



MGA SERVICES **GUIDE**





Pacific Coast Terminals Shiploader, British Columbia, Canada



Antucoya Conveyor, Chile



American Dream Meadowlands, New Jersey, USA



Bloom Lake Stacker Conveyor, Quebec, Canada

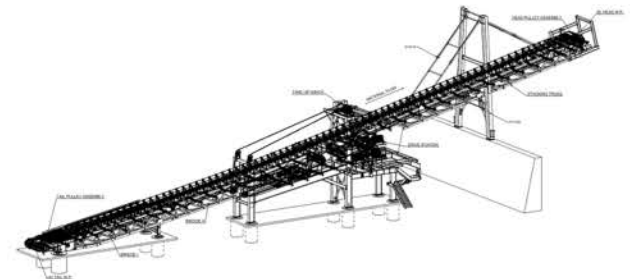
The Company

MGA Engineering is a global leader in designing structural and mechanical systems in the infrastructure, building (commercial and industrial), mining, energy, and marine industries. Founded in 1996, MGA now staffs 65 highly experienced engineers, providing an exceptional level of technical expertise and innovative engineering solutions to commercial and industrial clients.

Using state of the art design and computing tools, MGA completes work compliant with North American and European standards. From initial project conception via Design Basis Memoranda, through Front End Engineering and Design (FEED) studies to detailed design of equipment, buildings, and material storage structures with the necessary foundation systems, MGA's team meets the design needs of the industry.

The Roles

MGA Engineering plays a vital role throughout the entire lifecycle of a project, from concept and feasibility studies to engineering/design, fabrication, construction oversight, and post-construction support. As the Engineer-of-Record, MGA's mandate is customized to meet the specific needs of each client. Our team can serve as designers, compliance consultants, simulation analysts, construction planners, project or program managers, and more. This flexibility allows us to deploy our capabilities across various engagements, including design, procurement, engineering & procurement & construction management (EPCM), engineering & procurement & construction (EPC), design-build, and subject matter experts, ensuring comprehensive support and successful project outcomes.





American Dream Water Park, New Jersey, USA

A Global Footprint

MGA's headquarters is situated in Calgary, Canada, overseeing corporate, project management, financial, and design functions. Additionally, a significant design office is located in Cairo, Egypt, serving as the operational hub for projects in Europe and Asia. MGA also maintains several smaller satellite offices across Canada and the United States (British Columbia, Quebec, Florida, and New Jersey), as well as internationally, in Mexico, Brazil, and Ecuador. Our extensive footprint of past projects and ongoing global presence underscores our commitment to delivering exceptional engineering solutions worldwide.



Turnkey Solutions

MGA not only talks the design talk but walks the equipment walk. With over two decades of experience, our engineers have earned a global reputation as experts in delivering complex structural and mechanical systems. Through MGA's Asset Group, we provide comprehensive turnkey solutions to Oil Sands operators, port authorities, and mine owners. Our group oversees all aspects of an asset's lifecycle, from concept and engineering to procurement, logistics, fabrication, modularization, construction, start-up, and operational ROI validation, along with field support. At MGA, our delivery philosophy prioritizes investments, ensuring that all project decisions are aimed at maximizing ROI throughout the economic life of the operating asset.



Standard General-Acheson Rail Un-Loading Steel Bridge, Alberta, Canada



Aurora 2 SWQR, Alberta, Canada

The Canadian Oil Sands

MGA Engineering boasts unparalleled expertise in designing material handling systems for the Canadian Oil Sands. With over two decades of experience, our leadership has contributed to the design of nearly every major system currently in operation. This extensive involvement has provided invaluable insights and lessons learned, setting MGA Engineering apart from every in terms of scale, depth, and value.



Aurora 2 SWQR, Alberta, Canada



ExxonMobil Emergency Dump Pond, AB

Bulk Material Handling Legacy

MGA's core expertise is centered around bulk material handling installations, which are integral components in the mining, marine ports, and Oil Sands industries. These installations encompass a wide range of equipment and systems designed for the efficient handling and transportation of bulk materials such as ores, coal, aggregates, and more. Our team at MGA possesses extensive knowledge and experience in designing, engineering, and implementing these systems to meet the unique requirements and challenges of each industry.



ILO Ship-Unloader, Peru



Ridley Terminal Stacker Reclaimer, BC, Canada



Mega-Project Capability

MGA established itself as a structural engineering powerhouse through its pivotal role in the American Dream Meadowlands project from 2013 to 2020. Situated just minutes from New York City, this iconic shopping and entertainment complex boasts over 500 stores and restaurants, as well as groundbreaking attractions including the nation's first indoor ski hill, an expansive amusement park, an NHL regulation-sized indoor rink, and the largest indoor water park in the country.

During this project, MGA took on the design and engineering of the four most intricate buildings: The Water Park, the Amusement Park, the Core Building, and the Connector Building. Our involvement spanned all phases, from conceptual design to detailed engineering, modularization studies, and planning. We provided oversight during fabrication, developed erection plans, on-site construction support, and ensured seamless tenant fit-out.



The Applications

Materials Handling (Land & Marine)

- Conveyor systems
- Ship loaders & unloaders (static)
- Ship loaders & unloaders (rail-mounted)
- Bucket wheel stacker-reclaimers
- Surge bins, chutes and hoppers
- Tanks, vessels and silos
- Loading & unloading facilities
- Bulk gravel facilities
- Crushing plants
- Feeders

Oilsands and Mining

- Crushing plants & apron feeders
- Slurry preparation plants
- Primary separation cells
- Surge facilities and pump boxes
- Rotary breakers
- Double roll crushers
- Tank farms and pressure vessels
- Ore processing systems
- Mobile sizing stations
- Equipment erection

Commercial Buildings

- Shopping centers
- Entertainment complexes
- Recreational facilities
- Building & construction technologies
- Code compliance verification
- Complex steel beams
- Glass structures
- Parkades
- Modularization

Bulk Materials

- Copper and gold concentrates
- Coal and petroleum coke
- Sulphur
- Potash
- Grain
- Gravel and crushed stone
- Iron ore
- Overburden

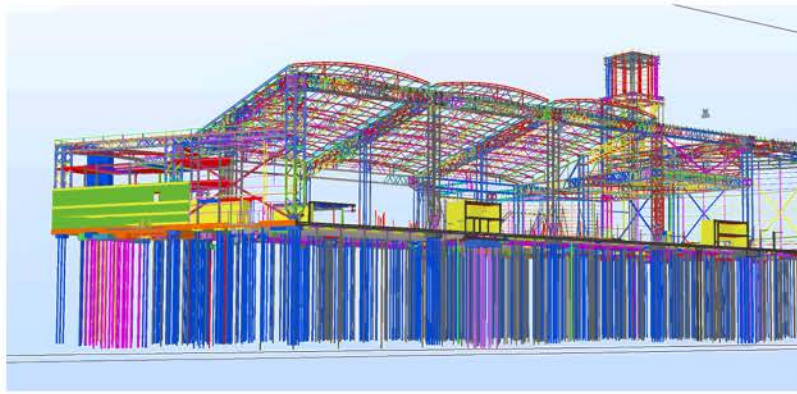
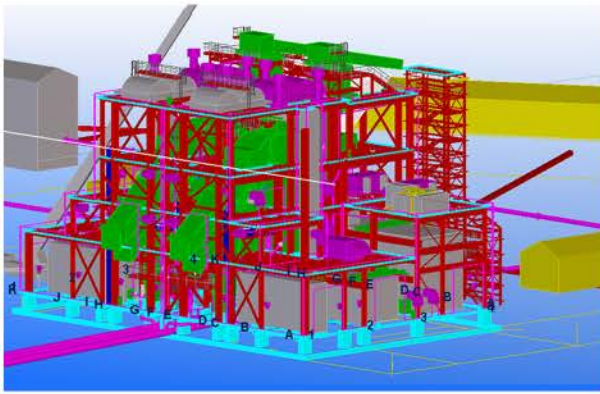
Oil and Gas

- Piping and pipe racks
- Tanks and tank farms
- Pressure vessels
- Hydrogen plants
- Sulphur pouring towers
- Heat recovery systems
- Civil works and site preparation
- Steel structures
- Packaged equipment (analysis)
- Equipment erection

Infrastructure

- Port facilities
- Airport facilities
- Foundations (buildings)
- Foundations (equipment)
- Rail and truck transfer facilities
- Grain handling facilities
- Desalination plants
- Blast resistant structures





The Experience

Structural Engineering

- Finite Element Analysis (FEA)
- Design for extreme conditions
- Dynamic analysis
- Design of plate structures
- Stability studies
- Large-span structures
- High and low temperature design
- Metal fatigue assessment
- Welding
- Special connections

Mechanical Engineering

- Machine design
- Process plant pipe stress analysis
- ASME Section VIII Divisions 1 and 2 pressure vessels
- API 620/650 storage tanks
- Piping design and equipment layout
- API 579 fit-for-purpose analyses
- TC44 / CSA B626 portable tank design
- Mining equipment and systems
- Dynamic loading

Building Engineering

- Building layouts
- Foundations, piles, concrete and masonry
- Steel superstructures
- Static and mobile roofs
- Wall cladding, partitions and facade
- Deep underground utilities
- Piping, HVAC and electrical layouts
- Civil infrastructures
- Vibration mitigation systems
- Fire resistance analysis
- Erection studies

Asset Development

- Concept and feasibility studies
- DBM and FEED
- Modularization studies
- Detailed design
- Code compliance
- Standard development
- Estimate development
- Procurement and logistics
- Construction oversight
- Project management



OPP2 Head Truss, Alberta, Canada



American Dream Water Park, New Jersey, USA



Kearl Lake Slurry Preparation Plant, Alberta, Canada

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