

WWW.SAXUM.US



SAXUM
Engineered Solutions



CEMENT QUALIFICATIONS

PROJECTS & EXPERIENCE

MISSION & VISION

SAXUM is a multi-disciplinary engineering and project management services enterprise specializing in the mineral processing, oil and gas, and infrastructure industries. It includes 4 (four) companies in the USA, Brazil, Australia and Argentina, and 6 (six) offices, in Tucuman and Buenos Aires, Argentina; Irving, TX, USA; Belo Horizonte, MG, Brazil; and Perth, WA, Australia.

MISSION

Provide high-quality, accurate and cost-effective engineering and project/construction management services to the industry through the continuous improvement of our professionals until excellence is achieved.

VISION

To enhance our clients' bottom-line results through efficient engineered solutions and management, and accurate cost estimates and planning for their industrial projects, everytime, everywhere.



ENGINEERING AND EPCM CAPABILITIES ALL AROUND THE WORLD



ARGENTINA
TUCUMAN
BUENOS AIRES

BRAZIL
BELO HORIZONTE

UNITED STATES
DALLAS, TX

AUSTRALIA
PERTH



SAXUM in its continuous improvement process has adapted all the procedures to the highest international requirements with the ISO 9001:2015 quality certification.

SERVICES

We differentiate ourselves from other engineering companies by offering strong expertise and knowledge in Engineering, Procurement, and Construction, Management (EPCM) services for mineral processing industries (cement, lime, mining), as well as to the manufacturing and Agroindustries.

Our services are characterized by high level project management and engineering teams which allow our clients to rely on our way to execute their projects with a focus on delivering either refurbished or new facilities within realistic schedules and budgets as well as optimal technical solutions.

AUDITING

CONSULTING SERVICES

FEASIBILITY STUDIES

EPCM SERVICES

PLANNING AND PROJECT CONTROL

PROCUREMENT

LOGISTIC & EXPEDITING

COMMISSIONING

SITE SUPERVISION

MULTIDISCIPLINARY ENGINEERING

CAPEX/OPEX EVALUATIONS

CONCEPTUAL, BASIC & DETAILED DESIGNS

TRADE OFF STUDIES



CLIENTS

NORTH AMERICA

VCNA Charlevoix	Martin Marietta	CalPortland
St Marys Cement Inc	FLSmidth	ARGOS
Cementos Fortaleza.	BUZZI UNICEM	YBP
CEMEX	GCC	CarbonBioCapture
Drake Cement	Votorantim Metals NA Inc.	Voestalpine Metals
Nelson Brothers	TKS Group	Ozinga
HOLCIM	HEIDELBERG CEMENT	Calucem
Lattimore Materials Corp.	GIANT CEMENT	Bedeschi
Panamerican Silver	RECON	Fluor Corp
Fortuna Silver Mines Ltd.	Intrepid Mines Ltd.	SNC Lavalin
SINTEK	Elementia S.A.B. de C.V.	Cruz Azul
Barrick Gold Corp	Titan Cement	
Orvana Minerals Corp.	Beumer	

EUROPE

LAFARGE - HOLCIM	CEMEX
Italcementi	Thyssenkrupp AG
CIMPOR	FL Smidth
Cementos Molins	Bilfinger
Fives FCB	Cementos Portland
Hochtief AG	Valderribas
Siemens AG	Calucem



DOMINICAN REPUBLIC

Grupo Estrella

SOUTH AMERICA

► See next page

MIDDLE EAST & AFRICA

Bilfinger & Berger
 QN Cement Company
 Intercement
 VOTORANTIM
 Sotacib, Grupo Molins
 Kuwait Cement Co.

ASIA

LAFARGE-HOLCIM
 Intercement
 SINOMA
 Taiwan HS Rail Corp.
 Bilfinger

AUSTRALIA

Ernest Henry Mining
 (GlencoreXstrata)
 Adbri Cement
 Cockburn Cement Ltd
 BGC Cement
 Vinindex

CLIENTS

COLOMBIA

Grupo ARGOS	Cerro Matoso
CEMEX	BHP
Ultracem	

BOLIVIA

CEMEB	Liongold
SOBOCE	Itacamba
Votorantim	

BRAZIL

CSN	Zamil Steel
Camargo Corrêa	Itambé
Holcim	CIBAHIA
Votorantim	Atec Greco
Cimentos Liz	Votorantim Metais
Cimpor	Monsanto
Intercement	Vale do Rio Doce
Cimentos da Bahia	Rio Tinto
ICON	Fives FCB
Cemengal	Klavin

ECUADOR

FCT Internacional
Cemento Chimborazo
EPCE
UCEM

PERU

Anglo American	ARPL
UNACEM	Glencore
Cementos Yura	Buenaventura
Cementos Otorongo	Minera IRL
Cemento Pacasmayo	Southern Peru Copper Corp.
Panamerican Silver	
Grupo Gloria	Hochschild Mining

URUGUAY

Cementos del Plata
Cementos Artigas

CHILE

Cementos Bio Bio	Barrick Gold
Minera Cal Norte	Southamerican Gold
Cemento Polpaico	Anglo American
Procter & Gamble	Minera Esperanza
GlencoreXstrata	Teck Chile

ARGENTINA

SINOMA	Yamana Gold
Loma Negra	AngloGold Ashanti
Holcim	Minera IRL
Cementos Avellaneda	Intrepid Mines
UCEM	Goldrock Resources
ULTRACEM	Eramet Ingénierie
Grupo Cartellone	FMC Lithium
Intercement	Goldcorp
FLSmith	Exeter Resources
Barrick Gold	Panamerican Silver
Glencore	Silver Standard
Molinos Rio de la Plata	Minera Aguilar
Aceitera Gral Deheza	Lithium Americas Corp.
Monsanto	Hochschild Mining
Pluspetrol	Aluar
rocter & Gamble	Buenaventura
Minera Alumbrera	YMAD
Galaxy Lithium	LIEX
AbraSilver	Imeris
Orocobre	Newmont
^P Central Puertos	Arkadium
Vista Oil	Argosy Minerals
Hanaq Group	Lundin Mining Corp
Minera Santa Cruz	Mansfield Minerals
Zijin Mining	Orvana Minerals
MARA	EXAR

EPCM SERVICES

PROJECT MANAGEMENT

SAXUM provides Professional Project Management services to our clients, based on PMI best practices and clear procedures, highly experienced personnel, and clear understanding of our clients needs and expectations. Our Project Managers act as the primary contact, as well as the overall responsible for coordination of all project activities, both in office and in the field.



SAXUM SUCCESSFULL PROJECT MANAGEMENT IN BASED ON

PRECISE PROJECT UNDERSTANDING AND SCOPE INFORMATION

TRACKING PERFORMANCE AND TAKING NECESSARY ACTIONS

COMPLETE, TIMELY AND ACCURATE INFORMATION

CLEAR AND OPEN COMMUNICATION

TEAM COMMITTED TO THE PROJECT AND CLIENT OBJECTIVES

SAXUM's Project Management processes have been designed and improved through the years, and based on lessons learned on previous projects to ensure successful implementation and execution of the contracted scope of work.

SAXUM manages projects focused on meeting the client's goals for Cost, Schedule, Quality and Safety. Conscious of risks and showing the ability to respond to client needs with efficient solutions.

Client's needs set the Vision that will be the basis for SAXUM's Project Managers to coordinate and lead all parties involved in the projects, to follow the Project Execution Plan through Project Initiation, Planning, Execution, Monitoring and Closure.

EPCM SERVICES

CONSTRUCTION MANAGEMENT

SAXUM's Construction Management is the core of the company's services. It involves the direction, regulation and supervision of a project from early development to its completion and is responsible for planning work schedules, coordinating the most efficient method and construction strategies and budgeting. The team is composed of multidisciplinary professionals that allow us to administer the different disciplines, such as: Civil/Structural, Mechanical, Electrical and Instrumentation, Safety, Contracts, Administration, Commissioning, etc.



PROJECT SUCCESS

SAXUM's Construction Management team knows that Project Success is all about organization, planning and follow-up work to achieve the results that comply with client requirements and design criterias. These are all challenging tasks, particularly in the mining industry at high altitudes, where we find sensitive environments that include special local communities and cultures, harsh weather, and strong technical and logistics difficulties.

RESOURCES

To achieve a successful project under these tough conditions, SAXUM has all the necessary resources to be strongly focused in safety and environmental control, strong planning in advance (FEL – PDRI), excellent Project Control, field supervision and administration management. The key word for SAXUM, as EPCM and project integrator, is Team Work, that include all project's stakeholders: client, EPCM, contractors, consultants, vendors, local authorities and communities, unions, etc.

EPCM SERVICES

PROJECT CONTROL

SAXUM manages all aspects of the construction process, from the initial design phase to the end. Throughout, we maintain constant communication between all parties, while satisfying the interests and needs of the owner. SAXUM's Project Control Teams offer their clients a wide range of project management services. The services are adapted to each project to meet the needs and wishes of the owner. The following list represents a general description of our project management services:



PROGRAMMING

Project Control has extensive experience in selecting and directing programming consultants. This experience in working with programmers will insure that the owner's facility needs are clearly determined and defined.

REPORTING

Project Control prepares written monthly status reports for distribution to the appropriate parties. The reports address the current status of each individual project. Project Control will attend meetings, then report to the owner and answer questions.

SCHEDULING

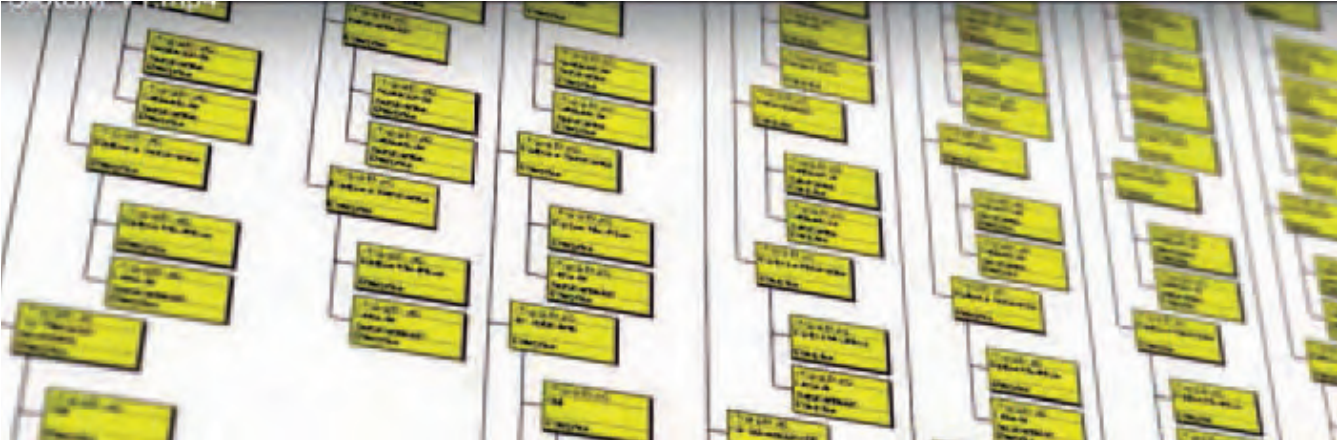
Our experience in managing the entire process, not just any segment, allows us to prepare reliable project schedules for both the design and construction phases early in the project development stage. These schedules are monitored and updated periodically.

MONITORING

To finish a project on time, within budget and with the desired quality, professional monitoring on a daily basis is necessary. Project Control continuously oversees all aspects of a project, anticipates problem areas and assists in resolving problems and conflicts that may arise.

EPCM SERVICES

PROJECT CONTROL



EARNED VALUE

Project Control has saved owners millions of dollars in construction costs. We work constantly with the owner and design team during the completion of documents to review savings opportunities while the project design is being developed. With the agreement of the owner, these opportunities are available to be implemented prior to bidding. By working with the contractor, additional cost savings options can be developed during construction. SAXUM uses the Earned Value Management System Technique.

CONTRACTING

Project Control has prepared and negotiated hundreds of contracts for owners on over 100 projects with an aggregate value of over millions dollars. Our contracts have been developed from the owner's perspective for the benefit of the project.

CONSULTANT SELECTION

Project Control assists the owner in selecting the most qualified consultants for various projects by preparing requests for proposals, evaluating the proposals and making recommendations to the owner. Following this process, Project Control conducts interviews with the firms. With Project Control's proven and thorough techniques for consultant selection, the owner is able to make the most appropriate consultant selection for the project.

CLOSE OUT

During final stages of project completion, Project Control closely monitors the activities of the contractor to make certain that punch list items are promptly completed. During the warranty period, Project Control continues to serve as the owner's advocate to make certain that any warranty work is expeditiously completed.

EPCM SERVICES

PROCUREMENT

SAXUM's team of multidisciplinary professionals has extensive experience in procurement services supported by our first class engineering team which covers all technical disciplines. Our procurement services are based on proven procedures and cover a wide range of activities, from the preparation of bidder lists and contractual terms, to expediting, logistics and QA/QC.



SUPPLY CHAIN ACTIVITIES

- HIGHLY EXPERIENCED PROFESSIONALS
- PURCHASING & ACQUISITIONS
- VENDOR DEVELOPMENT & AUDITS
- CONSULTING SERVICES
- PROCESSES AND PROCEDURES
- INTERNATIONAL IMPORTS & EXPORTS
- CUSTOMS CLEARANCE CONSULTING SERVICES
- LOGISTICS - DOMESTIC & INTERNATIONAL
- CONTRACTING & OUTSOURCING
- CONTRACT MANAGEMENT & ADMINISTRATION
- COSTS AND BUDGETING PROJECTS
- MATERIALS MANAGEMENT
- KPI'S

SAXUM's procurement team provides our client an integral and detailed service to assure the fulfillment of projects objectives regarding quality, cost and schedule. Our team has proven ability to complete the acquisition of all items and close all contracts of highly complex industrial projects within short time-frames, and in the framework of project budget and quality.

ENGINEERING

WE OFFER KEY DISCIPLINES FOR PLANT DESIGN



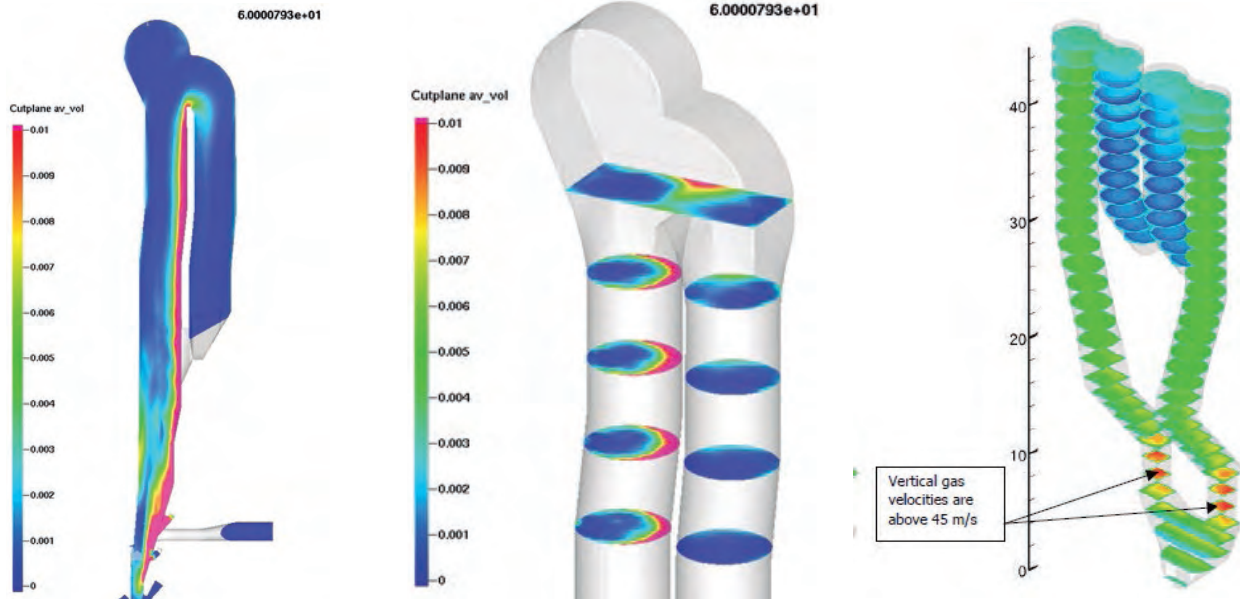
PROCESS ENGINEERING FOR THE CEMENT & LIME INDUSTRIES

MECHANICAL ENGINEERING (PLANT DESIGN, PIPING, PROCESS GAS HANDLING, ENVIRONMENTAL CONTROLS, NUISANCE DUST COLLECTION AND MATERIALS HANDLING, CRUSHING AND GRINDING SYSTEMS)

CIVIL AND STRUCTURAL ENGINEERING

ELECTRICAL, INSTRUMENTATION & CONTROL ENGINEERING

CFD FOR ALTERNATIVE FUELS ASSESSMENT



Computational Fluid Dynamics Analysis (CFD) are performed at SAXUM at the highest level of quality, in the following industrial problems:

CO-PROCESSING STUDIES FOR THE CEMENT INDUSTRY

In this case, the main application is the evaluation of the efficiency of using alternative fuels in the pyro-process area of clinker production plants. The goal is to determine the optimal injection point of the alternative fuel in the pre-calciner and the ratio of the alternative fuel to be used.

SOILS SLOPE STABILITY ANALYSIS FOR THE MINING INDUSTRY

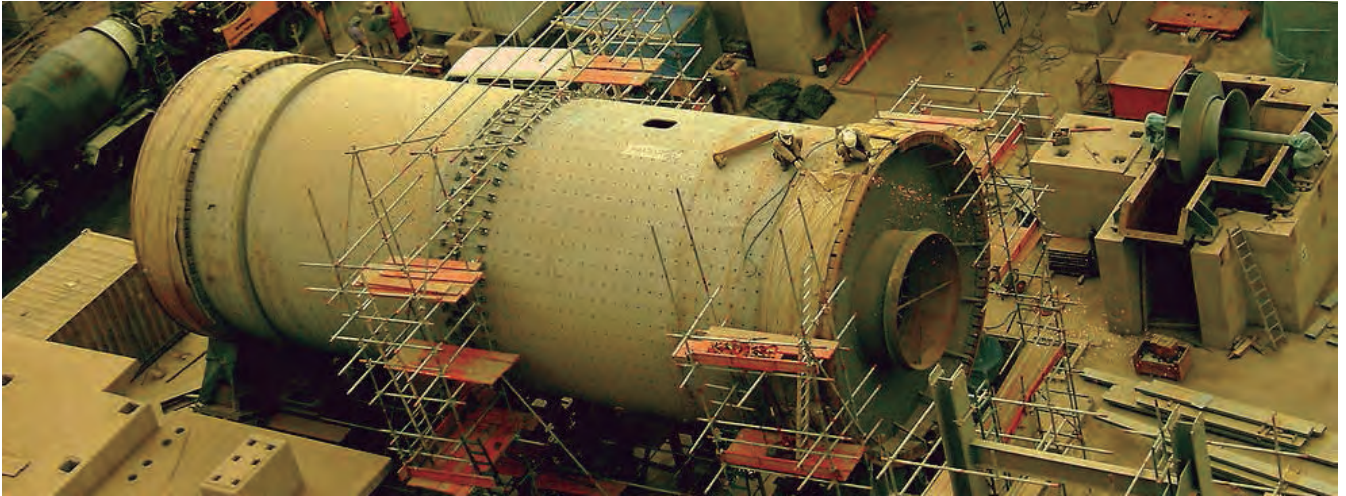
CFD analysis with fluid-solid interaction is considered for the evaluation of infiltration lines in porous media like soils in the slopes of tailing dams and their consequences in the overall slope stability.

STRESS ANALYSIS IN PIPING SYSTEMS

CFD analysis with fluid-solid interaction is also used by SAXUM to evaluate resulting stress distributions in piping systems under consideration of the real hydraulic properties of the fluid, its pressure, and the temperature conditions. These analyses give rise to the selection of the optimal designs of piping systems in industrial applications.

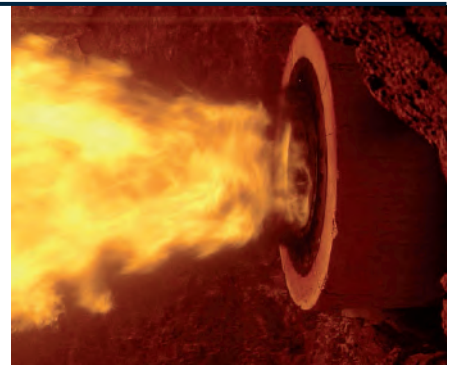
ENGINEERING

PROCESS ENGINEERING FOR THE CEMENT INDUSTRY



PROCESS OPTIMIZATION

- Solution of chronic problems
- Performance of mass and heat balances
- Improvement of equipment performance
- Identification of bottlenecks and opportunities for improvement.
- Comparison with “World Class” ratios
- Recommendations for changes to the process
- Chemical and mechanical process engineering. Mass and Heat balances.



“IN SITU” IMPROVEMENTS

- Operational troubleshooting in a practical way
- Process calculations
- Product improvements studies
- Alternative fuels and materials optimization
- Commissioning

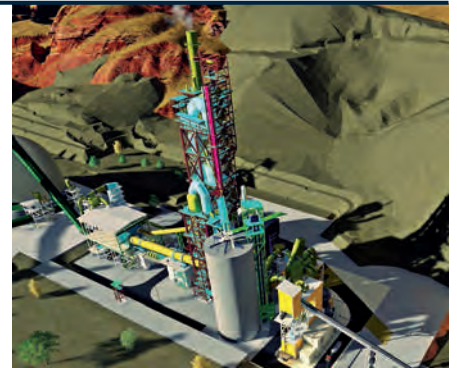


ENGINEERING

PROCESS ENGINEERING FOR THE CEMENT INDUSTRY

BENCHMARKING

- Key Performance Indicators (KPIs) tested by the world's largest cement producers.
- Databook with clear and standardized definitions
- Comparisons with “World Class” operations
- Base to implement continuous improvement systems.



FEASIBILITY STUDIES

- Best technology recommendation
- CapEx and OpEx estimates
- Technical-economic evaluation
- Use of existing equipment
- Facilities upgrading



TRAINING & PROGRAMS

- Basic program of introduction to the cement industry (modular)
- Advanced tailored made programs



ENGINEERING

MECHANICAL ENGINEERING & PLANT DESIGN



SYSTEMS INTEGRATION WITH MULTIPLE VENDORS

PLANT LAYOUTS

GENERAL ARRANGEMENTS

EQUIPMENT TECHNICAL EVALUATIONS

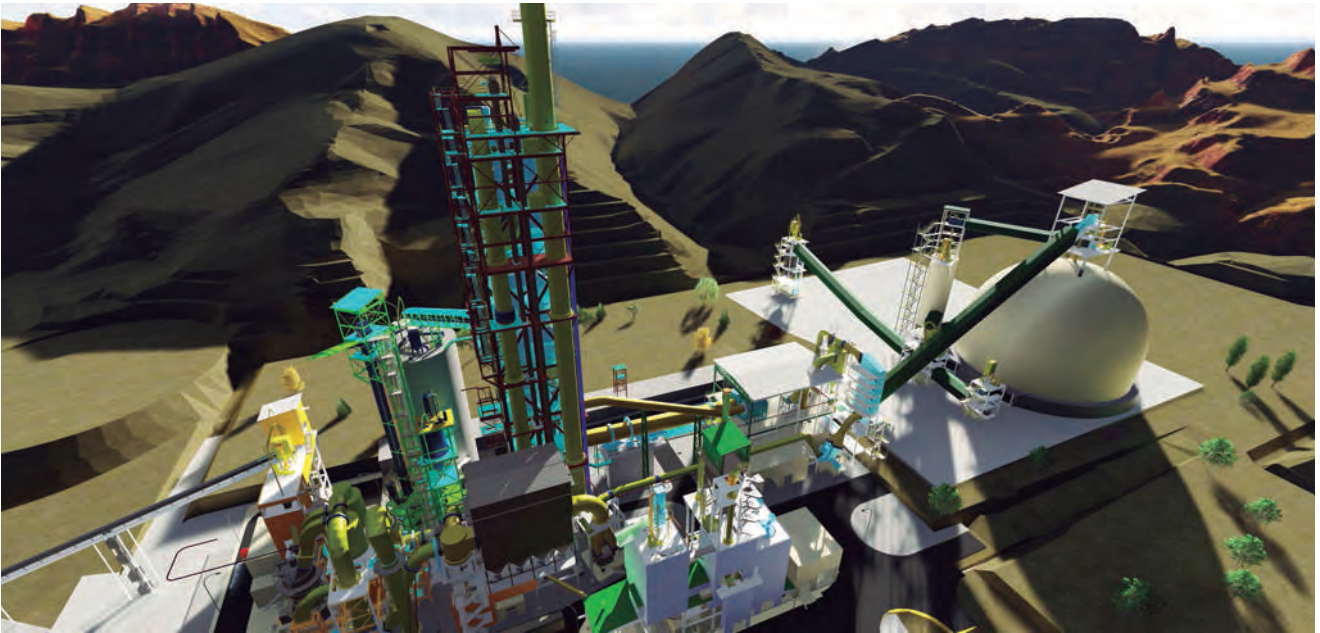
EQUIPMENT SIZING AND CAPACITY DETERMINATION

EQUIPMENT AND INSTALLATION SPECIFICATIONS

DUCTWORKS

ENGINEERING DESIGN: PIPING SYSTEMS - MATERIAL HANDLING SYSTEMS
PROCESS EQUIPMENT LAYOUTS

CIVIL & STRUCTURAL ENGINEERING



STRUCTURAL ANALYSIS & DESIGNS (INCLUDING HIGH SEISMIC & HURRICANE ZONES) FOR INDUSTRIAL PLANTS

EVALUATION AND IMPLEMENTATION OF GEOTECHNICAL REPORTS

STRUCTURAL DESIGN BASED ON VIBRATION MITIGATION

DYNAMIC FOUNDATION ANALYSIS

STRUCTURAL RELIABILITY STUDIES

STRUCTURAL PATHOLOGY STUDIES

DESIGN OF REINFORCED CONCRETE AND STEEL STRUCTURES

CONCRETE AND METAL DOMES

CONCRETE SILOS AND BUNKERS

STEEL BINS AND HOPPERS

TUNNELS AND UNDERGROUND STRUCTURES

ELECTRICAL ENGINEERING



POWER DISTRIBUTION SYSTEMS

INSTRUMENTATION AND CONTROLS

HMI INTERFACE COORDINATION

PLC PROGRAMMING

MOTORS (MEDIUM VOLTAGE AND LOW VOLTAGE)

MEDIUM VOLTAGE STARTERS AND BREAKERS

TRANSFORMERS

MOTOR CONTROL CENTERS

SHORT CIRCUIT ANALYSIS

POWER STUDIES

AUTOMATION & CONTROL ENGINEERING



CONTROL SYSTEM DESIGN (PCS, DCS, PLCS, RIOS)

COMMUNICATION SYSTEM DESIGN (RACKS, SWITCHES, SEVERS, PATCH PANEL)

SCADA SUPPORT (SCREENS, CAPABILITIES, SYSTEMS)

SELECTION & SPECIFICATION OF CONTROL & COMMUNICATION EQUIPMENT

CCTV DESIGN

DELIVERABLES

PROCESS CONTROL ARCHITECTURE

COMMUNICATION NETWORK

INPUT AND OUTPUT LIST

CONTROL AND COMMUNICATION PANEL LAYOUT

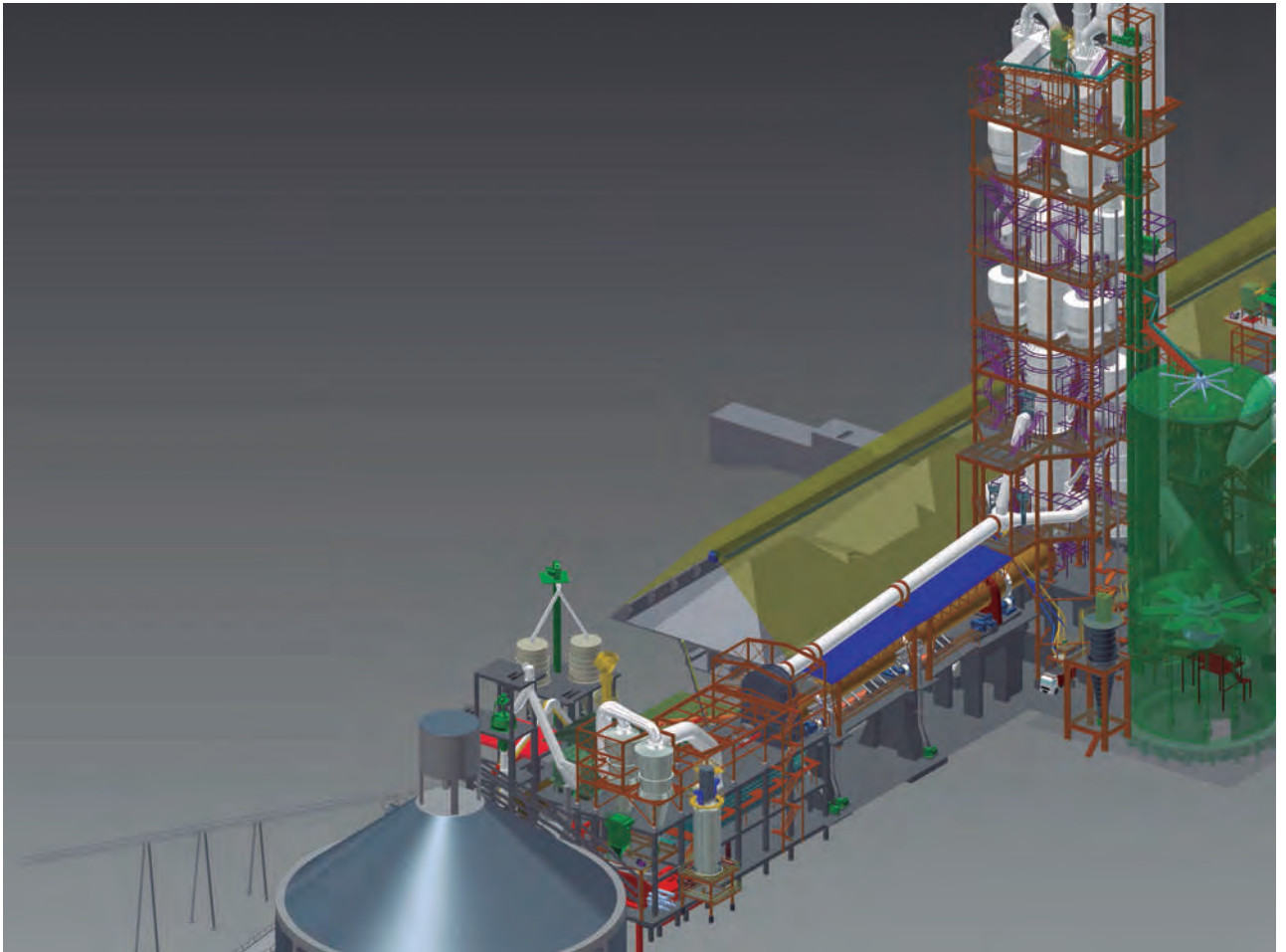
CONTROL AND COMMUNICATION WIRING DIAGRAMS

TECHNICAL SPECIFICATION AND DATA SHEETS

LOOP DIAGRAMS

CONTROL NARRATIVE/FUNCTIONAL DESCRIPTION

3D MODELLING FOR FULL PROJECT INTEGRATION



INTEGRATION OF EQUIPMENT ENGINEERING WITH THE CIVIL,
MECHANICAL FABRICATION AND ELECTRICAL ENGINEERING

SHOP DRAWING REVIEWS

FABRICATION SHOP INSPECTIONS

COORDINATION OF MATERIALS FABRICATION FOR CONSTRUCTION
AND DELIVERIES TO THE JOB SITES

ADVANTAGES OF WORKING WITH US

TOTAL RESOURCES IN HOUSE

KNOW-HOW AND EXPERIENCE IN CEMENT & LIME SOLUTIONS

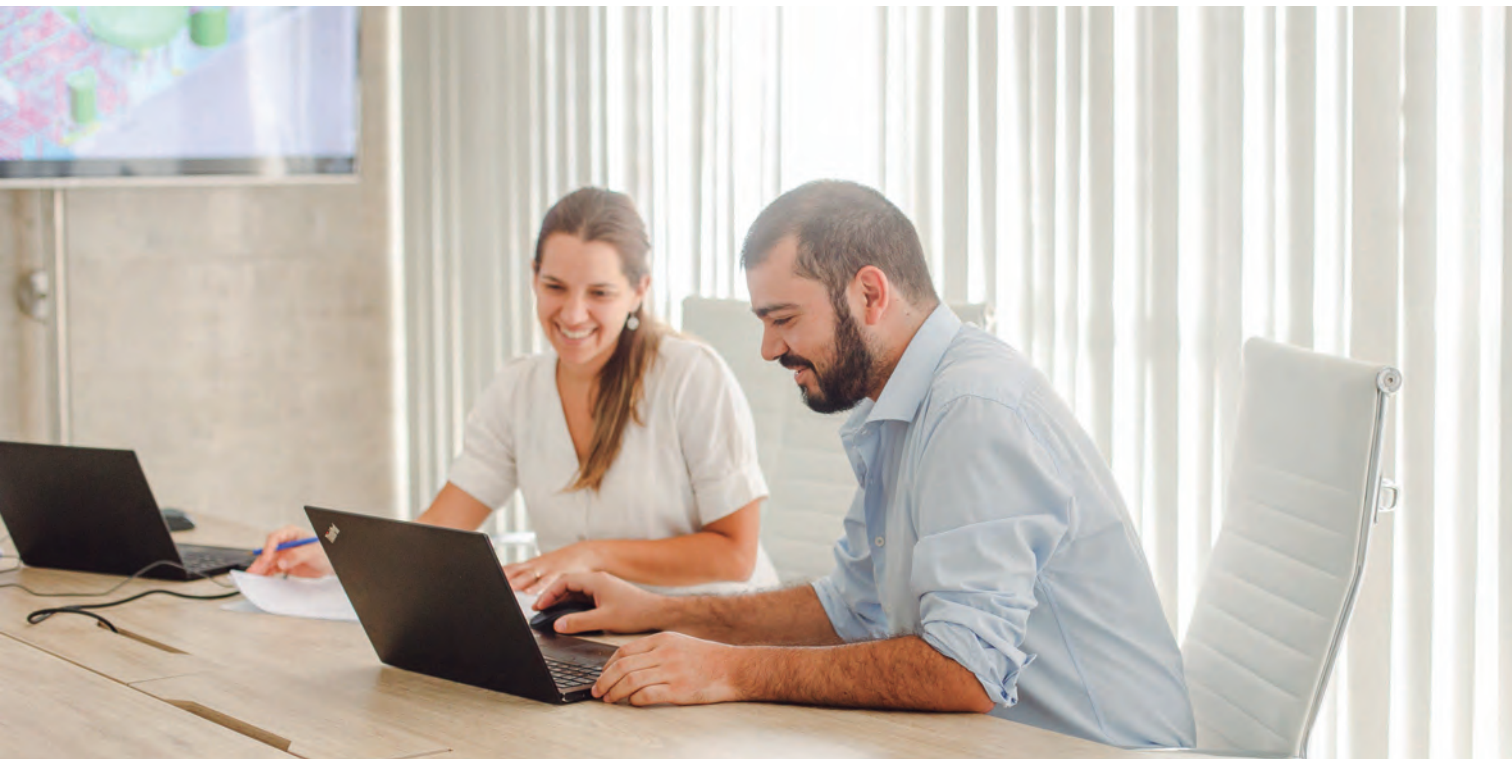
LEADERSHIP IN DETAILED ENGINEERING SOLUTIONS

DEEP KNOWLEDGE OF STANDARDS AND CONSTRUCTIVE PROCEDURES

ENGINEERING MANAGEMENT ORIENTED TO SATISFY CLIENT TECHNICAL NEEDS

EXTENSIVE EXPERIENCE IN VALUE ENGINEERING FOR INDUSTRIAL PROJECTS

ACCURATE BUDGETS, SCHEDULES AND COST CONTROL



PROJECTS



GCC - Rapid City Plant, South Dakota, USA

ENGINEERING AND SITE SUPERVISION SERVICES FOR THE UPGRADE OF GCC CEMENT PLANT

SAXUM scope of work: development of the engineering designs and the project control during the construction phase of these projects. Perform the designs (from conceptual to detailed solutions) in all different disciplines, including Mechanical, Civil, Structural, Electrical and Instrumentation engineering. In parallel, SAXUM is developing/defining all needed data sheets and specifications for purchasing the required equipment and construction/erection works.

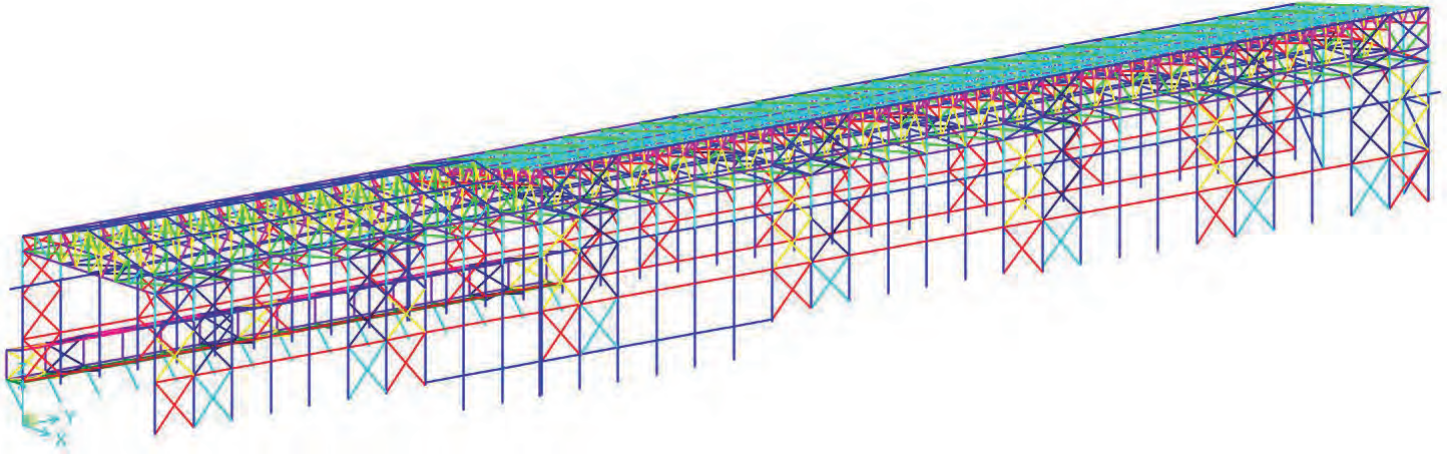
PROJECTS



GIANT Cement – Elementia Group Harleyville, South Carolina, USA

FINISH MILL #2, MATERIAL HANDLING AND BULK LOADOUT SYSYEMS UPGRADES

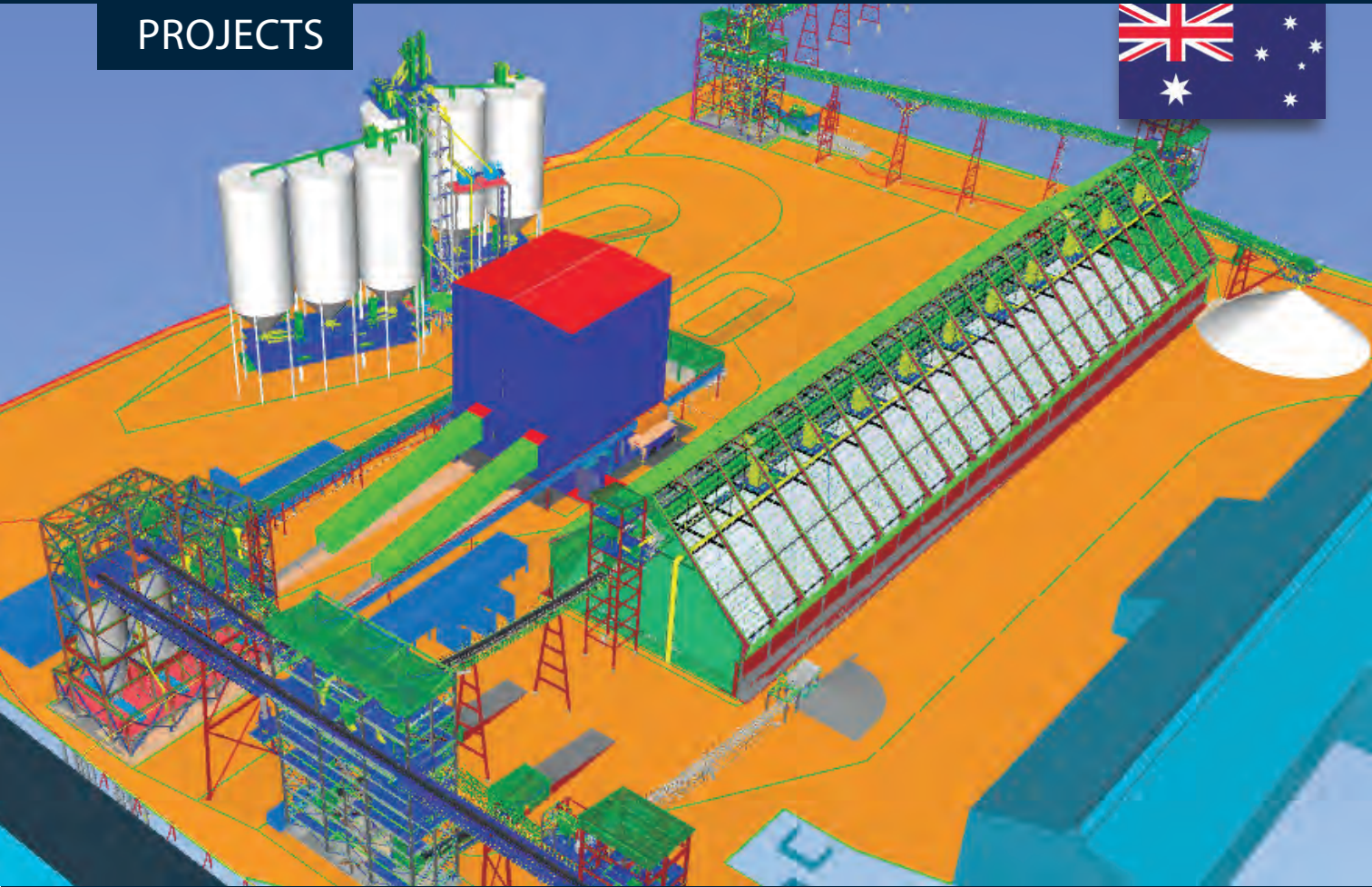
SAXUM scope of work: performance of the overall Owner’s Engineers role for the project which included over six months of project management, project controls, civil/structural, mechanical and electrical engineering on-site services as well as construction/erection assistance and support; in addition, on GIANT’s behalf, SAXUM reviewed the OEM’s project schedule and interfaced with the contractors throughout the project, including commissioning.



BUZZI UNICEM - Pryor Cement Plant - Oklahoma, USA

SAXUM scope of work: The BUZZI cement plant in Pryor, Oklahoma has a storage hall with an overhead crane that had serious structural concerns which limited the operation of the crane. SAXUM performed a field evaluation and a structural study to assist BUZZI in its objective to restore full use of the storage building and crane operation. An accurate mathematical model was utilized to provide insight for the building's structural reinforcement needs in order to eliminate beam and column issues. From this analysis, SAXUM was able to provide repair recommendations, a repair budget, and a revision to construction drawings for building reinforcement.

PROJECTS



Kwinana Grinding Plant Upgrade - Western Australia

SAXUM scope of work: Multi disciplinary engineering for the balance of the plant Kwinana Grinding Plant Upgrade at Western Australia. SOW included the process, civil, structural, mechanical, piping, electrical, and instrumentation design required for the manufacture, supply, installation and commissioning of the grinding and storage upgrade works to the Kwinana operations.

PROJECTS



Capitol Aggregates Cement Plant - TX - USA

SAXUM scope of work: Project Management and Site Supervisor services for the upgrade project at Capitol Aggregates Cement Plant located in San Antonio, Texas - USA.

PROJECTS



Maceo Project - FLSmidth CEMEX - Colombia

ENGINEERING SERVICES FOR CEMEX MACEO PROJECT

SAXUM scope of work: Project integration, electrical and structural engineering and basic and detailed designs levels for the Greenfield project for the clinker and cement plant in Maceo, Colombia. Engineering document stamping and sign-off by Registered Engineers in Colombia.

PROJECTS

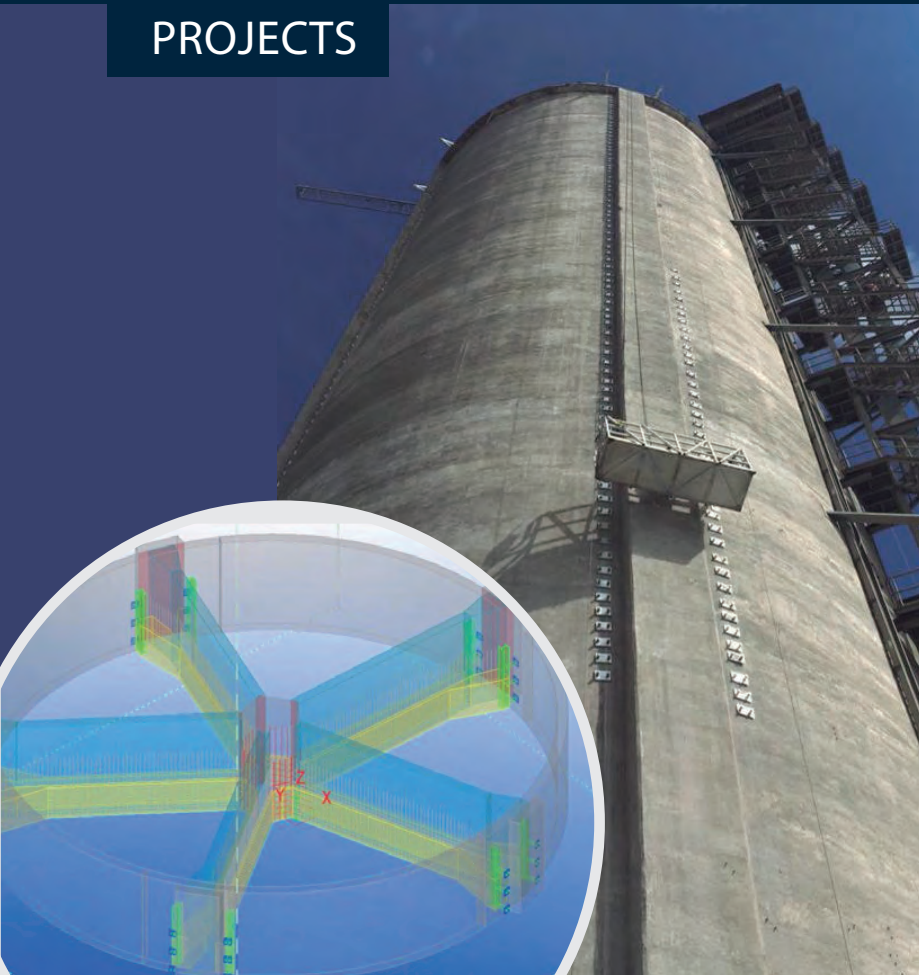


Intercement - Cubatao project - Brazil

MULTI DISCIPLINARY ENGINEERING SERVICES FOR CUBATAO PROJECT

SAXUM scope of work: Greenfield cement grinding project in Sao Paulo area. Conceptual, basic and detailed engineering, covering all project disciplines (Process, Mechanical, Structural, Electrical, Instrumentation & Control engineering) and all project areas for the 140 t/h grinding line.

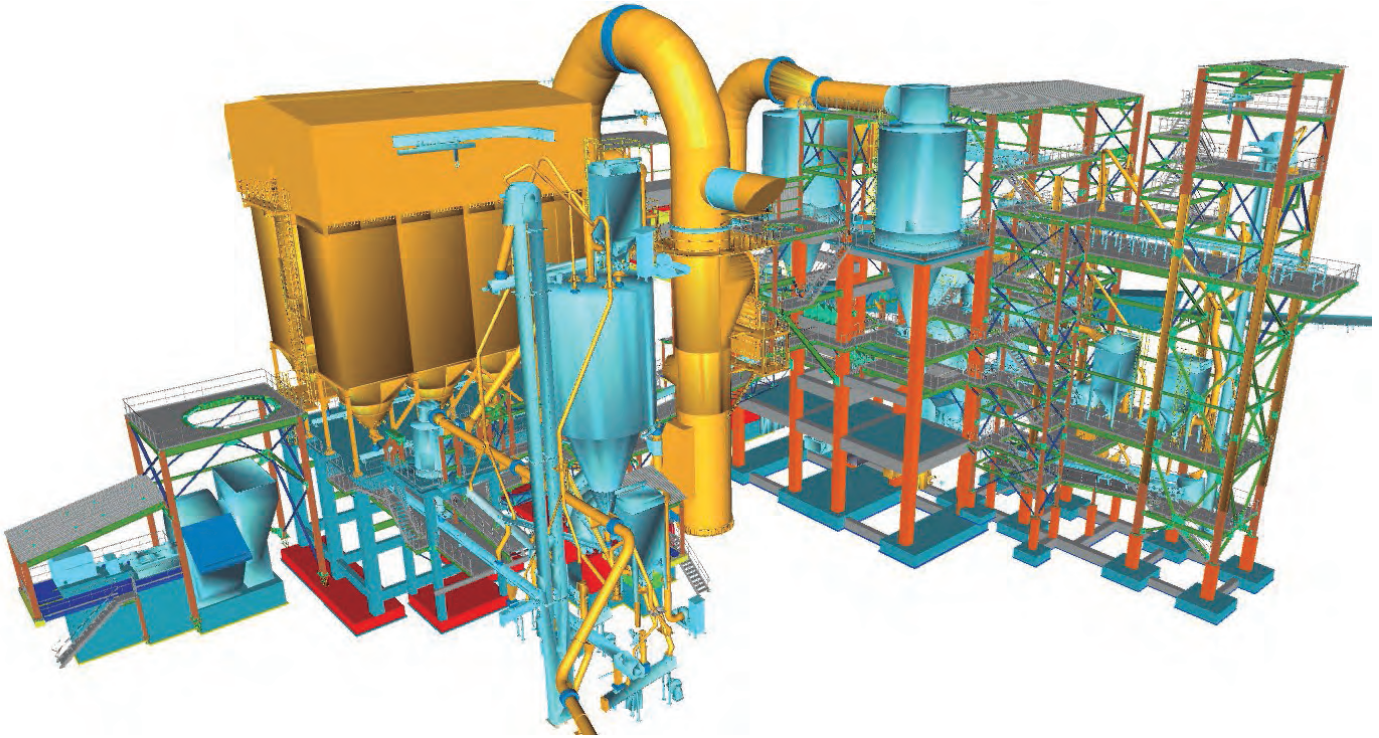
PROJECTS



UCEM - Chimborazo Plant - Ecuador

DAMAGED CEMENT MULTI-CHAMBER SILO: ASSESSMENT OF STRUCTURAL PATHOLOGY AUSES & DESIGN OF REPAIR PROCEDURE

SAXUM scope of work: Development of the structural reinforcement design to repair the structural pathology presented by the radial walls and their connections of the 15,000-ton capacity multi-chamber silo. Chimborazo Plant in Riombamba Ecuador.



Moncada - New Cement Production Line - Cuba

ENGINEERING AND SITE SUPERVISION SERVICES

SAXUM scope of work: Project integration and Civil/Structural engineering services for several plant areas of the New Cement Production Line of 3.500 TPD– Greenfield Project Moncada, Cuba.

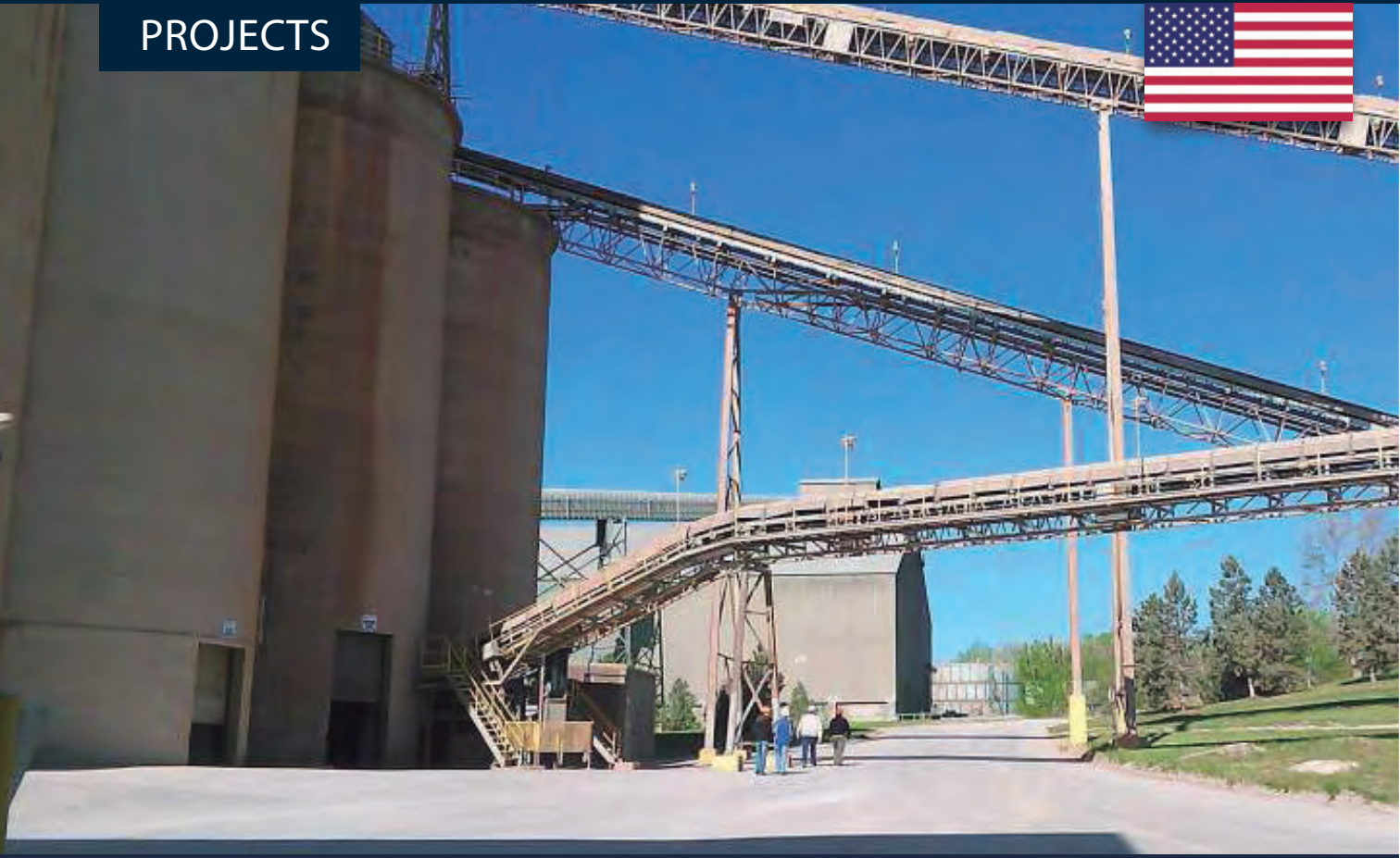
PROJECTS



GCC Cement Plant - Odessa, USA

SAXUM scope of work: Mechanical and Structural engineering for downcomer redesign including fabrication drawings. The engineering analysis by SAXUM was focused on the analysis of the thermo mechanical flow, the definition of the new supporting conditions and the global stability of all structural components of the downcomer at the GCC Production Plant, located at Odessa, Texas.

PROJECTS

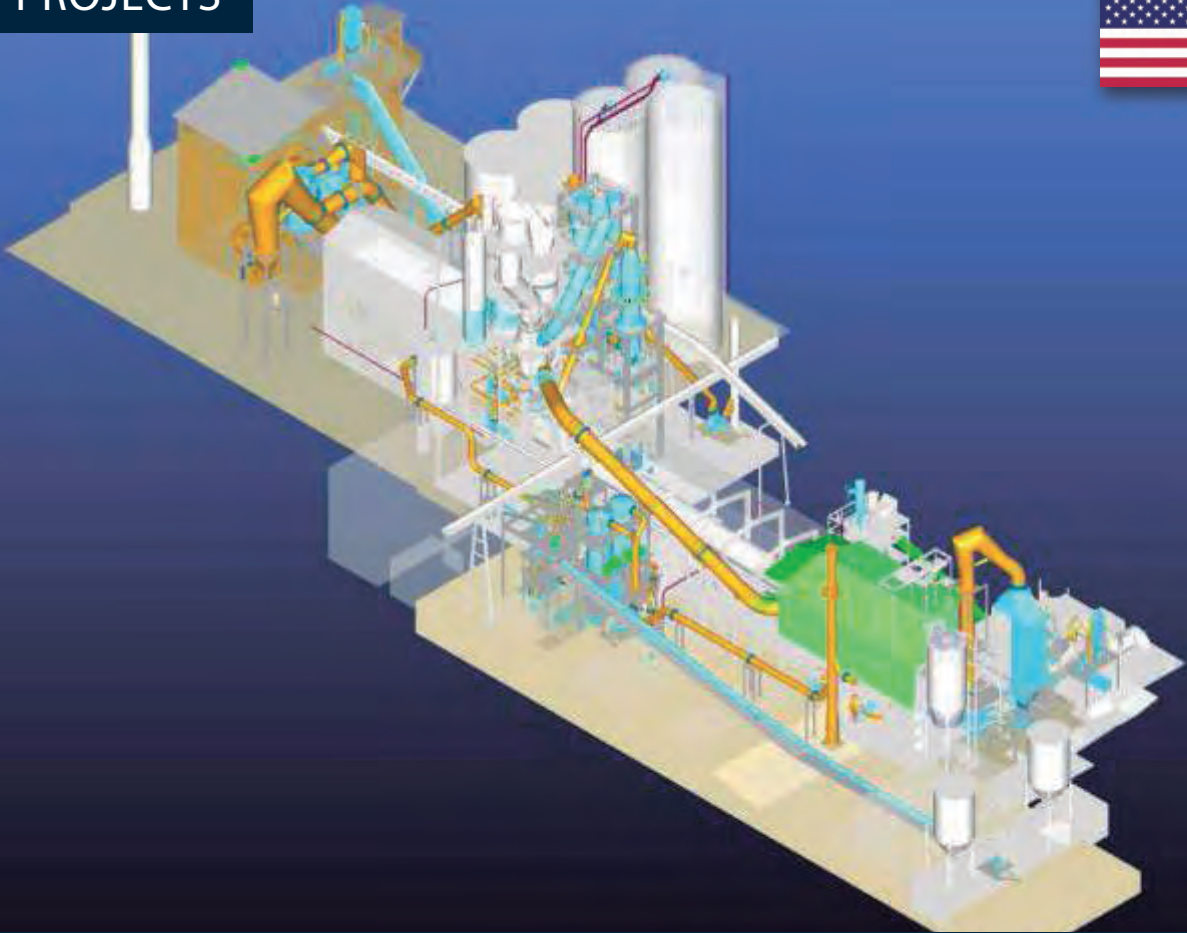


GCC - Rapid City Plant - South Dakota, USA

VERIFICATION OF STRUCTURAL SAFETY CONDITION OF EXISTING HOMO-SILO BATTERY AND DESIGN OF OPTIMAL REINFORCEMENT SOLUTIONS

SAXUM scope of work: Evaluation of current safety conditions of the structures and foundations of the homogenization silo battery at Rapid City, SD, plant. Based on site evaluations, accurate and detailed mathematical models were developed by SAXUM which allowed précised evaluations of silo safety conditions and, moreover, of the optimal reinforcements and modifications to the structures that need to be performed to improve silo safety conditions attending current codes and standards. SAXUM services in this project also included the mechanical designs of the new loading and unloading systems of the homo silos.

PROJECTS



GCC - Rapid City Plant - South Dakota, USA

ENGINEERING AND SITE SUPERVISION SERVICES FOR PLANT UPGRADE PROJECT

SAXUM scope of work: Conceptual and detailed complete civil/structural engineering of the GCC cement plant upgrade through FLS, the main equipment provider. SAXUM services also include the sign-off and stamping of all related detailed designs of structures and foundations.



6.1. Foundation Ring:

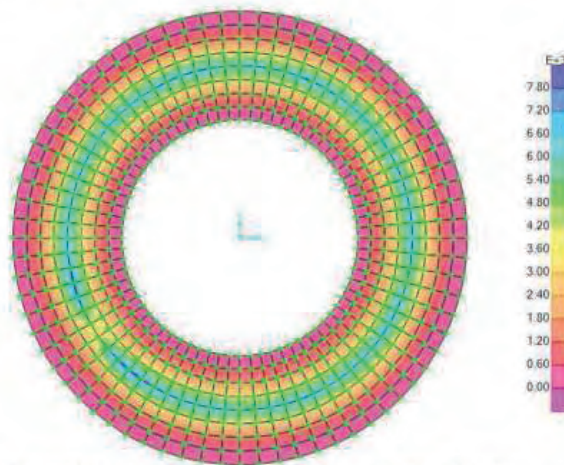


Figure 10: Envelope maximum Bending Moment radial (KN.m/m)

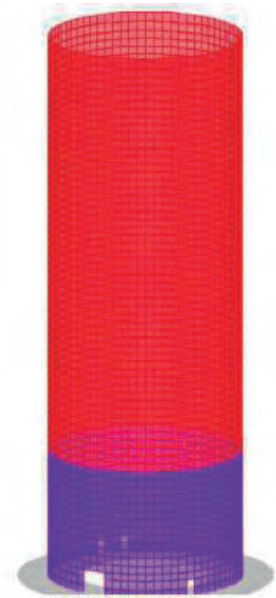
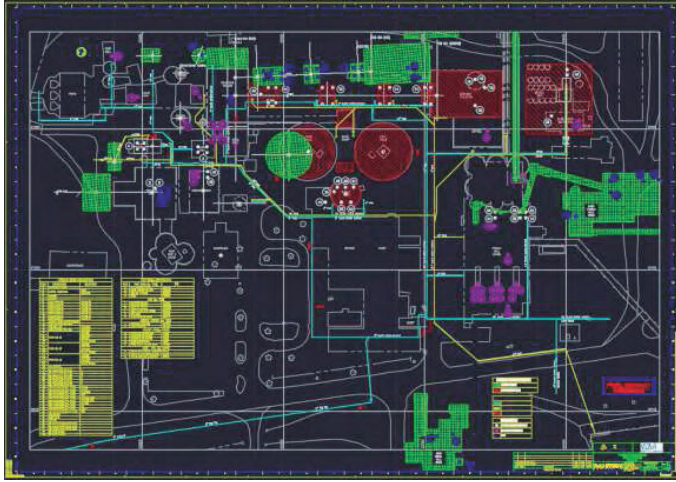


Figure 7: 3D View

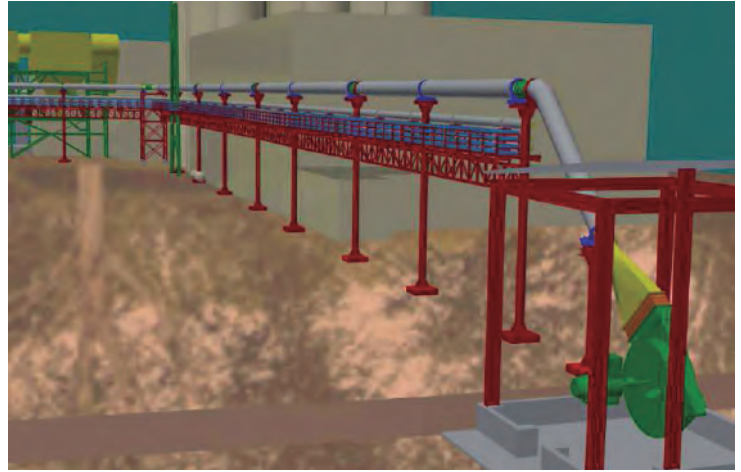
Votorantim North America - St Mary's Cement

UPGRADE PROJECT AT CHARLEVOIX PLANT, MICHIGAN - USA

SAXUM scope of work: Engineering services for new raw mill blending silo and for the new clinker cooler stack including mechanical and structural design documents.



Water System – Plant Layout



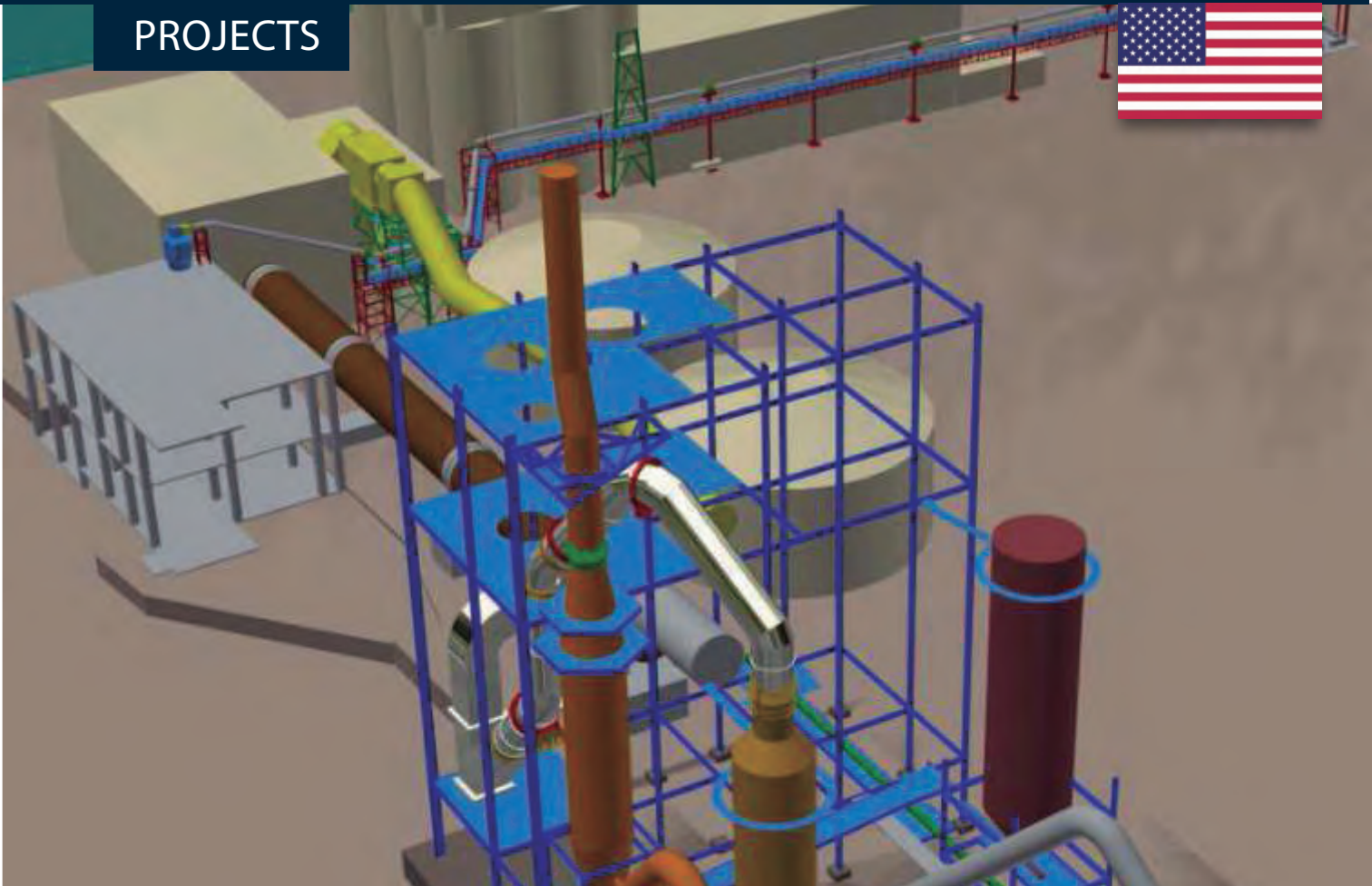
Hot Gases Duct

Votorantim North America - St Mary's Cement

HOT GASES DUCT - AIR & WATER UTILITIES CHARLEVOIX PLANT, MICHIGAN - USA

SAXUM scope of work: Basic and detailed engineering in mechanical and structural discipline for the new hot gas duct from the clinker cooler to the coal mill and for the related air & water utilities for the plant upgrade project of St Mary Cement at Charlevoix.

PROJECTS



Votorantim North America - St Mary's Cement

BY-PASS DUCT CHARLEVOIX PLANT, MICHIGAN - USA

SAXUM scope of work: Complete basic and detailed mechanical and structural engineering, drawing sign off and stamping, for the new Process By-Pass Duct, to be installed in the St. Mary's Cement plant as part of the plant upgrade project

PROJECTS



Votorantim - Salto de Pirapora project - Brazil

NEW CEMENT LIME

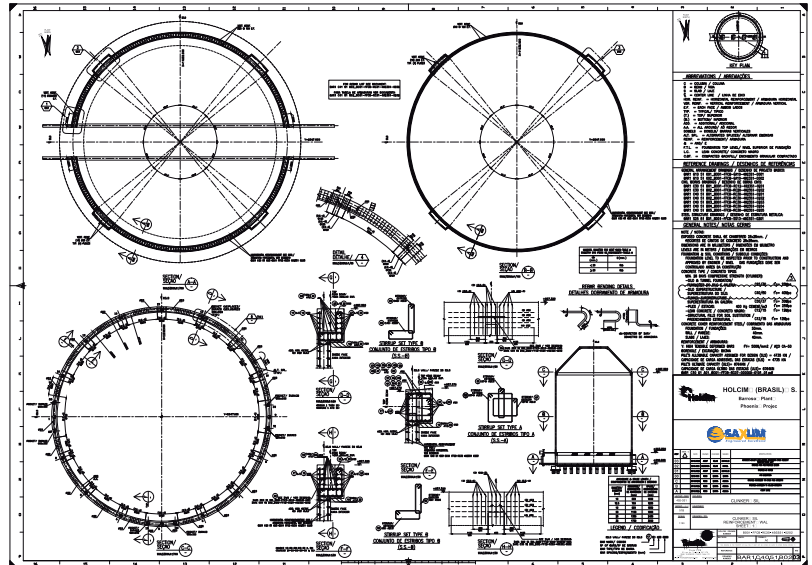
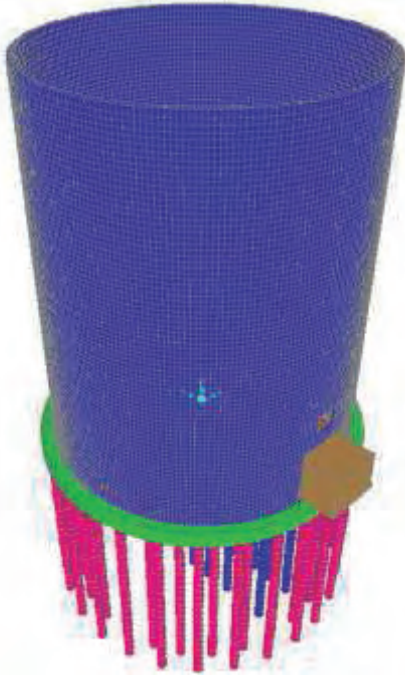
SAXUM scope of work: Mechanical and Structural engineering. Project Integration. Development of project 3D Model. Review of vendors engineering attending Owner's design criteria.

PROJECTS



Lafarge Holcim - Brazil

SAXUM scope of work: Feasibility study for clinker production capacity upgrade. Conceptual engineering and CapEx estimate.



Lafarge Holcim - Barroso Project - Brazil

SAXUM scope of work: Electrical and structural detailed engineering for new clinker silo with 35.000 tons capacity.

PROJECTS



Argos - Columbus Project - USA

MULTIDISCIPLINARY ENGINEERING AND SITE SUPERVISION SERVICES

SAXUM scope of work: Mechanical, electrical and structural engineering services for the new cement lime of ARGOS at Cartagena, Colombia. SAXUM services were complemented with project manager and site supervision services. In this project, SAXUM was awarded with the “210 ASOCRETO - Excellence in Concrete Award”.

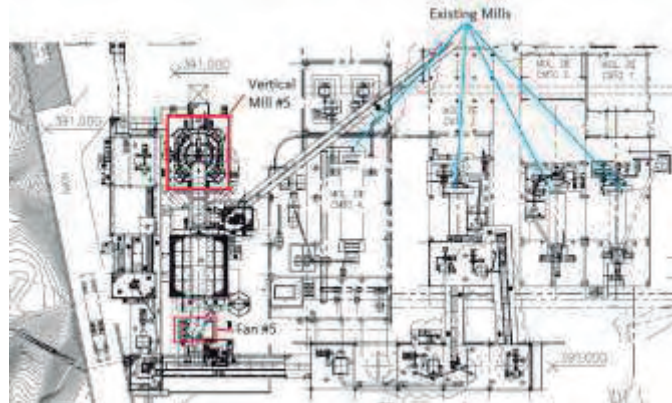


Carlportland - Mojave Project - California

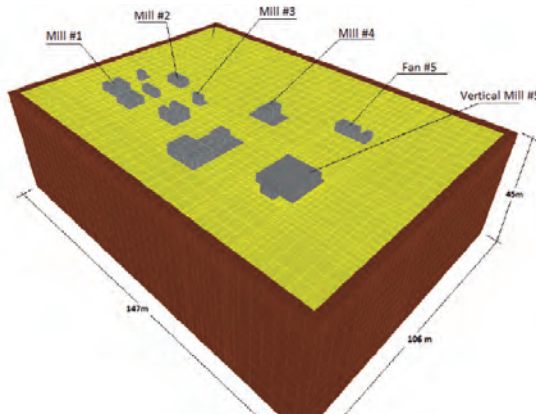
ENGINEERING SERVICES FOR RAW MILL FEED AT MOJAVE PROJECT

SAXUM scope of work: SAXUM performed Civil/Structural, Piping and Electrical Basic and Detailed Engineering services in the Raw Mill Feed and Mill proper areas for the FLS CalPortland Mojave Project in California.

PROJECTS



Rio Claro Plant View



Mathematical model for dynamic iteration analysis and foundation design of Mill #5

Argos - Rio Claro Project - Colombia

SAXUM scope of work: New Vertical Mill. Complete structural engineering, mechanical integration and construction supervision. SAXUM was awarded with the “210 ASOCRETO - Excellence in Concrete Award”.

PROJECTS



Companhia Siderúrgica Nacional - Arcos Plant - Brazil

NEW 6500 T/DAY CLINKER PRODUCTION LINE - ARCOS PLANT

SAXUM scope of work: Mechanical, Electrical, I/C and Civil/Structural engineering. Bid packages issuing and Vendors technical proposals analysis. Site supervision and technical office services for RFI during construction.

PROJECTS

Cimentos da Bahia

PARIPIRANGA PROJECT

Assistance in the selection of the cement technology for a new 5000 tpd clinker line, and the review of the engineering of the production plant to be supplied by the main equipment vendor.



Cimentos da Bahia

GREEN FIELD CLINKER AND CEMENT PROJECT PARIPIRANGA PROJECT

Technical support for Homologation Analysis of Equipment Provider's proposals and vendor selection. Vendor engineering design revision. Basic and detailed engineering for all plant infrastructure.

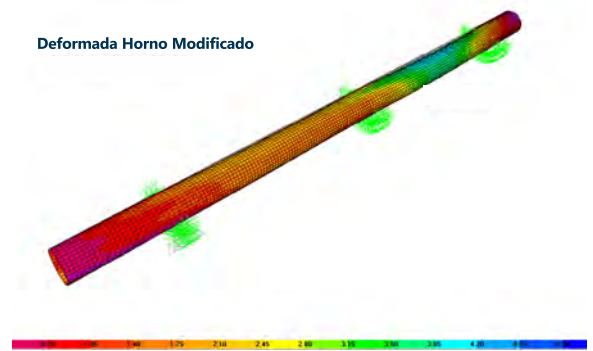


Cementos Bolivianos

GREEN FIELD CLINKER AND CEMENT PROJECT SAYARI PROJECT

Audit and production capacity assessment of purchased equipment. Conceptual and basic designs. CapEx estimate. Computational modeling for stress perturbation analysis caused by the cutting of the kiln to adapt it to the dry process operation. Main objective of this computational analysis is to verify that the cutting of the kiln will not lead to higher stresses than those existing in the kiln shell before its modification. This analysis also allowed to determine the optimal location of the cutting.

Deformada Horno Modificado



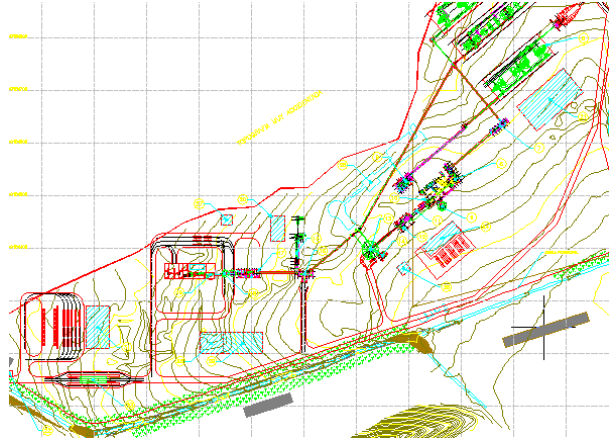
PROJECTS

Intercement

GREEN FIELD CEMENT GRINDING PROJECTS
IN THE NORTH-EAST REGION.

SOL & PASCOAL PROJECTS

Conceptual engineering, Trade-off analysis of design alternatives, project schedules, logistics analysis, CapEx and Cash-Flow estimates.

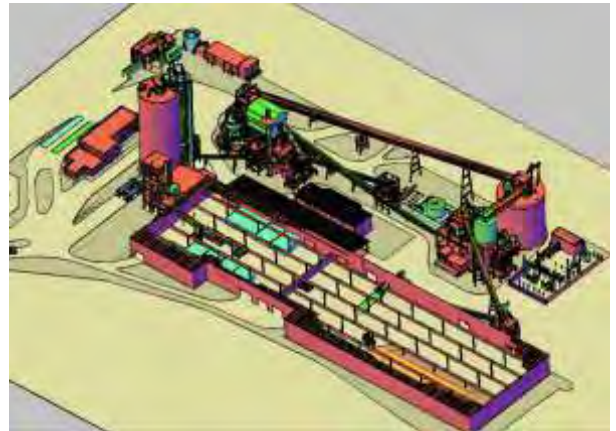


Intercement

GREEN FIELD CEMENT GRINDING PROJECT
IN THE SAO PAULO AREA.

CUBATÃO PROJECT

Conceptual, basic and detailed engineering, covering all project disciplines (Process, Mechanical, Structural, Electrical, Instrumentation and Control Engg.) and all project areas for the 140 t/h grinding line.



Polpaico

NEW RAW MEAL LINE.

CERRO BLANCO PLANT

As part of its strategy to improve the raw meal quality and optimize energy consumption rates and maintenance costs, Cemento Polpaico has engaged SAXUM to develop the conceptual and basic engineering of a new raw meal grinding line in its Cerro Blanco plant, Chile.

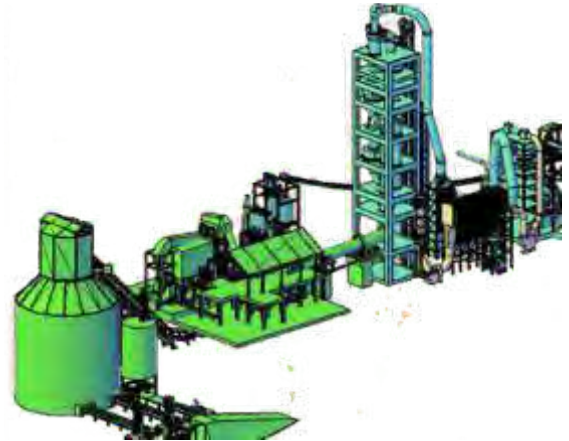


PROJECTS

Cimpor

GREEN FIELD CLINKER AND CEMENT PLANT OTORONGO PROJECT

Plant conceptual and basic engineering, covering all disciplines. Process plant design criterion based on low water consume.



Companhia Siderúrgica Nacional

NEW CEMENT GRINDING PLANT ARCOS PLANT

Complete Mechanical, Structural, Electrical, Instrumentation and Control engineering. Bid packages issuing and Vendors technical proposals analysis. Site supervision during construction and erection. RFI (request for information) assistance during construction and erection.



Cementos del Plata

KILN PRODUCTION OPTIMIZATION TREINTA Y TRES PLANT

Optimization of the operation of the existing Vertical Shaft Lime Kiln. Audit of the project management for new rotary lime kiln.



PROJECTS

Companhia Siderúrgica Nacional

NEW 6500 T/DAY CLINKER PRODUCTION LINE ARCOS PLANT

Complete Mechanical, Electrical, I/C and Civil/Structural engineering. Bid packages issuing and Vendors technical proposals analysis. Site supervision and technical office services for RFI during construction.



Cementos Yura

NEW CEMENT GRINDING PLANT MISTI PROJECT

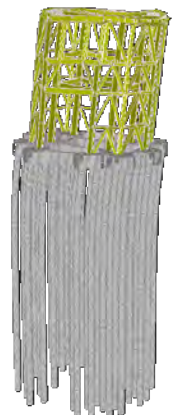
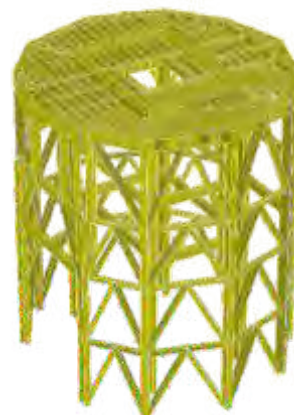
Complete Civil/Structural, Mechanical and Electrical designs. Basic and detailed engineering. Trade off analysis between alternative structural and mechanical designs.



Confidential Client

SEISMIC RESISTANT SUPPORT FOR CEMENT SILO

Seismic resistant support and foundation system for steel silo of cement.





CONTACT US

United States

Dallas, Texas

Office: +1 972 727 3331

Fax: +1 972 717 3137

Mob: +1 4845152840

jared.weston@saxum.us

Australia

Perth, WA

Office: +61 047 444 0235

Mob: +61 047 444 0235

melanie.else@saxum.us

Brasil

Belo Horizonte

Office: +55 31 3309 4578

Mob: +55 11 9764 89327

+55 11 9915 76066

admbrasil@saxum.us

Argentina

Buenos Aires & Tucumán

Offices: +54 381 4874929

+54 11 43721815

Mob: +54 911 58831583

+54 911 50115333

constanza.unzaga@saxum.us

nestor.lares@saxum.us