost: \$34 M



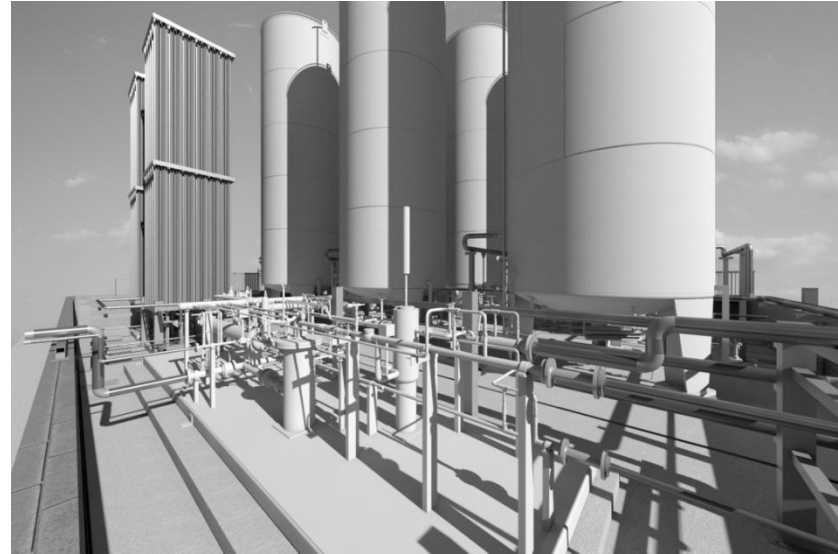
Hospitality

- **Ritz Carton Reserve at Dorado Beach**
 - Construction Cost: \$342 M
- **Torre del Cardenal Residential Building**
 - Construction Cost: \$31 M
- **Cosmopolitan Condominium**
 - Construction Cost: \$45 M



Renewable and Co-generation

- **Oriana Energy Solar Farm**
 - Construction Cost: \$155 M
- **GES AES Illumina Solar Farm**
 - Construction Cost: \$19 M
- **AbbVie CHP Plants**
 - Project is currently under Construction
 - Estimated Construction Cost : \$30M

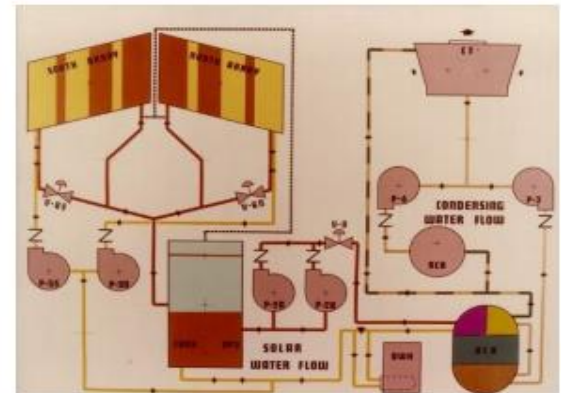
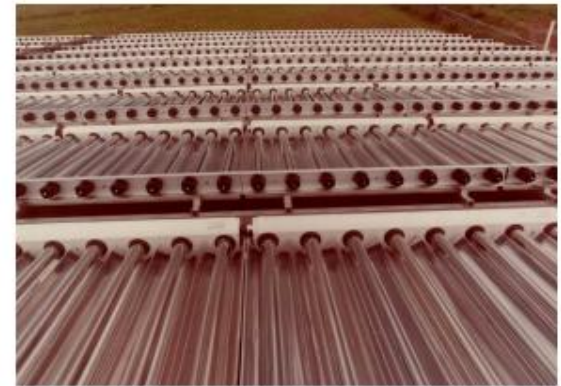


Commitment to Renewable Energy

Going green is not something new to CMA, we have a long history on green design:

- As back as 1977, CMA was the first company in Puerto Rico in designing a solar cooled industrial building.
- This decade, CMA was part of the design team that developed the largest solar power plant in the Caribbean (Oriana Solar Farm).

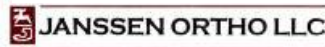
CMA walks the walk!



Partial Client List



COMPANIA TRES RIOS



JW MARRIOTT.
HOTELS & RESORTS



Essroc San Juan
Italcementi Group



CERVECERA
DE PUERTO RICO



Microsoft

Honeywell



PEPSICO



abbvie

CMA
ARCHITECTS &
ENGINEERS LLC



Excellence , commitment and experience; all under one roof...

