

Metros & Railways

Rails that shorten distances

CESEL S.A. is a consulting company with more than 40 years of experience in developing engineering with several integrated disciplines. Its headquarters are located in Peru and it has branches and offices in several Latin American countries. CESEL develops studies, designs and engineering projects; studies, works and assembly supervision; factory inspection; environmental studies and comprehensive management of engineering and construction projects through its twelve operating divisions and six technical departments. The Metros and Railways Division is described as follows:

Services

- Pre-feasibility.
- Feasibility.
- Final engineering study.
- Work supervision.
- Factory inspection.
- Project management (EPCM).
- Technical files revision and approval.
 - Basic engineering study.
 - Seismic risk study.
 - Civil works.
 - Project electromechanical systems.
- Preliminary designs (preliminary plans).
- Demand studies.
- Detail design.
- Quality assurance.
- Integrated Management System.

Specialties

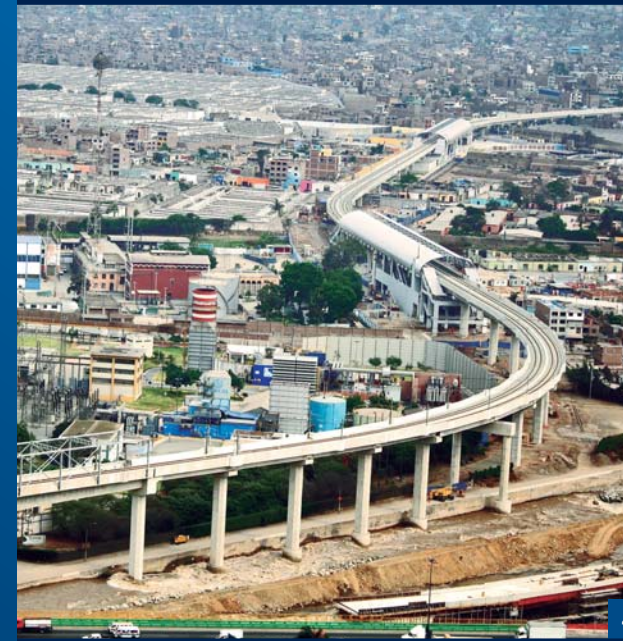
- Topography.
- Geology/Geotechnics.
- Hydrology/Hydrogeology.
- Seismic risk.
- Demand study.
- Architecture.
- Structures.
- Sanitation.
- Power supply.
- Railroad track.
- Signaling and automation.
- Catenary.
- Telecommunications.
- Passengers control.
- Auxiliary equipment.
- SCADA system.
- Low voltage.

Software

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|-----------------------|-----------------|-------------|
| ▪ SAP 2000. | ▪ Tecat Plus. | ▪ Feflow. |
| ▪ Digsilent. | ▪ Primavera P6. | ▪ Rocplane. |
| ▪ Revit Architecture. | ▪ Ms Project. | ▪ Rocfall. |
| ▪ Revit Structure. | ▪ Plaxis. | ▪ Swedge. |
| ▪ 3D Max. | ▪ Midas 3D. | ▪ Unwedge. |
| ▪ PLS Cad. | ▪ DIPS. | |

Areas

- Transport demand study.
- Alternatives multi-criteria evaluation, route plan and model interchange.
- Viaducts, cut-and-cover trench and tunnels analysis and design.
- Electromechanical equipment and rolling stock technical characteristics; including rails, catenary, signaling, control and communication systems, power supply, passenger stations, maintenance depot, shops and electric substations.
- Institutional framework for metro network management and operation.
- Civil works and electromechanical system assembly supervision.
- Factory inspections and testing.
- Verification of equipment arrival to port.
- Project management.



- 1 Viaduct cap beams assembly.
- 2 Section 1 commissioning tests.
- 3 Passengers station. Internal view.
- 4 Section 2 viaduct. It connect the Center of Lima to San Juan de Lurigancho.
- 5 Pre-fabricated plant, Bayovar.
- 6 La Cultura passengers station.
- 7 Concrete pouring in viaduct footing.
- 8 Basic network of the Metro of Lima and Callao.
- 9 Railroad track assembly and concrete pouring in the passengers station.

Projects

■ Electric mass transport system of Lima and Callao. Line 1, Section 1: Villa El Salvador - Av. Grau, 22 km. Final and detail design supervision. Supervision of the overhead road and 9 stations construction, as well as the electromechanical equipment, control and telecommunications, signaling, testing and commissioning. Peru.

■ Electric mass transport system of Lima and Callao, Line 1, Section 2: Av. Grau - San Juan de Lurigancho, 12.4 km of overhead viaduct. Work supervision and control for developing the technical file and executing the civil and electromechanical works, 10 stations, yard and shop, as well as the electromechanical equipment, passengers control telecommunication, signaling, testing and commissioning. Peru.

■ Complementary study of the network of the Metro of Lima. Transport demand analysis, alternatives multi-criteria evaluation, route plan, technical characteristics, economic-financial analysis. Peru.

■ Determination of the basic network of the Metro of Lima in the first 5 metro lines, 144.4 km length, 122 stations. Lima and Callao, Peru.

■ Supervision of studies, civil works, electromechanical works, rolling stock, train driving automatic system, tests and commissioning of underground line 2 (27.3 km) and line 4 branch (7.8 km) of the Metro of Lima and Callao (in execution). Peru.

