CMA
ARCHITECTS &
ENGINEERS LLC

Architecture • Engineering • Project Management • Inspection

CMA Architects & Engineers LLC | 1509 F.D Roosevelt Ave. Guaynabo PR 00968-2612 | 787-792-1509 | www.cmapr.com

About Us

CMA Architects & Engineers LLC is a Puerto Rican firm that offers multi-disciplinary service in the fields of Architecture and Engineering. On 2019, we celebrated our 60th year of establishment as a firm.

Our team of 73 professionals in the disciplines of engineering and architecture hold a myriad of certifications and licensing, among which we have:

50 Licensed Engineers

8 Engineers in Training (EIT)

3 Graduate Engineers

4 Licensed Architects

5 Architects in Training (AIT)

7 LEED APs

1 PMP / 1 SAP

2 PhD's

16 OSHA Trained Professionals

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Members

ALVIN M. RODRIGUEZ, P.E.
Managing Member
Structural Engineering
Professional Societies: CIAPR, ASCE, ACI,
Earthquake Engineering Research Institute

JOSE TORRES, P.E.
Sciences and Environmental Engineering
Professional Societies: CIAPR, AIDIS

JOSE A. CARRO, P.E.
Transportation Engineering
Professional Societies: CIAPR, ASCE, ITE, T&DI, TRB, SAME, ACI, PCI
Past President ASCE Puerto Rico Chapter

LUIS MERLE, P.E.
Mechanical Engineering
Professional Societies: CIAPR, ASHRAE , ISPE, NFPA, ICC

FRANCISCO VALENTÍN, P.E.
Electrical Engineer
Professional Societies: CIAPR, IEEE

PEDRO JANER, P.E., REM, LEED-GA
Member
Sciences & Environmental Engineering
Professional Societies: CIAPR, AIDIS, INCE, IECA,SWANA, NREP, USGBC, WEF

ARIEL R. VERA BEVERAGGI, AIA, NCARB, CDT, LEED AP
Architecture
Professional Societies: AIA, CAAPPR, NCARB, CSI, USGBC

SUZ ANN ARROYO, P.E., LEED AP, HFDP
Member
Mechanical Engineer
Professional Societies: CIAPR, ASHRAE

GERALDO E. JUSINO-ARROYO, P.E., CDT, LEED AP
Project & Construction Management
Professional Societies: CIAPR, CSI, USGBC, ASTM, ACI, AWS, DHI, FBPE, ICRI, NRCA

YMA DOITTEAU, AIA, PE, LEED AP
Architecture
Professional Societies: AIA, CAAPPR, CIAPR, USGBC, AIA Academy of Architecture for Health

JOSE O. COLON VELEZ, P.E.
Transportation Engineering
Professional Societies: CIAPR, ASCE

RAFAEL E. BULERIN-ROSARIO, P.E., MEM, CDT, PMP
Project & Construction Management
Professional Societies: CIAPR, PMI, ASTM, ASCE, ACI

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Associate Directors

CARLOS A. MEDINA ALAMEDA, P.E.
Civil Engineering
Professional Societies: CIAPR

JUAN BOLIVAR FUENTES, PH.D., P.E.
Structural Engineering
Professional Societies: CIAPR

IRENE PEREZ RAMIREZ, P.E.
Project & Construction Management
Professional Societies: CIAPR

ALEXIS MARTINEZ, P.E.
Civil Engineering
Professional Societies: CIAPR

CHRISTIAN LOPEZ, P.E.
Electrical Engineer
Professional Societies: CIAPR, IEEE, PES

ZAIDA RICO ROLON, P.E., P.H.D.
Transportation Engineering
Professional Societies: CIAPR, ASCE

JOSE ALFONZO FLAQUE, P.E.
Mechanical Engineering
Professional Societies: CIAPR

ELVIN J. PEREZ, P.E.
Structural Engineering
Professional Societies: CIAPR, AISC

We make the Difference

With over 50 years of experience, CMA Architects & Engineers LLC has provided multi-disciplinary services to Municipal, State, Healthcare, Education, Public Housing and Industrial facilities throughout Puerto Rico, in both private and the public sector.

In addition to traditional Architecture and Engineering services that range from planning, design to procurement and project management, we have a division that focuses on Disaster Recovery-Assistance Services and have provided services both in Puerto Rico and the USVI. We covered the most recent disasters: Irma and Maria.

We have two key elements that make is your best choice. First, **our expertise and excellence is a value added** that we offer our Disaster Assistance partners that helps capitalize on Public Assistance aid opportunities; and second **we happen live here too**, so we have a strong commitment to aim toward the best solutions.

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Services

Your one-stop shop for design, permitting, construction management and project administration services

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Full In-House Services

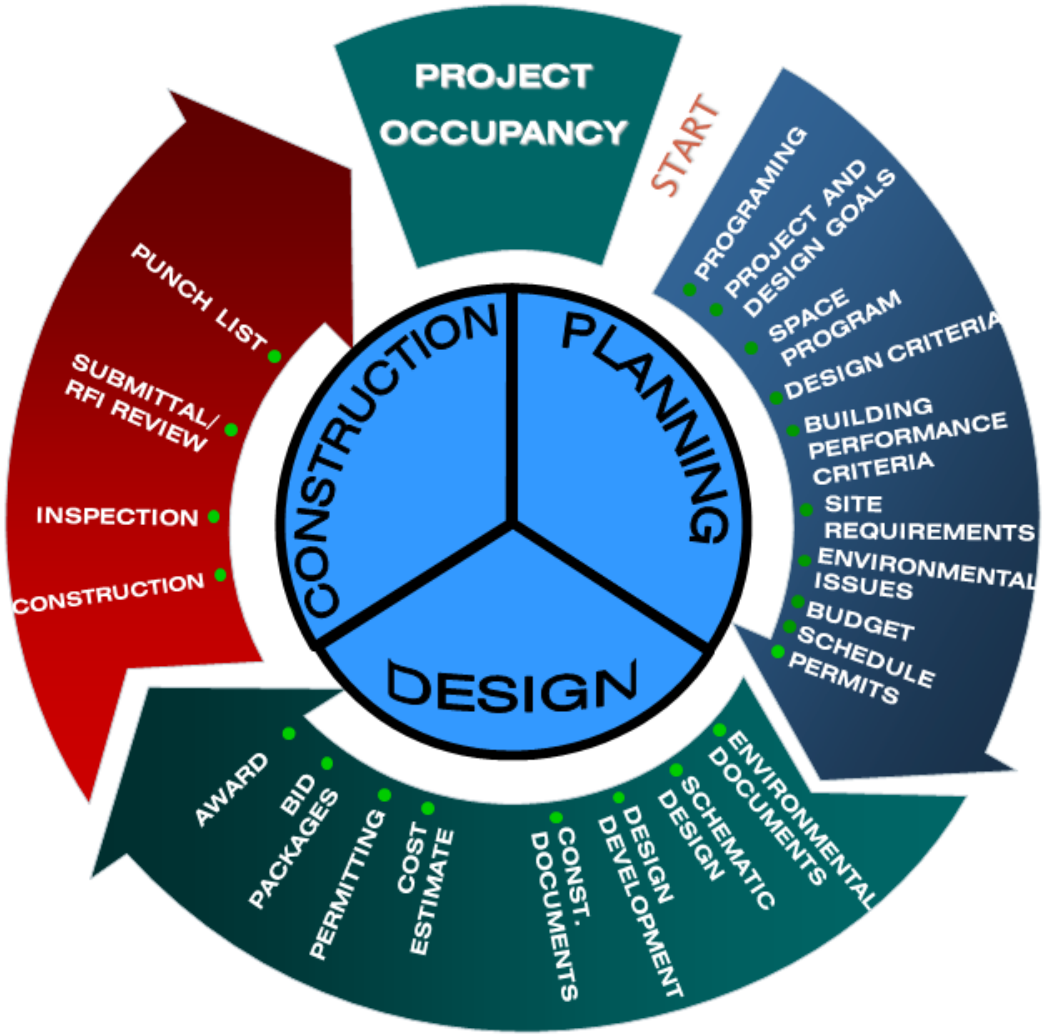
CMA its you one stop shop for engineering and architecture services. Our team of over 140 employees ranges in most fields and can assist you through the full design and construction cycle.

In addition to providing services for:

- Planning
- Design
- Construction

We can offer other assessment services such as: Lead and Asbestos Evaluations as well as Traffic Studies; as well as a Permitting and Disaster Assistance Divisions.

In addition, CMA has a group of pre-qualified consultants which who we have worked with for many years that can complement our services to easy the process. These are geotechnical, surveying, archeology, among others.



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Services

We provide **full in-house A&E services** for the following disciplines and any combination that support the project at hand:

- Architecture
- Civil Engineering
- Electrical Engineering & Solar Power
- Environmental Engineering
- Mechanical Engineering
- Structural Engineering
- Transportation Engineering
- Project and Construction Management

In addition to **other services** that support Architecture & Engineering such as:

- Permits and Endorsements
- FEMA PA Technical Assistance
- Lead and Asbestos Inspections
- Traffic Studies
- Hydrologic & Hydraulic Studies

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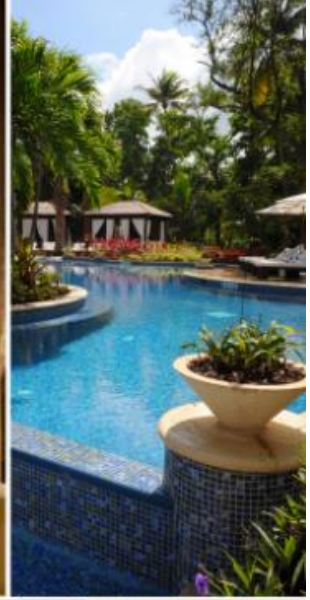

Architectural Services

- Building and Facility Design
- Space Planning
- Master Planning
- People & Material Flow Diagrams
- Code Compliance Assessment
- Life Safety Studies
- Interior Design
- Remodeling
- Restorations
- Presentations
- 3D Modeling

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Civil Engineering

- Site Master Planning & Design
- Infrastructure Master Planning & Design
- Hydrologic & Hydraulic Studies
- River/Stream Corridor Improvements
- Flood Control Structures
- Storm Water management
- Erosion & Sedimentation Control
- Scour Analysis
- Existing Infrastructure Analysis
- Marina Master Plan and Design
- Pump Stations
- Soil Rehabilitation

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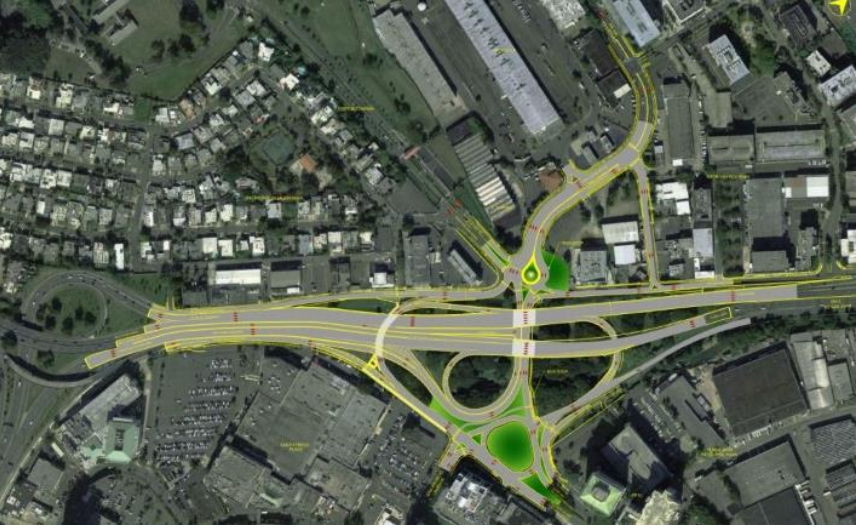

Transportation Engineering

- Highway Route Planning
- Highway & Street Design
- Highway & Pedestrian Bridge Design
- Multi-modal Studies
- Traffic Impact Studies
- Access Studies
- Parking Studies

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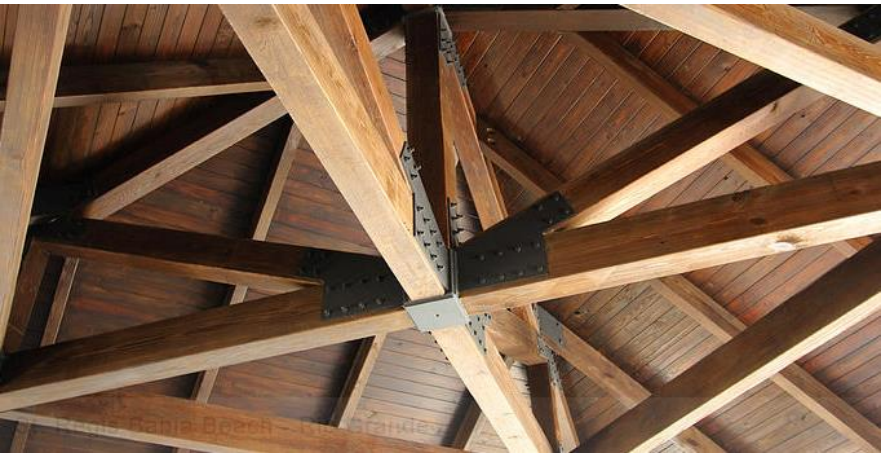

Structural Engineering

- Structural Steel Design
- Reinforced Concrete, precast and post-tensioned Design
- Masonry and wood
- Stainless Steel, Aluminum & Fiberglass
- Structural Evaluations & Studies
- Seismic & Wind Evaluations
- Damage and Performance
- Seismic Retrofit
- Support of Excavations

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Mechanical Engineering

- HVAC
- Plumbing
- Piping & Process Piping
- Fire Protection
- Controlled Environments
- Potent Compound Environments
- Pumping Stations
- Fuel Oil System
- Controls
- Energy Conservation
- Cleanrooms
- Building Assessments

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Electrical Engineering

- High/Low Voltage transmission and Distribution
- Substation and Switchyards
- Protection Coordination
- Distributed Power Generation
- Fault Analysis, Arc Flash Studies
- Renewable Energy
- Lighting & Controls
- Grounding & Lighting protection
- Industrial Control & Instrumentation
- Communications and Data Infrastructure
- Security Systems
- Fire Alarm Systems
- Building Management Systems
- Cogeneration Plants

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Environmental Engineering

- Flora & Fauna Studies
- Soil Remediation Studies
- Noise Level Studies
- LBP & ACM Studies
- Wetlands Delineation
- Tree Inventory & Reforestation Plans
- Environmental Site Assessment (Phase I, II & III)
- SPCC & SWPP Plans
- Water Treatment & Distribution Design
- Wastewater Collection & Treatment Design

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Project & Construction Management

- Project, Program & Construction Management
- Inspections
- Field Observation
- Bid Administration & Analysis
- Cost Estimate
- Scheduling
- Owner Representative
- Pre-Construction Services
- Document Control
- Environmental & Safety Compliance

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Permits & Endorsements

- Environmental Impact Assessment
- Land Use Consultations
- Air Emissions
- Solid Waste
- Earth Extraction
- Tree Pruning, Cutting and Removal
- Wastewater and Storm Water NPDES
- US Army Corps of engineers Joint Permit
- Construction
- Urbanization
- Use Permits
- SHPO & ICP Consultations
- Federal Endorsements

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Testing, Inspections & Assessments

- Property Condition Assessments
- Lead and Asbestos Testing
- Traffic Studies

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Disaster Recovery Services

Facilitate public assistance to applicant through:

- Manage Applicant Damage Inventory.
- Recommend damage site groupings (DIs to Projects) based on similar characteristics, complexities and requirements to complete obligation process.
- Evaluate and Recommend documentation developed for Applicant approval/signature.
- Assist and act as applicant representative at meeting throughout all phases of the application process.
- Use FEMA's delivery model to track applicants' projects.
- Be a key player in informational meetings to communicate program eligibility requirements.
- Assist Applicants in creating and monitoring short-term schedules determine impact on the master schedule
- Help to maintain consistent and thorough communication with applicant, sub applicant and federal government

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Disaster Recovery Services (cont.)

- Coordinate and Perform Site Inspections following FEMA's guidelines and requirements
- Develop Detailed Damage Description and Dimensions Reports.
- Develop Scope of Work based on bets practices, current code and standard requirements.
- Develop Cost Estimates for Damaged Sites based of standard cost estimating standards such as RSMeans or Local Costs.
- Perform Replacement Analysis documentation for submission following FEMA PAPPG 50% Rule Requirements.
- Scope and costing for mitigation measures
- Prepare Environmental and Historic Preservation Proposals
- Prepare Mitigation Proposals as per PAPPG Appendix J.

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Public Assistance Qualifications

With over 30 staff members that hold federal clearance and federal identification from US Homeland Security; as well as Federal Emergency Management Agency certifications. Among the certifications are the following:

- IS-27 FEMA Logistics
- IS-100: Incident Command System
- IS-253: Environmental and Historic Preservation
- IS-393: Hazard Mitigation
- IS-321: Hurricane Mitigation
- IS-322: Flood Mitigation
- IS-800: National Response Framework
- IS-1001 Public Assistance Delivery Model
- IS-1002: FEMA Grants Portal
- IS-1005: Public Assistance alternative Procedures
- IS-1007:Detailed Damage Description and Dimensions
- IS-1008: Scope of Work Development (Scoping and Costing)
- IS-1012:Direct Administrative Costs (DAC)
- IS-1017: Scope Change Requests, Time Extensions, Alternate Projects
- IS-1018: Determination Memorandums and Appeals

FEMA | Emergency Management Institute

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LEED AP ID+C | LEED AP HOMES | LEED AP O+M | LEED AP ND | LEED AP BD+C

Sustainability

With 8 **LEED Certified Professionals** on our staff, 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

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Expertise

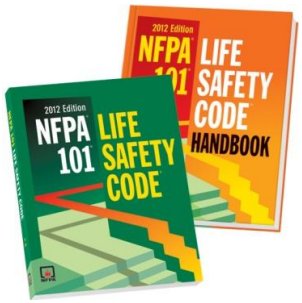
CMA has developed facilities that meet today's regulations and standards with a special focus on best practices, 2012 **NPFA 101** Life Safety code, and the 2014 Guidelines for Design and Construction of Health Care Facilities. The latter, also referred to as the **FGI Guidelines**, sets forth the minimum recommended health care design standards throughout the U.S.

We also comply with design requirements established by accreditation program agencies such as The Joint Commission (JTC) and AAAHC, as well as accessibility standards by ADAAG (ADA 2010) and ANSI/ICC (A117.1 2009).

FGI
FACILITY GUIDELINES INSTITUTE

ADA.gov
United States Department of Justice
Civil Rights Division

AAAHC
ACCREDITATION ASSOCIATION
for AMBULATORY HEALTH CARE, INC.



ICC
INTERNATIONAL CODE COUNCIL

Joint Commission
National Quality Approval

HIPAA
Health Insurance Portability & Accountability Act

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Facility Assessment

Health care facilities and hospitals are ever changing by nature with new technology, services and regulations. A facility assessment is the evaluation of the physical space and infrastructure to offer stakeholders a roadmap that will determine how to distribute resources over time.

Your assessment can be a full facility endeavor. However it can also specific to a building system, such as mechanical, electrical and plumbing infrastructure, or an ADA accessibility review plan.

Once we define the scope to be surveyed, we agree on an easy-to-understand scoring system. The final report will highlight any found deficiencies needing updates, point at underlying costs of future updates, and provide a clear path for improvements going forward in the short and long term.

Legend

Discipline	Rating	Priority
Structural		
Exterior Envelope		
Interior Spaces		
Mechanical		
Plumbing		
Electrical Power		
Lighting		
Fire Suppression		

Ratings		Priority	
5	Optimum	1	Immediate Attention Required
4	Adequate	2	Attention Required in next 5 months
3	Fair	3	Attention Required in next two years
2	Poor	4	Attention Required in next five years
1	Unsatisfactory	5	No Attention Required

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Expertise

- Life Science Facilities – Pharmaceutical, Biotechnology, Medical Devices
- Industrial, Manufacturing and High-tech Facilities – Food Processing, Research, Testing, electronics, Data Storage
- Transportation, Maritime and Aviation – Roads, Ports, Airports
- Hospitality – Resorts, Hotels, Beach Clubs, Restaurants
- Healthcare Facilities – Hospitals, Clinics, Medical Offices
- Education – Heads Starts, Schools, Universities, Higher Learning
- Institutional – Government Public Service Buildings, Banks, Museums, Theaters
- High/Low-rise Mixed-Use, Residential and Office Buildings
- Warehouses
- Surface Parking and Structures
- Infrastructure such as potable and waste water,
- Maritime
- Cleanrooms

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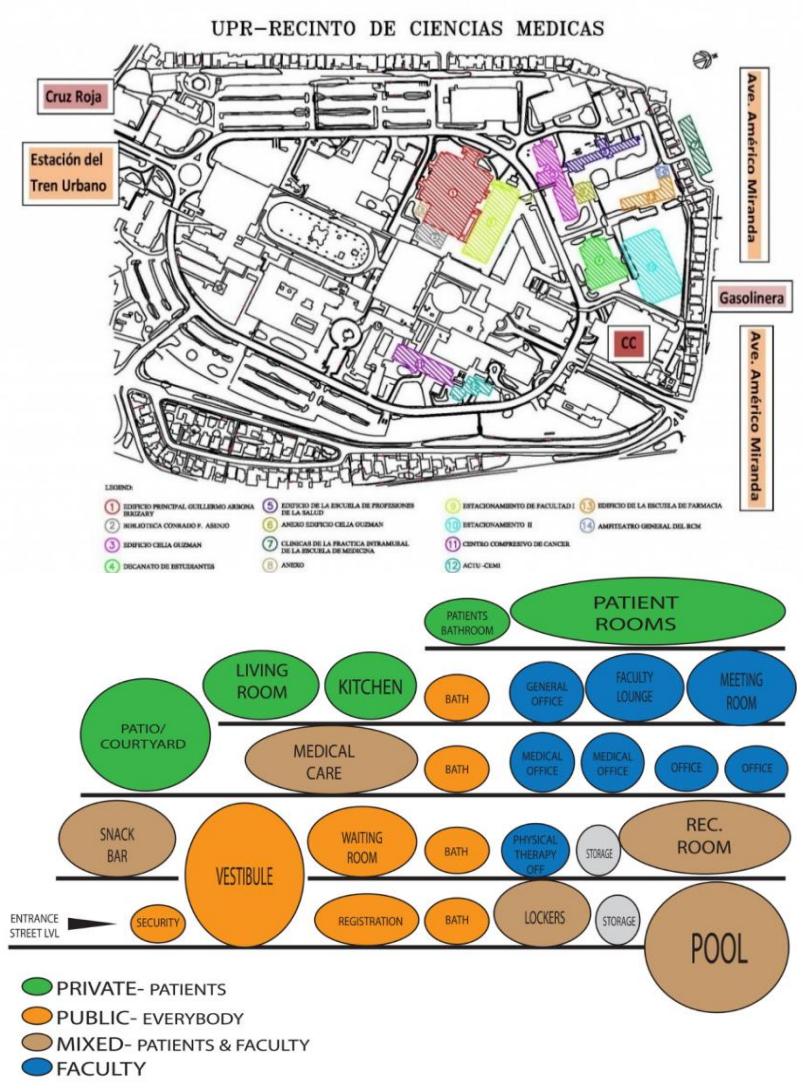
Master Planning

Let's see the 'big picture' view of your facility goals by setting out a clear and logical vision that stakeholders can understand, feel involved in and work towards.

We create a flexible, client-owned strategic development framework for the short, medium or long term. It can be easily adapted to meet changing market and adopt new value-added initiatives.

Working in close collaboration with stakeholders and users, our Master Plans take into account key issues, such as operational needs, current infrastructure, expandability, site locations, and latest code and regulation compliance. We also address evidence-based design practices, energy conservation targets and specific service processes to create solutions that are responsive to our clients' needs.



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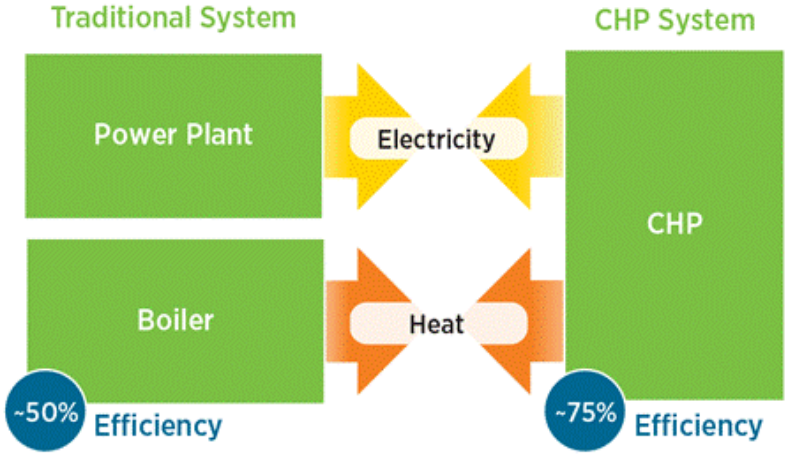
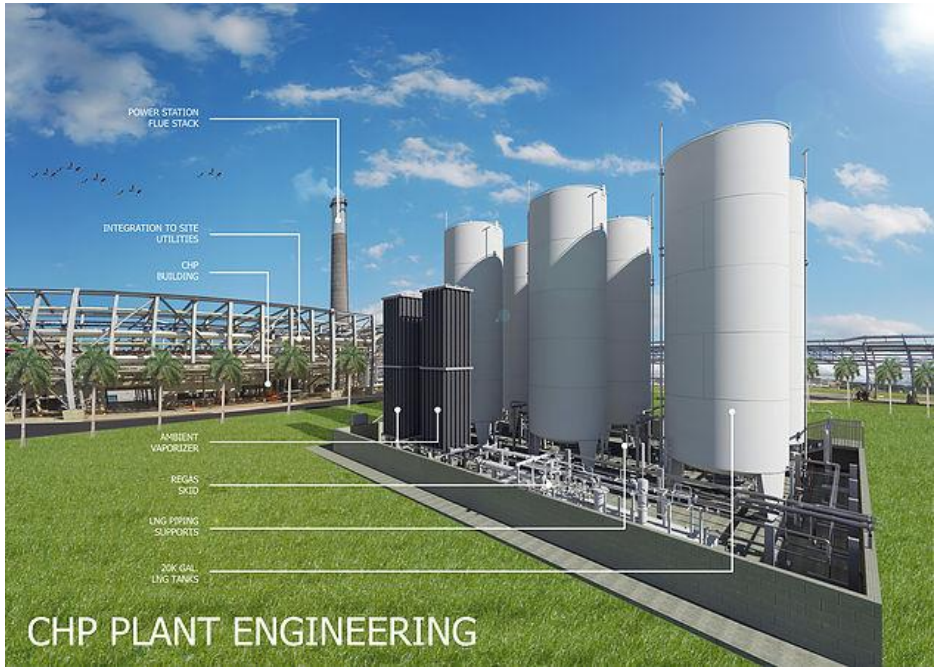
Co-Generation

- 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..





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Sample Clients

Services catered to each client and the project specific needs, right when you need them.

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Private Sector Clients

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Government Clients

United States Government Entities

Federal Drug Administration (FDA)
Federal Emergency Management Agency (FEMA)
General Services Administration (GSA)
United States Army
United States Army Corps of Engineers (USACE)
United States Coast Guard
United States Navy
Postal Service (USPS)
Veterans Administration (VA)

Puerto Rico Government Entities

Administration For The Financing Of Infrastructure (PRIFA)
Aqueduct & Sewer Authority (PRASA)
Department of Transportation & Public Works (DTPW)
Electric Power Authority (PREPA)
Government Development Bank for Puerto Rico (GDB)
Health Department (PRHD)
Highway and Transportation Authority (PRHTA)
Housing Finance Authority (PRHFA)
Industrial Development Company (PRIDCO)
Institute of Puerto Rican Culture (ICP for its initials in Spanish)
Metropolitan Bus Authority (AMA for its initials in Spanish)
Municipalities (Aguadilla, Bayamón, Caguas, Carolina, Mayagüez)
National Guard (PRNG)
Ports Authority (PRPA)
Public Buildings Authority (AEP for its initials in Spanish)
Solid Waste Authority (ADS for its initials in Spanish)

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Sample Projects

In-house engineering and architecture is an unparallel value-added services to the benefit of the projects at hand.

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Teatro Matienzo

San Juan, PR

CMA provided services of property assessment, reconditioning design, construction and project management of the "Teatro Arriví", Now known as "Teatro Matienzo".

To do this, CMA analyzed the functions and procedure systems within the office and implemented new technology to reduce time consumption and better use the space at hand.

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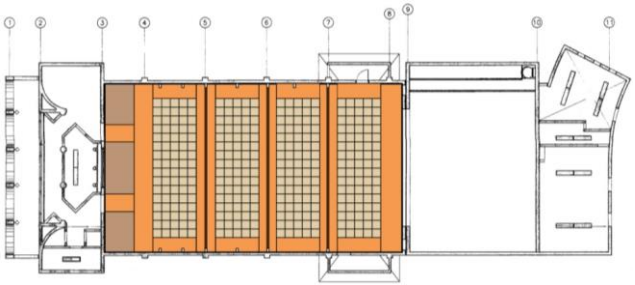
Sacred Heard University

Santurce, PR

Sacred Heart University in Puerto Rico is a catholic university of 6,100 students.

Engineering and architectural services for acoustical improvements to the existing Emilio S. Belaval Theater.



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Bioprocess Training & Development Complex

Mayaguez, PR

The Bioprocess Development and Training Complex was a joint effort between Puerto Rico's Industrial Development Company (PRIDCO), the University of Puerto Rico and the Puerto Rico Science, Technology and Research Institute Trust, to improve the Island's potential in biotechnology and bioprocess manufacturing, education and research.

Focus:

- Promote interaction between academia and industry.
- Provide the grounds for investigative communication.
- Strengthen Puerto Rico's capacity research, development, manufacturing and bioprocess engineering.

Features:

- *30,000 square feet facilities*
- *$19M investment*
- *10,000 square feet of research and development laboratories*
- *conference room*
- *lecture room*
- *training laboratory*
- *amphitheater with a capacity of 150 people*

R e s e a r c h

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Pediatrics Hospital Expansion

Puerto Rico Medical Center

The expansion to the University Pediatric Hospital consisted of a new 56,000 SF building with three levels. The total project cost was over $26.8 M. The building houses new oncology, burned victims and neurology units as well as a new emergency department, and a clinical laboratory. These specialty facilities were not available in Puerto Rico prior to the project. The project included a mass decontamination facility.

Since the new expansion was located over an old parking lot and connecting to an existing building, CMA addressed zoning concerns, existing roofing system challenges, and NFPA 101 compliance. Additional parking spaces were also provided within the Centro Medico health care campus. CMA got all operational permits including the hospital accreditation by the Joint Commission. The project was completed on August 2010.

Services

Cost estimating; Architecture; Structural, Civil, Mechanical and Electrical engineering. Services during construction and permitting.

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Chemistry Building Reconstruction

University of Puerto Rico, Mayagüez

CMA performed a full assessment of the HVAC infrastructure for the Chemistry Department building at the University of Puerto Rico. The project encompassed 214,000 SF, 4 levels, and multiple chemical laboratories with the upmost strict HVAC requirements.

Built on 1996, the goal was to reduce high humidity levels and increase comfort at the existing facility. We offered a multiple phase approach with short, medium and long term recommendations.

The HVAC reconstruction project has been approved by the Board of Directors and is currently underway.

Services

HVAC Facility Assessment; Cost estimating; Architecture; Structural, Civil, Mechanical and Electrical engineering

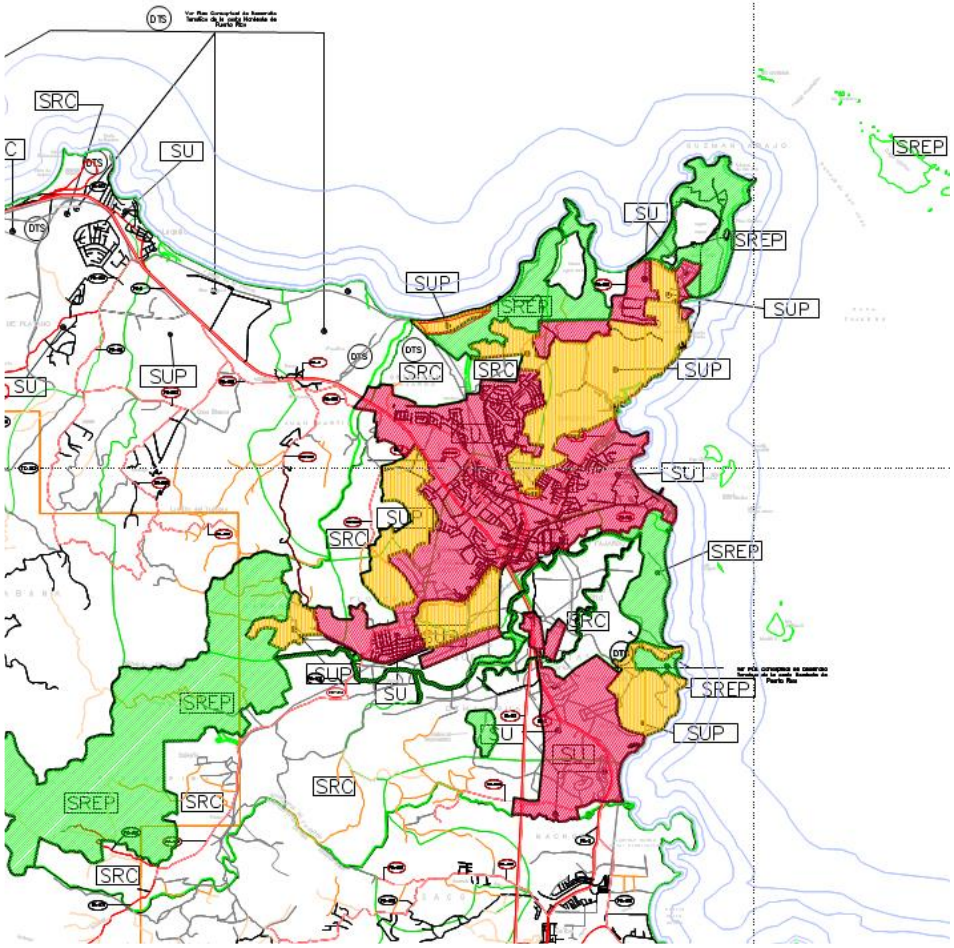
Head Start & Early Head Start

Fundación para el Desarrollo del Hogar Propio

CMA provided architecture and engineering services to assess the damages caused by Hurricane Maria to three potential Early Head Start/Head Start education facilities. These facilities will be administered by Fundación para el Desarrollo del Hogar Propio (FDHP) in Puerto Rico.

Mitigation strategies with their corresponding costs estimates were developed. In addition, we identified major code compliance deviations, and compare facilities to current Head Start Program Standards and Design Guidelines. The assessment and recovery planning of new head start facilities will be administered in accordance with the Head Start Program Performance Standards, and will address the needs of children, parents, staff and visitors.

The new facilities program will be distributed into three main areas: 1) the classroom and common use areas for children; 2) the staff areas for teachers and administrators; and 3) the service areas for the center. The entries to the center and main circulation pathways unify these main areas.



Ordinance Territorial Plans

Barceloneta, Luquillo, Fajardo & Rio Grande

Description

Coordination with the municipal administration for the preparation of maps and figures as part of the ordinance territorial plans and documents. Compilation of physical information as to appropriately qualify areas. Presentation of documents to community groups and municipal legislature as part of the preparation of the plan. Presentation of the plan to the general public in public hearings. Coordination between municipal government and the Puerto Rico Planning Board during the four different stages of the approval process.

Comprehensive/Long-Range Planning,
Municipal Finance
Land Use & Code Enforcement,

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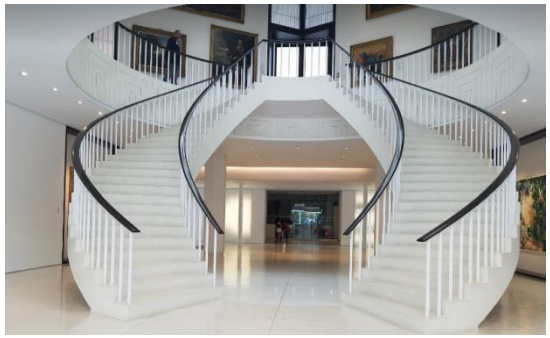

Annex Building

Museum of Art, Ponce, PR

CMA provided Construction and Project Management for this building renovation.

Services also included procurement activities of furnishings and art storage equipment.

Construction Area: 41,000 Sq. Ft.

Construction Cost: $11 Million

Contract Time: 24 months

Institutional

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El Hotel San Juan (ESJ)

Carolina, PR

CMA was architect and engineer responsible for the renovation of El San Juan, a landmark hotel since 1958. The redesign and modernization included 388 guestrooms, main public lobby, ballrooms, casino, meeting rooms, exterior public areas, restaurants, and a new gym and spa.

Also, CMA also led mechanical and electrical upgrades, which were vital to the modernization of this icon.

Services	Planning, Environmental, Permitting, Electrical, Architecture, Structure, Civil, Mechanical, Plumbing Inspection Construction Coordination
Client	PDSI and Leon, Mayer & Co.

Parque del Tercer Milenio

San Juan, Puerto Rico

The Third Millennium Park, also referred to as El Escambrón & Parque Sixto Escobar, is a public space that allows for multidisciplinary activities. Being at a beautiful ocean front location, materials selection had to consider not just the resilience needed in any public park but also a highly corrosive environment. All urban furniture such as benches, lighting poles and railings was selected to give a special identity to the park, look good and require minimal maintenance.

We also designed the bridge over the Muñoz Rivera Avenue connecting the 3rd Millennium Park with the Luis Muñoz Rivera Park. Challenges met in the planning phase included working around various historical structures.

Erosion Conditions threatening the structural integrity of the road and jeopardizing the community's safety.

PR-686 Rehabilitation

Vega Baja, PR

Description

The main purpose of this project was the reconstruction of a 300 meters segment of state road PR-686 waterfront damaged due to wave action. We took opportunity to make an impact on the community by not only solving the critical erosion problem present but as well as an opportunity to make a positive impact in the community by the creation of a public are that can serve as visual and physical areas for public enjoyment.

A total cost of $1.5M, this project reestablished the sector's roadway access and provided a new ample sidewalk for the community's enjoyment of the waterfront.

PR-143 Rehabilitation

Adjuntas, PR

Description

CMA was responsible for the evaluation and design of a retaining structure to mitigate and contain the landslide that was threatening the structural stability of the PR-143 road at Adjuntas PR. Landslide was caused by a heavy rain event and left portions of the road with out any subbase.

After the construction was completed, both vehicular and pedestrian access was reestablished, reconnecting the nearby communities and residents safely. Furthermore, additional safety measures were incorporated – guard rail - to minimize accidents downhill.

Wastewater Treatment Plant

Guánica, PR

Service: Construction of a new 1.25 MGD Biological Nutrient Removal Wastewater Treatment Plant expansion in the municipality of Guánica.

CMA: The project included permitting, design, and construction management and inspection Design services.

Status: In service since 2013

Owner: Puerto Rico Aqueduct & Sewer Authority (PRASA)

Sewerage Collection System

Guánica, PR

Description

Domestic Sewerage Collection for Ensenada and Guaypao Communities.

Construction of the Ensenada sanitary pump station to receive the sewage from the Ensenada, Salinas –Providencia, Playa Santa, and Guaypao communities at Playa Santa, Gúanica.

Installation of 8, 15, and 18 inch PVC gravity trunk sewer that runs in common trench with the 14 inch diameter force line. Installation of the 14 inch diameter PVC force main, from the Ensenada pump station to the Guánica wastewater treatment plant. Connection from the Ensenada force main to the existing Guánica wastewater treatment plant

CMA: Preconstruction phase providing design reviews, permitting logistics, bid documents preparation, field services including on-site inspection and project management under PMC team with BV Puerto Rico.

Construction Cost: $10,519,900

Status: In service since 2013

Owner: Puerto Rico Aqueduct and Sewer Authority

Emergency Backup Power

Carraizo Damn

Description

CMA was responsible for the evaluation and design of a retaining structure to mitigate and contain the landslide that was threatening the structural stability of the PR-143 road at Adjuntas PR. Landslide was caused by a heavy rain event and left portions of the road with out any subbase.

After the construction was completed, both vehicular and pedestrian access was reestablished, reconnecting the nearby communities and residents safely. Furthermore, additional safety measures were incorporated – guard rail - to minimize accidents downhill.

Oriana Solar Farm

Isabela, PR

Description

Oriana Energy LLC, a subsidiary of Sonnedix Group, in partnership with Yarotek, announced it has commenced energization of the Oriana Solar Farm, a 45 MW AC, 58 MW DC solar power plant in Isabela.

With an investment in excess of US$160 million, the construction of this renewable energy power plant created more than 300 direct jobs, mostly residents of Isabela and nearby communities.

When it started operation, the Oriana solar power plant was the largest of its kind in the Caribbean, it meets the annual electricity needs of more than 12,000 homes and offsets 95,000 tons of carbon dioxide emissions a year, equivalent to planting 50,000 trees.

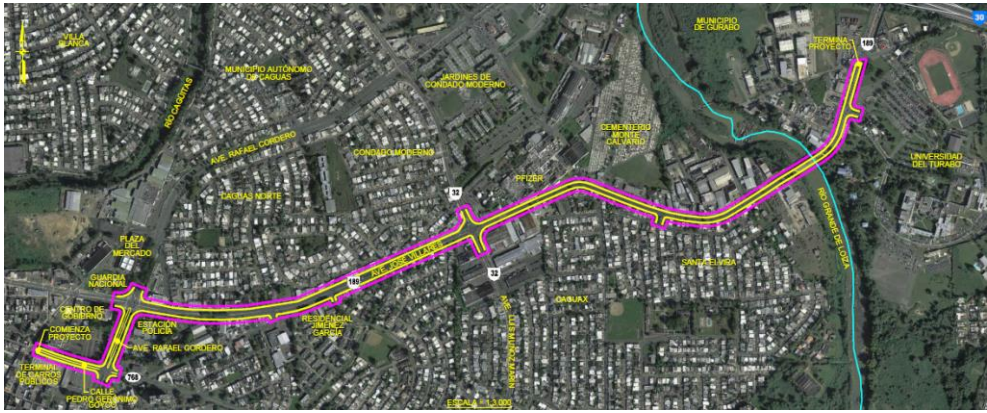
The facility is capable of generating more than 100,000 megawatt hours of clean, green electricity each year.

The Complete Street & Bike Lane

Caguas, PR

Description

CMA prepared for the Municipality of Caguas a viability evaluation for a Complete or Right-sized Street corridor at the urban center. The proposed corridor will be located at the PR-189, connecting the existing local taxi (Público) transit terminal with the university area at the East side of the municipality. The proposed strategy includes applying road diet in order to safely accommodate motor vehicle and bike lanes, as well as pedestrian traffic at the sidewalks. It is also proposed a segment with a reversible lane, as well as bike box areas at intersections. The study was fulfilled at the end of year 2012.



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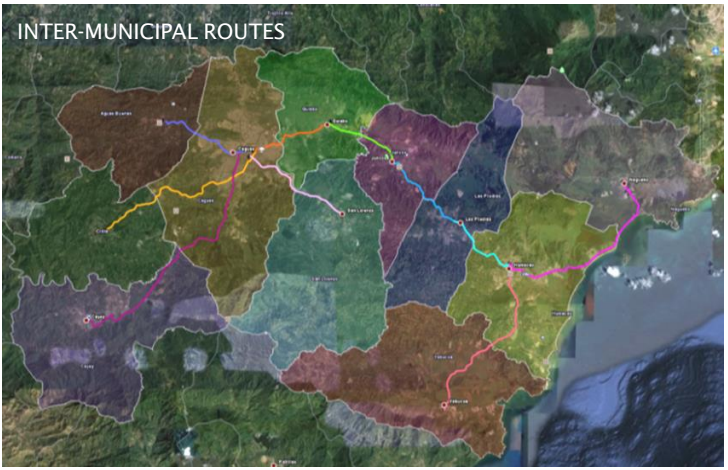
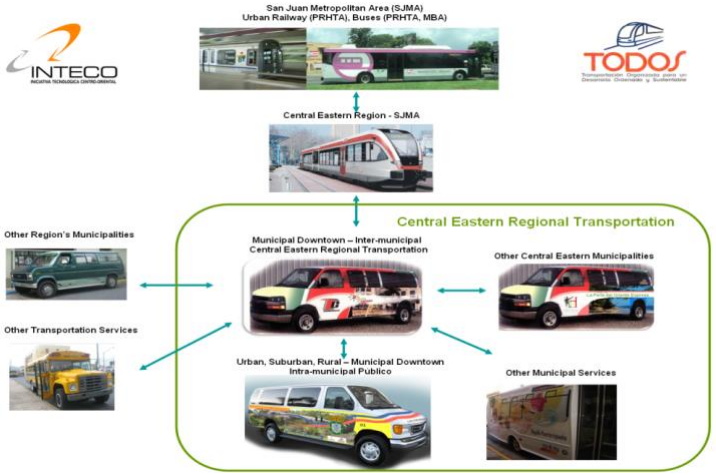




Regional Transit System Planning

Central-Eastern Region, PR

Description

The project was developed applying the following procedure: research and literature review; data collection and analysis; logit mode choice model development; analysis of alternatives through net present value; design of organization, transit routes, schedule and deployment; design of inspection forms and signage; and financial analysis. The following alternatives were considered in the study: do nothing, transit system provided by the municipal governments, and transit system provided by a partnership among public operators and municipal governments.

Regional Transit System Design

Central-Eastern Region, PR

Description

The main objective of this project is to design a reliable, effective and efficient public transportation system in the Central-Eastern Region (CER) of Puerto Rico, for the Region and for each of the eleven (11) municipalities within the Region. The project was commissioned by INTECO (Spanish acronym for Central Eastern Technological Initiative or *Iniciativa Tecnológica Centro Oriental*), and was developed in partnership.

Los Filtros Connector

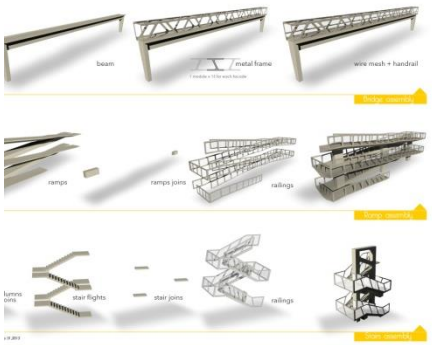
Guaynabo, PR

Description

This corridor was contemplated in the Puerto Rico Government Road Plan and the Territorial Planning Plan of the MAG. The Conector has a length of 2 kilometers and contains two (2) lanes per direction, each 3.65 meters wide, a central islet four (4) meters wide, a sowing area that varies between 1.0 and 1.5 meters width and sidewalks in some areas. This connector also has an electronic toll charging station in both directions. The construction of the Connector was developed in two (2) phases.

Approximate Cost: $ 15 million

Proposal: Improve safety with installation of pedestrian crossings, the provision of indentations and marking on the pavement and the installation of lettering and lighting suitable for traffic and pedestrians.



Los Prados Pedestrian Bridge

Trujillo Alto, PR

Description

CMA developed a conceptual design for a pedestrian bridge spanning over the Trujillo Alto Highway, one of the most congested and harsh roadways in the metropolitan area.

The idea behind the concept was to provide a safe passageway for pedestrians on an accelerated building construction schedule, to minimize traffic interruptions on the roadway.

Construction was envisioned as a fast pace-puzzle piece installation, taking advantage of prefabricated elements that would be put together in-site over a three-day construction schedule.

Recognitions

Excellence through value services and commitment to our clients

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PR Realtor Association Award

Project

Los Padros Development

Description

CMA was awarded a recognition by the PR Realtor Association in the category of Environmentally Sustainable Development Project.

CMA, as the lead architectural and engineering firm, provided a full range of services from environmental, planning and land development work to the site and off-site infrastructure.

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US Green Building Council: Gold

Project

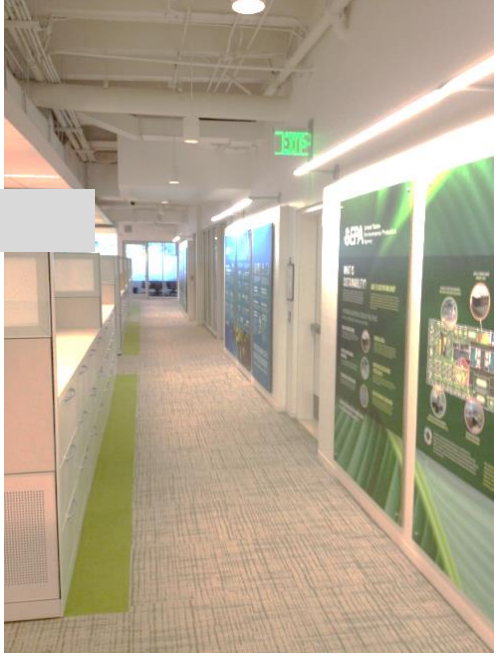
Environmental Protection Agency

City View Plaza, Guaynabo, PR

Description

EPA is a LEED Gold project.
We developed design development drawings and construction documents, LEED certification process and services during construction.

We lead the materials selection and engineering systems definition to achieve a Gold certification within a limited budget. Tenant improvements extended beyond the leased space boundaries to address certain LEED points.



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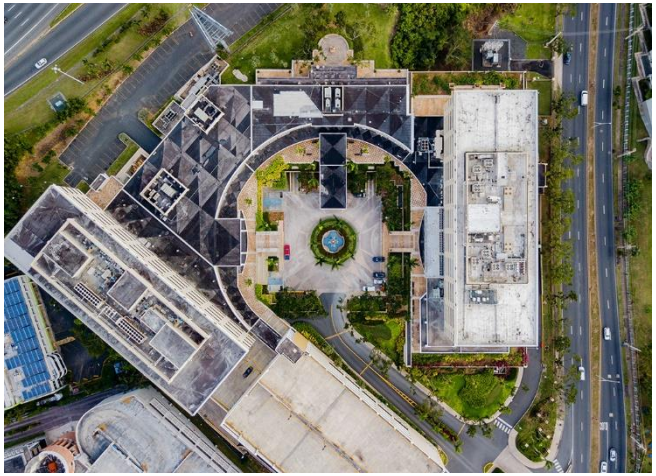

PR College of Engineers Award

Project

City View Plaza Office Complex

Guaynabo, PR

Description

CMA was awarded a recognition from the College of Engineers and Surveyors of PR (CIAPR) for Outstanding Civil Engineering Project for the design of City view Plaza Office Complex.

CMA has been the principal architectural and engineering firm of City View Plaza, a mixed use office and commercial project.

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PR College of Engineers Award

Project

San Antonio Bridge

San Juan, PR

Description

CMA was awarded a recognition by the College of Engineers and Surveyors of PR (CIAPR) for Outstanding Civil Engineering Project for the design of the San Antonio Bridge.

CMA interacted closely with PRHTA's staff during the planning, design and construction process. Special attention was given to the finishing details, providing balconies and luminaries in harmony with the environment and natural resources around the area.

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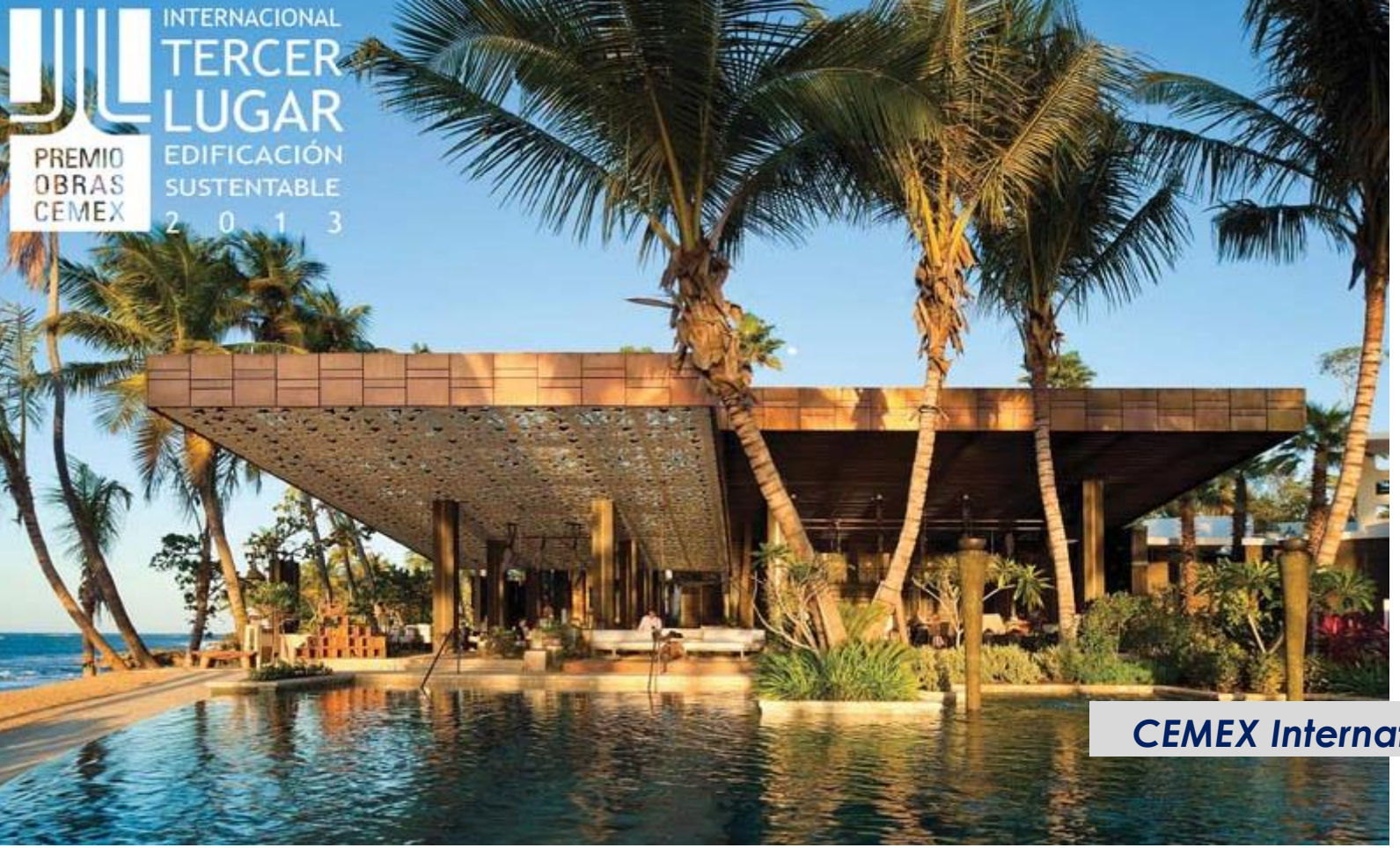

CEMEX International Award

Project

Ritz Carlton Reserve

Dorado, PR

Description

CMA was part of the team that design the facilitates and won third place at CEMEX International competition in the sustainability category.

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Outstanding Project Award

Project

Honeywell Facilities

Moca, PR

Description

The Honeywell Aerospace Environmental Testing Laboratory project in Moca, PR received an award for Outstanding Mechanical Engineering during the Puerto Rico College of Engineers and Land Surveyors awards.

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Outstanding Project Award

Project

Paseo La Real Marina

Aguadilla, PR

Description

The Phase 1 of Paseo de la Real Marina was recognized as an Outstanding Project in Environmental Engineering by the College of Engineers and Land Surveyors of Puerto Rico.

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