



***Leaders in Engineering since 2007.***



## Our Company

**RA INGENIEROS LTDA.** is an engineering company dedicated to the design of mining, energy, infrastructure, industrial and architectural projects.

**Our mission** is to deliver successful and profitable projects to our clients, providing high-standard engineering and consulting services.

**Our values** are honorability with clients, employees and subcontractors. Have a proactive and joyful work environment where respect and ideas are valued. Deliver a product that represents a harmonious, beautiful, cost-effective, and profitable solution for the customer.

**Our vision** is to lead in the field of Engineering and Services in Chile and the world.

**Our differentiating factors are:** Quick response time, cost-effective solutions, simplicity, and expertise



## Company Background

Business Name : RA Ingenieros Ltda.  
RUT : 76.003.923-8  
Main Business Activity: Engineering and Services  
Address: Santa Magdalena 10, Office 34  
Commune/City/Country: Providencia, Santiago, Chile  
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Email: [rasenjo@raingenieros.cl](mailto:rasenjo@raingenieros.cl); [pveliz@raingenieros.cl](mailto:pveliz@raingenieros.cl)  
Website: [www.raingenieros.cl](http://www.raingenieros.cl)  
Legal Representative: Mr. Rodrigo Asenjo

<b>Campos de Gestión</b>
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### **Structural Engineering**

Designs of Steel and Reinforced Concrete Structures (buildings, pipe racks, walls, crushers, warehouses, foundations, equipment supports, etc.).

Inspection, Evaluation, and Repair of Existing Structures (Buildings)

### **Multidisciplinary Engineering**

Considering that our *focus* is Structural Engineering, we can also undertake projects that involve all disciplines of engineering: Civil, Structural, Architecture, Electrical, Piping, Mechanical, Instrumentation, Control, and Cost.

<b>Main Clients</b>
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Anglo American  
Codelco  
Hatch  
Melón  
SQM  
Teck CDA

<b>Works done</b>
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<b>Mining Projects</b>
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• *Jobs Abroad:*

Lime Plant, Peru, Ingemin for **Quellaveco** (2018).

Foundation Study, **Kola Potash**, Congo (2017).

Silo, Las Bambas, Peru, Ingemin for **Xstrata** (2012).

Structural Design, Ingemin for **Quellaveco**, Peru (2015).

Silo, Antamina, Peru, Ingemin for **Antamina S.A.** (2012).

Conveyor Belt Design, Cape Lambert Port B – Return Fines Circuit, Australia, **SKM** for **Rio Tinto** (2011).

Piping Survey, Veladero, Argentina, Environmental Engineering for **Barrick** (2011).

Structural Engineering, Tía María Project, Peru, SKM for **FLSmidth** (2010).

Structure for Lime Storage Silo, Pirquitas Project, Jujuy, Argentina, Ingemin for **Techint-Mina Pirquitas Inc.** (2008).

Induction Furnace Structure, Cajamarquilla Project, Lima, Peru, Ajax Tocco Magnethermic Canada for **Amec, Votorantim Metais** (2008).

• *Jobs for Chile:*

Pile Design for SQM Salar Plant (2022, 2023).

Hazardous Substances Warehouses, **SQM** (2020).

Zaldívar Stacker, Ingemin for **Codelco** (2019).

Design of Transfers and Foundations for Tenova Belts, PMCHS, **Codelco** (2017).

Cop 5 Trucks Shop, Nueva Victoria, **SQM** (2016).

Prefabricated Warehouses in Mexico, Escondida Water Supply, Butler for **Minera Escondida Ltda., MEL** (2014).

Concentrate Warehouse, Carmen de Andacollo, **Teck CDA** (2013).

Multidisciplinary Engineering for Supply Warehouses, Salar, **SQM Salar** (2012).

Multidisciplinary Engineering - Detail Engineering, Expansion of Basic Services, Iris II Project, I Region, **SQM** (2011 and 2012).

Multidisciplinary Engineering - Detail Engineering for Mechanical, Electrical, and Instrumentation Workshop, Las Tórtolas Plant – Los Bronces, **Anglo American** (2011).

Pre-design for Agglomeration Plant, Antucoya, II Region, Takraf for **Antofagasta Minerals, AMSA** (2011).

SOP H: Filter Arrangements/Monorail/Pipe Rack/Centrifuge, Salar, II Region, **SQM Salar** (2011).

Various Designs (Stock Pile/Screen Platforms/Crusher/Bag Filter/Belts and Domes), Ministro Hales Mine, II Region, Hatch for **Codelco** (2010-2011).

Seismic Review of Facilities at Nueva Victoria Plant, **SQM** (2010).

Expansion of Warehouse No. 3, Hypogene Project, IV Region, Amec for Compañía **Minera Carmen de Andacollo** (2008).

## Energy Projects

Equipment and Structures Foundations, Cerro Pabellón 3, II Region, Ormat for **Enel** (2018/19/20).

Pre-design of Foundations for Wind Mills, Punta Sierra, IV Region, Abengoa for **Pacific Hydro** (2016).

Foundation Design for Wind Farm Substation Project, Renaico, IX Region, Cobra for **Enel** (2015).

Building Design for Cerro Navia 220 KV Substations, RM, Dessau for **Transelec** (2010).

Structural Engineering for Headworks, San Andrés Central Project, VI Region, Reg for **Hydrochile** (2009).

Foundations for Conveyors FSC-6 and FSC-7, Replacement Project for Conveyors Reclamo 4 and 5, Guacolda II, III Region, STM for **Eléctrica Guacolda** (2009).

Basic Engineering for Wind Mill Foundations, Gaby, II Region, Seawind for **Codelco** (2008).

Consultancy and Review of Design for Wind Mill Foundations, Punta Colorada, IV Region, Seawind, for **Barrick** (2008).

### Industrial Projects

Design of Foundations for Cement Plants, QB2, Melón for **Teck** (2019).

Structural Repair for Pétreos La Junta Plant, RM, **Polpaico** (2014).

Structural Review of Equipment Foundations, RHI Plant, RM, **RHI** (2010).

Structural Review of Carrascal Plant, RM, **Fanaloza** (2010).

Support for Hopper and Silo, Inacesa Plant, RII, Ingemin for **Inacesa** (2010).

By-Pass Duct Tower, La Calera Cement Plant, V Region, **Melón** (2009).

Support Structure for Crusher and Screen, Pétreos Expansion Project, Secondary Plant Puente Maipú, **Holcim/Cement Polpaico** (2009).

Boiler Piping for Press Feeding, Cauchotécnica Plant, Metropolitan Region, **Cauchotécnica** (2008).

Disassembly Engineering of Electrofilter Building, Cerro Blanco Plant, **Holcim/Cement Polpaico** (2008).

Design of Settling Pools and Equipment Foundations, Pétreos Renca Plant Project, Metropolitan Region, **Holcim/Cement Polpaico** (2007).

### Infrastructure Projects

Seismic Study of Elevators, Metro, TKE for **Metro** (2018).

Structural Review of Pudahuel Airport, post 2010 Maule Earthquake, Cruz y Dávila for **MOP** (2010).

Review of the Design of Port Defense Structures, Improvement Project for Fishermen's Cove, Ancud, X Region, Edeco for **MOP** (2009).

Bridge Design, Route 160, VIII Region, M y C for **MOP** (2007).



<b>Architectural Projects</b>
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Multidisciplinary Engineering for Finning Antofagasta Technical Training Center, **Finning** (2010).

Structural Review of Buildings at Arturo Merino Benítez Airport, RM, Cruz y Dávila for **MOP** (2010).

Structural Review of La Florida and Maipú Hospitals, Hospital Concessions Project, RM, **Abengoa** (2009).

ITO (Inspección Técnica de Obras) for Air Conditioning Pipelines, GTD Santiago Building, **GTD** (2009).

**Details of some completed projects**



Client: **SQM Salar**

Project: **Structural design of piles for improvements in the Atacama Salt Plant.**

Years: **2022, 2023, 2024**

**Features**

CSA RA Ingenieros Ltda: Meets the plant improvement requirements through the installation of piles in the foundations.



Client: **Angloamerican**

Project: **Mechanical, Electrical and Instrumentation Workshop Design, Las Tórtolas Plant – Los Bronces**

Year: **2011**

### Features

Meets the requirements for a new Mechanical, Electrical, and Instrumentation Workshop for the Pulp Transfer Department. Design of a 25-ton overhead crane for handling pipeline valves. Design of a high-pressure piping system.



Client: **SQM Nueva Victoria**  
Project: **Detailed Engineering - Expansion of Basic Services**  
Year: **2012 (Iris 1) y 2013 (Iris 2)**

### **Features**

The Iris camp at the SQM Nueva Victoria office located in the I Region required the provision of basic supplies: Drinking water, Electricity, and Sewage for 128 people in its first stage. This engineering involved a reverse osmosis plant, propulsion systems, piping, sewage treatment systems, the installation of 5 overhead substations, and the laying of medium and low voltage lines. This project is currently in operation.







Client:  
**Ormat para Enel**  
Project:  
**Cerro Pabellón 3**  
Years:  
**2018/2019/2020**

Negocios e industria  
VISTA AÉREA DE CERRO PABELLÓN.

Publicado el 2 de julio del 2019

### Features

This geothermal project required the design of foundations for its equipment and structures. It was carried out in several stages, with the final one being geotechnical engineering.

### CSA

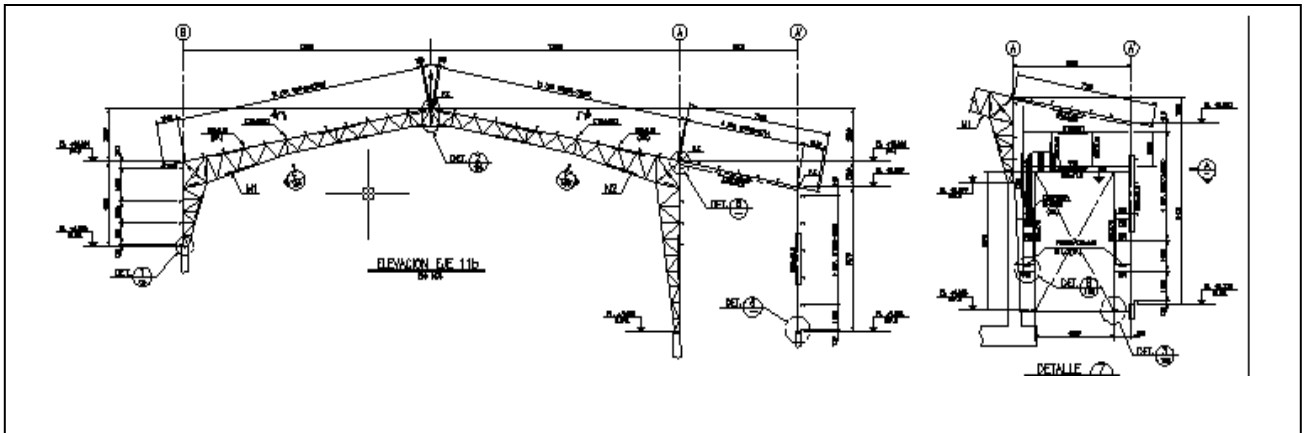
Design of calculation reports, plans with shapes, and reinforcement details in the American style (i.e., with lists of bars).

Client:  
**Amec for**  
**Cía. Carmen de Andacollo**

Project:  
**Expansion of Warehouse No. 3,**  
**Hypogene, IV Region**

Total Investment  
**US\$ 1.000.000**

Year  
**2008**

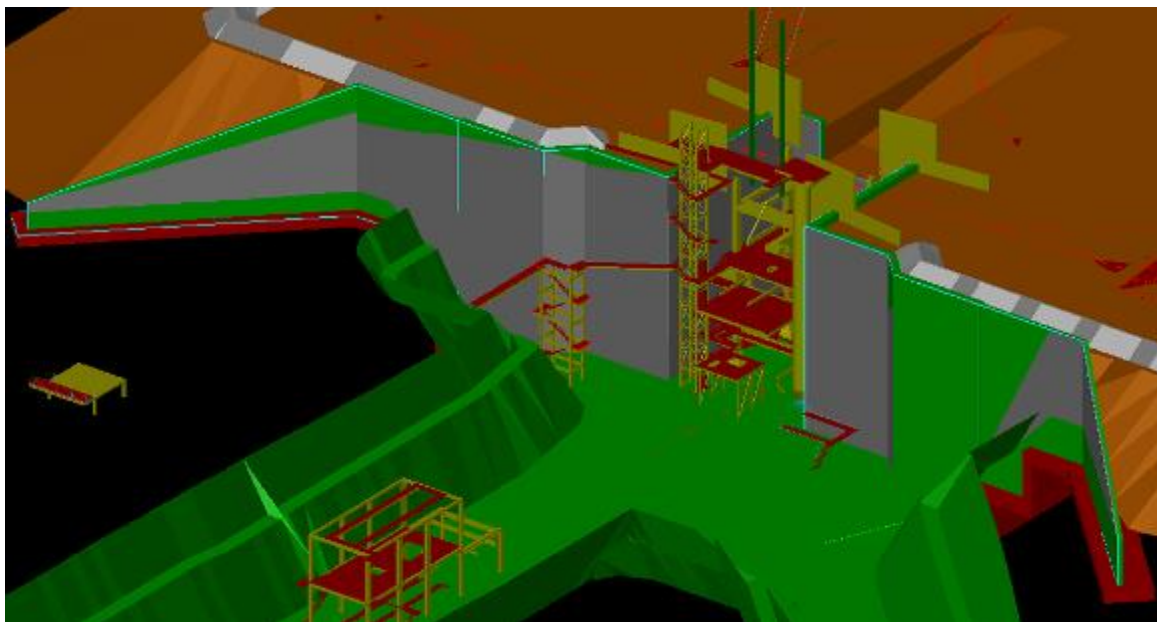


### Features

Detailed Engineering Design for a 2500 m2 warehouse building, supported by reinforced concrete retaining walls with a height of 7 meters.

### CSA

Design of the steel structure and its foundations, including slabs and retaining walls



Cliente: **Hatch for Codelco**

Project:

**Design of Wall for Crusher Basic Engineering, Minister Hales Mine (MMH), II Region**

Total Investment

**US\$ 8.000**

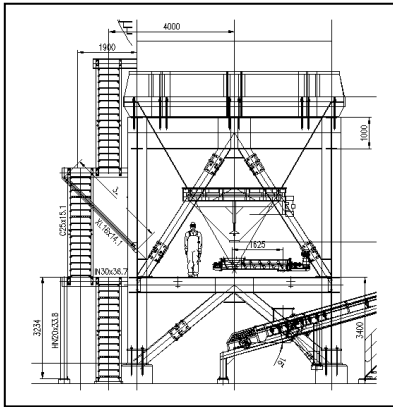
Year

**2010**

**CSA**

Design of retaining wall with heights of 27, 25, and 17 meters.





Client:  
**Ingemin para Amec**

Project:  
**Structure Support for Lime Silo.  
Carmen de Andacollo Project, IV  
Region  
Total Investment  
US\$ 1.600.000**

Year  
**2008**

#### **Features**

Steel structure supporting the weight of the lime silo, with two levels, totaling 20 meters in height and 50 square meters in plan.

#### **CSA**

Design of the steel structure, including the design of anchor bolts and details.



Client:  
**Seawind for Barrick**

Project:  
**Windmill Foundations. Punta  
Colorada Project, II Region.**

Total Investment:  
**US\$ 10.000.000**

Year:  
**2008**

#### **Features**

Verification and validation according to Chilean codes of the Structural Design of the Foundations (conducted in the U.S.A.) for the Wind Mills. These Wind Turbines, 80 meters in height, will provide electrical energy to Barrick's projects in the region, one of which is Los Pelambres.

#### **CSA**

Structural check of the foundation, including anchor bolt design.

Client:

**SQM**

Project:

**Seismic Review of Facilities at New Victoria Plant**

Year:

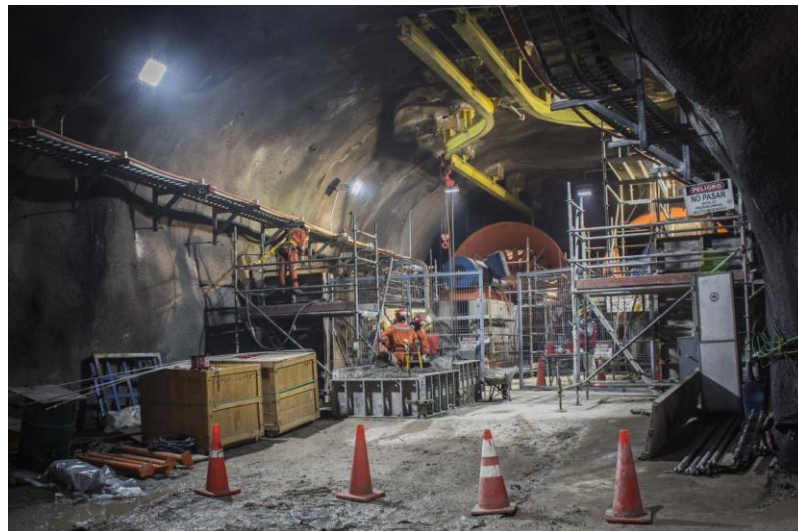
**2010**

### **Features**

**CSA:** Structural-seismic review of all facilities (buildings and equipment supports). Structures that required improvement were identified. The project included the design of the enhancements..



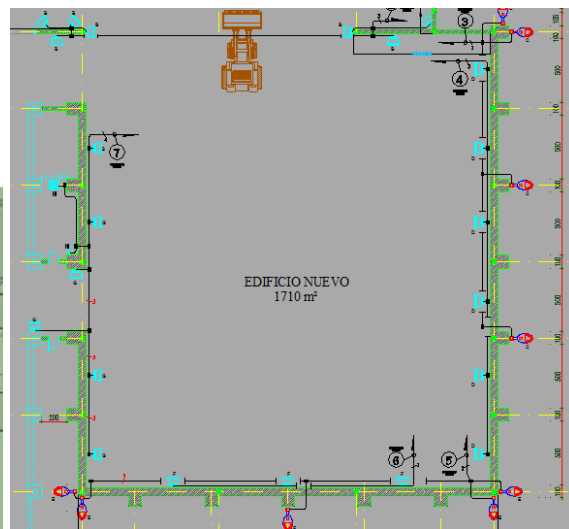
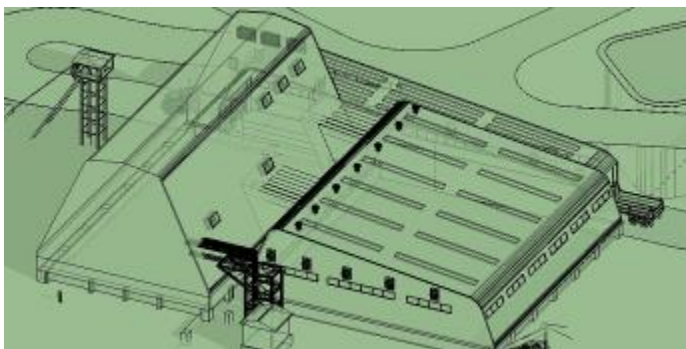
Client:  
**Tenova for Codelco**  
Project:  
**PMCHS: Design of transfers and foundations for conveyor belts.**  
Year:  
**2017**



Client:  
**TECK CDA**

Project:  
**Multidisciplinary Design of Concentrate Warehouse**

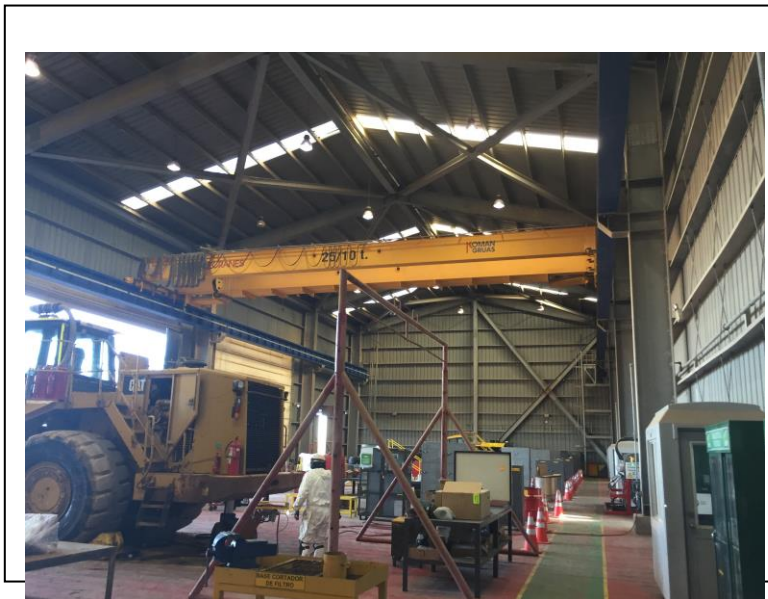
Year:  
**2013**



### Features

Multidisciplinary Design (Civil, Structural, Architecture, Mechanical, Piping, Electrical, Roadway) for the New Concentrate Warehouse at Carmen de Andacollo.





Client:  
**SQM**

Project:  
**Cop 5 Truck Shop, Nueva  
Victoria, I Región**

Year:  
**2016**

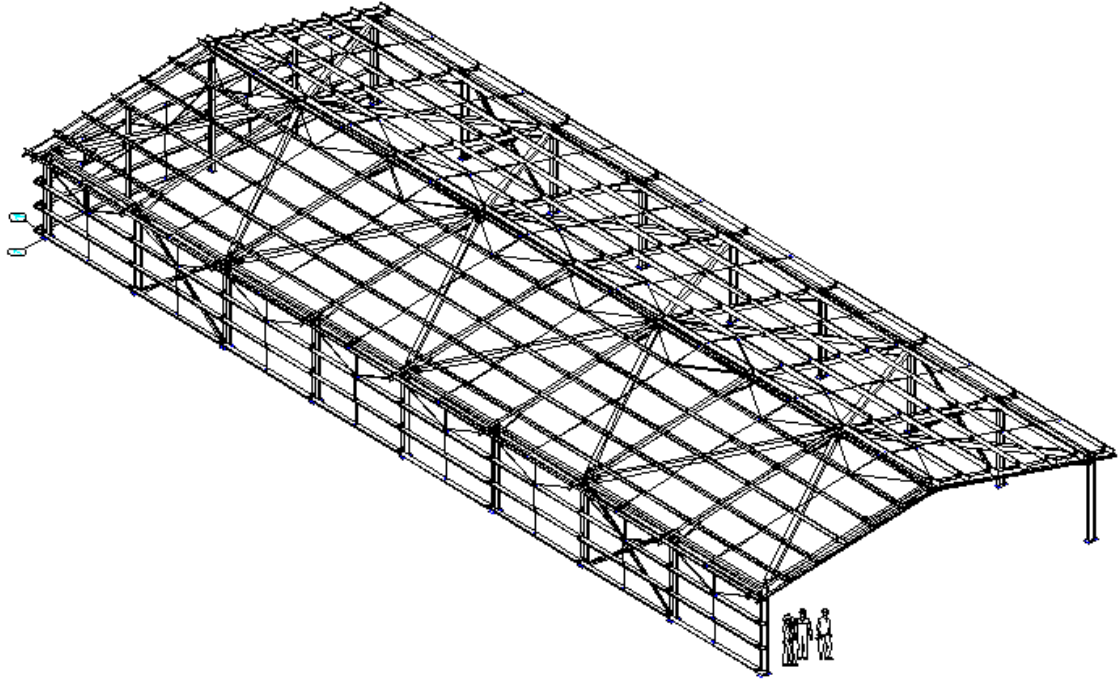


### **Features**

Multidisciplinary project involving the design of settling pools, truck wash workshop, warehouses, etc.

Disciplines such as cost estimation, mechanical-piping, electrical, instrumentation, architecture, and structures were included.

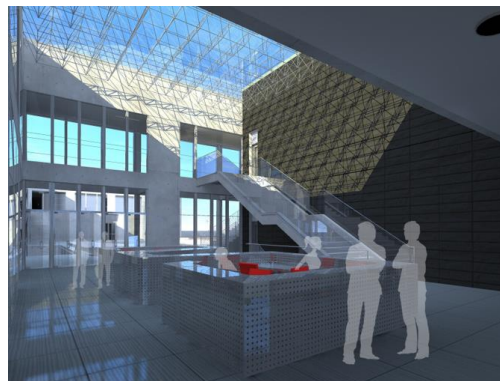
Project presentation to the Municipality was also included.



Client: **Dessau para Cobra**  
Project: **Design of Buildings for Electrical Substation Cerro Navia 220 kV**  
Investment: **US\$ 1.600.000**  
Year: 2010

#### Features

Development of structural engineering (including fabrication drawings), electrical, and architectural engineering for the design of steel buildings for the electrical substation.



Client: **Finning**  
Project: **Technical Training Center Antofagasta**  
Year: **2010**

#### **Características**

Development of Multidisciplinary Engineering for this building, including all engineering disciplines: Structural Civil Engineering, Architecture, Electrical Engineering, Instrumentation and Control, Mechanical Engineering, Fire Engineering, Landscaping, Cost and Scheduling Engineering, Climate Engineering, Gas Engineering, Lighting, Soil Mechanics, Sanitary-Piping Engineering, Road Engineering, Topography, as well as Acoustic Engineering.