RICHWELL
ENGINEERING LLC

RICHWELL ENGINEERING

Rich in know how, rich in success

VISION

To promote the Well being through Rich engineering knowledge.

MISSION

We provide total engineering solutions, creating lasting value for our customers.

RICHWELL ENGINEERING

We create value by providing comprehensive engineering solutions.

ABOUT US

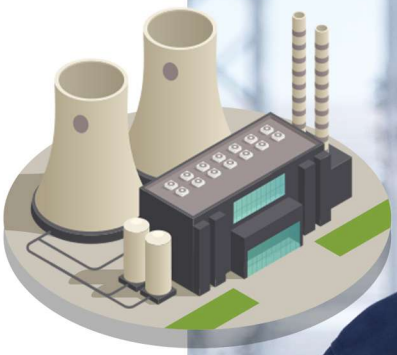
"Richwell Engineering" LLC, established 2012, is a leading Mongolian engineering and construction company specializing in the energy, infrastructure, mining, and manufacturing sectors. We provide end-to-end professional services, including engineering design, cost estimation, construction, installation of power transmission lines and substations, material and equipment procurement, project management, and technical consultancy.

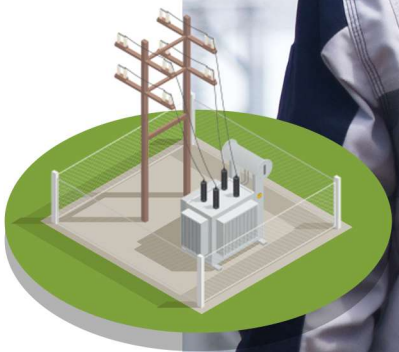
With a dedicated team of over 100 highly skilled engineers and technical experts, we are committed to delivering integrated engineering solutions that leverage modern methodologies and advanced technologies. Our mission is to create long-term value and drive sustainable development by contributing meaningfully to Mongolia's infrastructure and energy sector advancement.

As a trusted partner, Richwell Engineering collaborates with reputable international firms to bring global best practices to every project. By integrating green engineering principles, fostering innovation, and employing precision tools such as Building Information Modeling (BIM), we ensure the highest standards of safety, quality, and efficiency across all our operations.

SERVICES WE OFFER

- **DESIGN**
- **ENERGY CONSTRUCTION**
- **RELAY PROTECTION AND AUTOMATION**





We provide total engineering solution, creating value to customer

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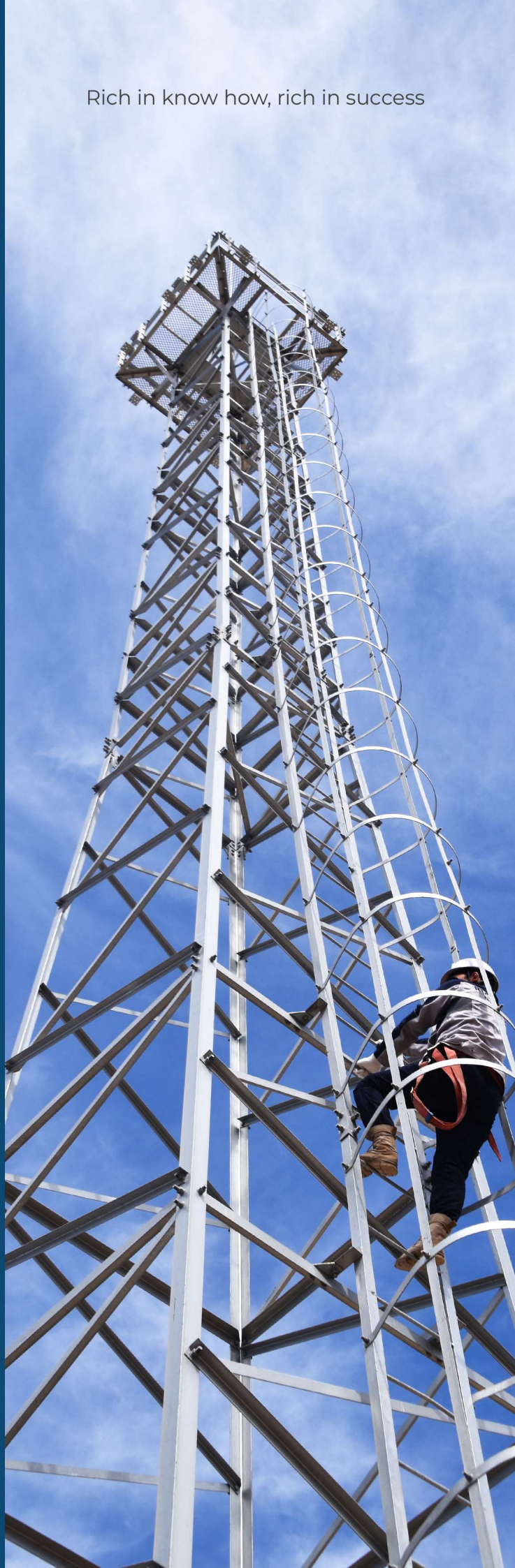
- Feasibility studies and detailed design for energy sources and engineering network;
- Comprehensive design of civil and industrial buildings;
- Installation of 0.4–110kV overhead and cable power transmission lines and substations;
- Solutions for battery energy storage systems and reactive power compensators;
- Installation, testing, and commissioning of relay protection, automation, and industrial process automation systems;
- Development of modern, standards-compliant solutions in cooperation with internationally experienced companies, and high-quality translation of design documentation.



ENGINEERING AND DESIGN

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Since its establishment, the Engineering Design Department of Richwell Engineering LLC has been delivering professional services in engineering design and consultancy for construction and infrastructure development, as well as conducting feasibility studies for energy sources, heating systems, and power supply.

Backed by a team of highly experienced experts, engineers, and technical staff, we offer comprehensive engineering solutions using modern technologies. Our services include architectural and master planning, detailed engineering design, author's supervision, and the preparation and submission of feasibility studies.

- Engineering design of infrastructure and utility network
- Engineering design and feasibility studies (FS) of heating and power plants
- Urban planning, construction, and master planning
- Author’s supervision of construction projects
- Design of civil and industrial sturcutres
- Design of relay protection, automation and industrial automation

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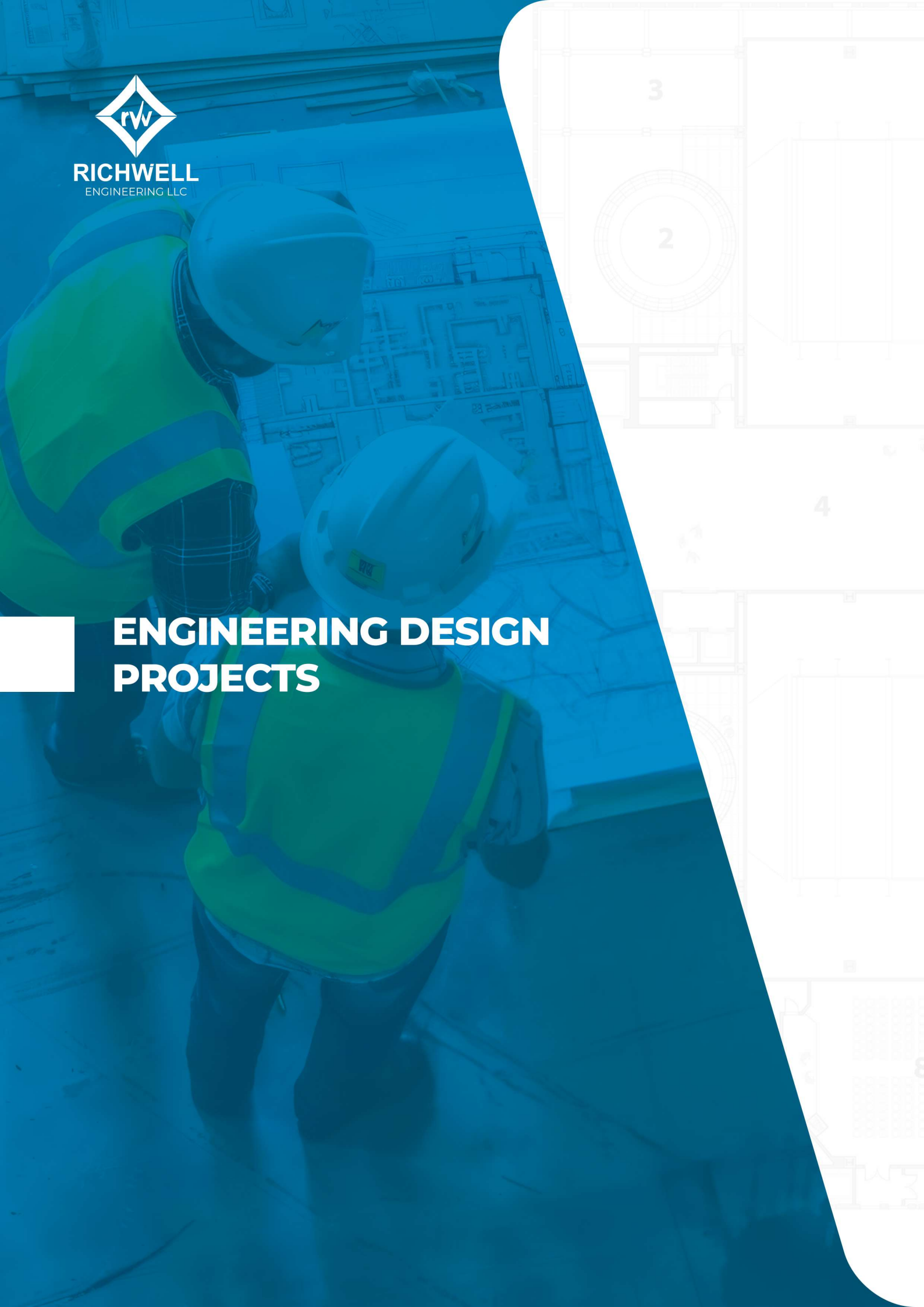


ENGINEERING DESIGN PROJECTS

Project Name:
Design of a Peak Load Gas Heat Source with a Capacity of 80Gcal/h to be built at the Denjiin Myanga Sub-Center.

Client: Asian Development Bank

Project Brief:
This project involved the construction of a high-capacity Heat Distribution Center and Connection of the Denjiin Myanga Sub-center to a centralized heating supply system. The project aimed at operating a peak load gas-fired heating source in conjunction with a centralized network, providing an independent heating solution during peak load periods.

Completed tasks:
Completed a comprehensive design of the newly planned 80Gcal/h gas thermal power plant for the Denjiin Myanga Sub-Center.

Project name:
Darkhan City Ice Hockey Arena building.

Client: Ministry of Construction and Urban Development

Project brief:
Design of a sports complex with a 764-seat Winter Sports Arena (Ice Hockey Arena) and an ice rink that operates year-round.

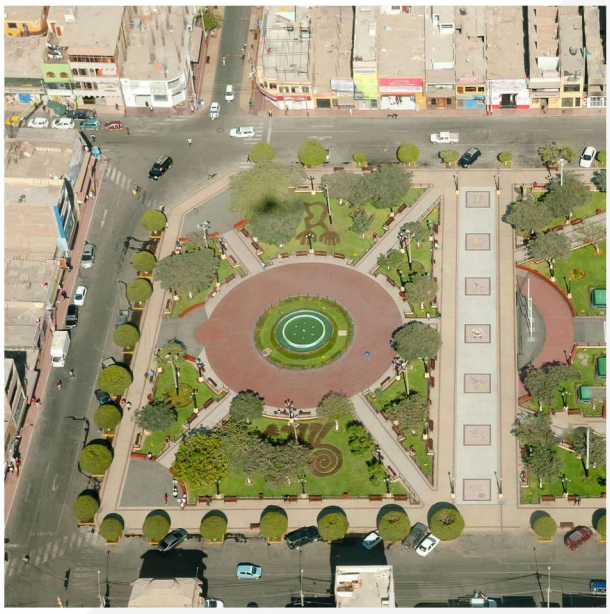
Completed tasks:
Developed a comprehensive design for the sports complex with an ice rink that meets international standards, with a modern design and energy-efficient cooling equipment, for the Darkhan Hockey Arena building.

Project name:
Design of a Heating plant under the "ZALUUS-1" residential project in the area of Moringiin Davaa

Client: Ministry of Construction and Urban Development

Project brief:
Design of a 100MW heating plant to provide customers near the Moringiin Davaa area with their own independent heating source, independent of the central heating supply system

Completed tasks:
Design of a complete heating plant with a capacity of 100MW



Project Name: Urban Plaza

Client: Asian Development Bank

Project Brief:
Design of the Urban Plaza landscaping on a 1.3-hectare area, located in the 9th Khoroo of Songinokhairkhan District, within the Bayankhoshuu Sub-center.

Completed Tasks:
Designed the landscaping for the 1.3-hectare area, creating a convenient environment for organizing public events and leisure activities. This includes green spaces, statues, monumental structures, and public restrooms.

Project Name:
110/10 kV Substation and Overhead Power Line Design

Client: "Naanova Green Energy Mongolia" LLC

Project Brief: Design of a 110/10 kV substation and overhead power lines to supply electrical power to a Waste Incineration Plant

Completed tasks:
• Expansion of the 110 kV overhead distribution facility of the Buyant-Ukhaa substation with 2 outlets;
• 8.6 km of 110 kV 2-circuit overhead power transmission line;
• Completed the design drawings of the 110/10 kV substation with a 2x16 MVA capacity

Project Name:
Supply and Installation of Solar Power System Equipment at Mobicom Telecom Station.

Client: Mobicom Corporation LLC

Project Brief:
Design of a charge collection station with 34 solar monofacial panels with a capacity of 445W to ensure the continuous and stable operation of a remote data transmission station.

Completed tasks:
Conducted estimation and carried out a comprehensive design of renewable energy sources.

Project Name:
Infrastructure Design of Sharkhad Sub-Center

Client: Governor's Office of the Capital City

Project Brief:
Comprehensive infrastructure design for a 250-hectare area located in the 89th, 10th, 17th, 19th, and 24th districts of Bayangol District, Ulaanbaatar.

Completed tasks:

- Complete design drawings for 7.7 km of road
- Complete design for 0.73 km of flood drainage canals
- 1 complete design for a retention pond
- Complete design for 19 km of rainwater runoff drainage systems
- Complete design for 9.2 km, ф150мм-300 мм of clean water pipelines
- Complete design for 4.4 km, ф200-300 of wastewater pipelines
- 1 complete design for pumping station (Q = 4600 mi/h)
- 2 complete designs for water reservoirs with a capacity of 1000 mi
- Complete design for 6.5 km heating pipelines (diameters 200 mm - 600 mm)
- 9 complete designs for Water and Heat Distribution Center (WHDC)
- Complete design for 10 km of fiber optic cable
- Complete design for 16 km of ducting (4+0) 110 mm
- 1 complete design for data center
- 1 complete design for 25-30-meters tower
- Complete design for 24.6 km of 10 kV power lines
- 2 complete designs for 10 kV distribution facilities
- 7 complete designs for 10/0.4 kV closed substation

Project name: Feasibility study, design of the Heating Plant and Pipeline Network for Khanbogd thermal power plant

Client: Governor's Office of Umnugobi province

Project Brief: Feasibility study (FS) and comprehensive design for the centralized heating supply network and a 15 MW thermal power-plan plant in Khanbogd soum.

Completed tasks:
• Feasibility study of a 15MW thermal power plant
• Complete design of a 15MW thermal power plant
• Complete design of a 26km thermal power network
• Complete design of 9 WHDC systems

Project Name:
Design of the 2nd Circuit Network and Hot Water Supply, and External Engineering Network for Water and Heat Distribution Center (WHDC) system in Bayankhongor soum, Bayankhongor province

Client: Governor's Office of Bayankhongor province

Project brief:
The project is being implemented within the framework of the project to build heating stations in 10 provincial centers, and the main goal of the program is to create a reliable heating source, ensuring year-round heating and hot water supply for residents, while also reducing air pollution.

Completed Tasks:
• Design drawings for the external connections, clean water supply, and sewage system for the heating plant building
• Design and budgeting for the external engineering network of 8 designs and budgeting for Water and Heat Distributions Centers (WHDC) at the heating plant

ENERGY CONSTRUCTION AND INSTALLATION

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Since 2012, Richwell Engineering LLC has successfully delivered major projects in the field of energy construction and installation. Our project portfolio includes the implementation of 0.4–110 kV overhead power transmission lines (OPTL), substations, thermal power plants, boilers and furnaces, heating network systems, and industrial automation solutions.

Construct up to 150 km of overhead power transmission lines per year Build four substations annually, with capacities ranging from 10 to 200 MVA Install boilers/furnaces and their automation systems Develop heating network systems with pressures between 16–40 kg/cml Construct and install heat distribution stations (HDS)

We have the technical capacity and resources to:

- Electricity transmission and distribution networks, substations
- Construction project management
- Assembly and installation of heating plants, heating network system, and energy facilities
- Planning and supervision of construction works
- Industrial process automation
- Quality control of construction works
- Compilation of construction documentation
- Assembly and installation of furnace automation systems

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CONSTRUCTION PROJECTS

Project Name:
Turnkey Installation of Static Var Generator (SVG) Equipment

Client: Asian Development Bank and the Ministry of Energy

Project Brief:
Supply, installation, and commissioning of a 10 MVar Static Var Generator (SVG) for the 110 kV system of the "Telmen" substation in Zavkhan province, including commissioning and adjustment of the equipment.

Completed Tasks:
- Installation of a 10 MVar voltage adjustment Static Var Generator (SVG) for the 110 kV system
- Assembly and installation of a 16 MVA power transformer
- Testing and adjustment of the relay protection for the power transformer and SVG equipment

Project Name: Construction and installation of a 50 MW Solar Power Plant, 110 kV overhead power transmission line (OPTL), and 110/35 kV Substations with 2*30 MVA Capacity for SunSteppe LLC of Gobisumber province

Client: SunSteppe LLC

Project brief:
The solar power plant being built in Choir, Gobisumber province, is a project that has introduced new techniques and technologies in its field and implemented in accordance with international quality and safety standards, ensuring high-level performance and operational safety.

Completed Tasks:
- Assembly and installation of a 50 MW solar power plant
- Assembly and installation of a 110 kV overhead power transmission line (OPTL)
- Assembly and installation of 110/35 kV substation with 2*30 MVA capacity
- Assembly and installation of a 35 kV closed distribution facility

Project Name:
Assembly and installation of a 15 MVar Voltage Adjustment SVG Equipment and Outdoor substation 10 kV Expansion Equipment for the Outdoor Power Supply of the Erdenet Mining Corporation State-Owned Enterprise (SOE) Autogenous Grinding Section Expansion

Client: Erdenet Mining Corporation SOE

Project brief:
Supply, installation and configuration of 15Mvar Static Var Generator (SVG) equipment for the 110kV system of the 110/35/10kV “Kharkhorin” substation in Uvurkhangai province.

Completed Tasks:
- Installation of a 15 MVar Static Var Generator (SVG) for voltage adjustment in the 110 kV system busbar
- Extension of the 110 kV system busbar
- Assembly and installation of a 16 MVA power transformer
- Assembly and installation of relay protection for the power transformer and SVG equipment

Project name:
Construction of 110/10 kV Khuchit Shonkhor substation with a capacity of 2x40 MVA in Chingeltei district of Ulaanbaatar city

Client: Ministry of Energy, National Electricity Transmission Network State-Owned Joint Stock Company

Project brief:
The project was implemented to create technical opportunities for households in the Denjiin Myanga area of Chingeltei district to enable the use of electric heaters that will support the reduction of air pollution in Ulaanbaatar city.

Completed tasks:
110/10 kV substation with a capacity of 2x40 MVA, control building, overhead power transmission line (OPTL) with 110 kV 2-circuit, and commissioning, testing and adjustments of relay protection testing work were completed and handed over a turnkey.

Project Name:
Upgrading and improvement of 6/0.4 kV electricity distribution network in Bayan-Undur soum, Orkhon province

Client: Energy Project-2

Project brief:
The project was implemented under the Energy Project-2 with financing from the World Bank.

Completed tasks:
8971 reinforced concrete poles, 268 km SIP-2A transmission wires, 14,484 smart meters for households in ger districts, 877 smart meters for private entities, 9 new overhead substations, and 60 residential electricity supply upgrading works were completed.

Project name: Construction of the “Sergelen” substation of 220/110/35 kV with a capacity of 2*125 MVA for the power supply of the new city “AeroCity” in the Khushig Valley, Sergelen soum, Tuv province

Client: Ministry of Energy

Project brief: Construction, installation, testing and commissioning of the “SERGELEN” substation with a capacity of 220/110/35 kV, 2*125MVA to provide power supply to the newly planned AeroCity, Logistics Center, New-Zuunmod, and Maidar cities in the Khushig Valley near the “CHINGIS KHAAN” International Airport located in Sergelen soum, Tuv province

Completed Tasks:

- Assembly and installation of equipment for the 220/110/35kV overhead distribution facility, including testing and adjustments
- Complete relay protection installation, equipment setup, and testing adjustments
- Construction of the substation’s access roads and drainage channels
- Construction of the substation’s control building.

Project name:
Installation of primary equipment for the 15 MW Bukhug Solar Power Plant, Sergelen soum, Tuv province

Client: MCS International LLC

Project brief:
Connecting a 15 MW solar power plant located in Sergelen soum, Tuv province, to the integrated energy system.

Completed Tasks:
Installation of primary equipment for a 110/10 kV substation with a capacity of 2x16 MVA.

Project Name: Ash Disposal System for Baruun-Urt Thermal Power Plant

Client: Korea District Heating Corporation, Korea International Cooperation Agency (KOICA)

Project brief: The Baruun-Urt Thermal Power Plant has a capacity of 13 Gcal/h and was built in 2013 under a grant from KOICA, with the involvement of South Korea's Daesung Global Network, Dova Engineering, and Korea District Heating Corporation. After a post-project inspection was conducted jointly by KOICA and the Korea District Heating Corporation, it was decided to take measures to improve the ash transmission system, fire water system, and occupational health and safety at the plant.

Completed Tasks: The scope of the project included the design of the thermal power plant's ash disposal system and ash bunker, supply of materials and equipment, construction and installation, as well as testing, adjustment, and handover. Moreover, in order to improve the safety of the thermal power plant, additional work was carried out including the installation of fire water insulation, heater cables, fire extinguishers, and the installation of additional safety stairs and railings.

Project name: Installation and commissioning of the 110/11kV substation and 11/0.4kV overhead power transmission line (OPTL) within the scope of "NARIIN SUHAIT" - BAYANKHUNDII 110KV ELECTRICITY TRANSMISSION OVERHEAD LINE SUBSTATION PROJECT

Client: "MCS International" LLC

Project brief: The 110/11kV substation consists of 2 main transformers and 2 sections. A complete installation and commission of the 7.8 km overhead power transmission line (OPTL) from the 110/11kV substation to the employee recreation facility of "Erdene Mongol" LLC was carried out.

Completed tasks:

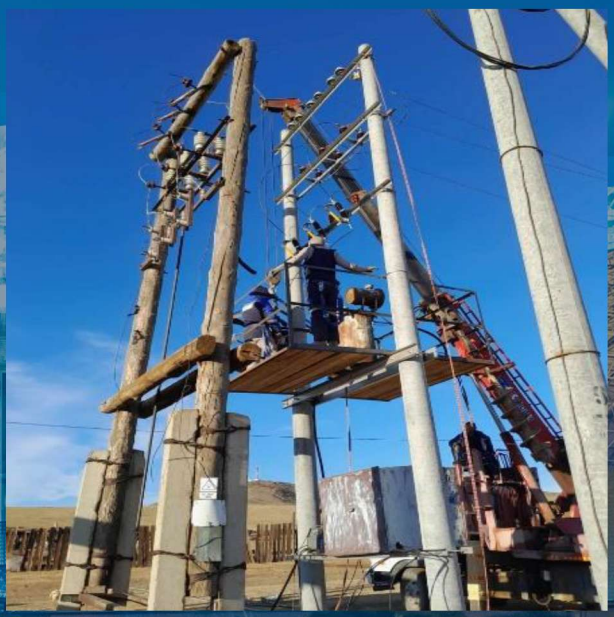
- Assembly, installation, and testing of substation's metal structures and primary circuit equipment
- Assembly and installation of 11 kV overhead power transmission lines
- Assembly and installation of 11/0.4 kV 1000 kV substation

Project Name:
Upgrading and improvement of the 10-0.4 kV Electricity Distribution Network in Arvaikheer soum, Uvurkhangai province

Client: Ministry of Energy

Completed tasks:

- 0.4 kV overhead power transmission line (OPTL) substation, 10 kV overhead power transmission line (OPTL) substation, 0.4 kV Electricity transmission cable line (ETCL) substation,
- Relocation of overhead substation
- Metering of households in ger districts, residential households and entities
- Upgrading of internal electrical supply in old apartments
- Replacing the switchgear boxes at the storeys of residential apartments
- Improving the power supply
- Expanding the capacity of overhead substations and transformers
- Replacing wooden supports of the substation
- These tasks were successfully completed under the project.



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RELAY PROTECTION AND AUTOMATION

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Richwell Engineering LLC remains at the forefront of global advancements in relay protection and automation control systems, continuously introducing innovative technologies and solutions across various sectors in Mongolia.

For the first time in the energy system of Mongolia, a differential relay protection solution was introduced along the four-terminal of the 110 kV overhead transmission line, and the SEL-411L relay was installed and commissioned, covering 7 substations that are system generators for Overhead power line (OPL)-109 and SH-110.

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In addition, we successfully implemented NR Electric's relay protection, automation systems, HMI software, and SCADA monitoring and control solutions at the 110/10kV, 2Ч40 MVA "Shonkhor" Substation, operated by the National Electricity Transmission Network State-Owned Joint Stock Company. NR Electric is a globally recognized leader with over 20 years of experience in the development of relay protection and automation technologies.

We officially provide all services related to the supply, installation, commissioning, testing, and maintenance of NR Electric's relay protection and automation system products.

We deliver services for calculation solutions for large-capacity electric energy storage systems and reactive power compensators integrated into the power system, and provide assembly, installation, testing, and adjustment services.

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(976) **11-311425**
info@richwell.mn
www.richwell.mn
1103, 11th floor, City tower, 8 khoroo, Sukhbaatar district
Chinggis square 5, 14200, Ulaanbaatar city, Mongolia