CASE STUDY

Structural Steel Construction Project

STEELPRO GROUP
TRUSTEDFACTORY

DOMESTIC BRIDGE CONSTRUCTION

ZHANG JINGGAO YANGTZE RIVER BRIDGE

The Zhang Jinggao Yangtze River Bridge, currently the world's largest suspended bridge under construction in terms of span, places extremely high demands on the performance of steel materials to ensure its safety and reliability under extreme conditions.

For this project, we provided 35,000 tons of high-strength bridge steel, primarily for the tower and steel beam components. This product stood out for its exceptional strength, toughness, and weldability, meeting the stringent material requirements of the project. With precise technical support and efficient delivery assurance, we completed the high-quality supply on schedule, providing solid backing for this globally significant engineering landmark.

DOMESTIC BRIDGE CONSTRUCTION

HÙ-SŪ-TŌNG YANGTZE RIVER ROAD-RAIL BRIDGE

The Hù-Sū-Tōng Yangtze River Road-Rail Bridge, the world's first cable-stayed bridge with a main span exceeding 1,000 meters designed for both road and rail use, has won the prestigious George Richardson Award at the International Bridge Conference, recognizing its exceptional achievements in design, construction, and technological innovation.

As the largest steel supplier for the bridge, we provided 77,000 tons of high-strength bridge structural steel and 120,000 tons of slag powder. These materials, known for their high strength, excellent toughness, and superior processing performance, met the bridge's stringent technical requirements. Thanks to our outstanding product quality and reliable delivery, we were honored with the "Excellent Supplier" award. Our contributions helped ensure the successful operation of this monumental project, which integrates both rail and road transport, and further elevated the global standing of Chinese bridge engineering.

DOMESTIC BRIDGE CONSTRUCTION

HONG KONG-ZHUHAI-MACAO BRIDGE

The Hong Kong-Zhuhai-Macao Bridge, the world's longest sea-crossing bridge, set extremely high standards for steel quality.

We supplied 21,000 tons of premium bridge steel plates, all used for the steel box girders connecting the bridge piers—key structural components of the bridge. With plate widths exceeding 4 meters and flatness deviation controlled within 2 millimeters, the technical challenges were immense. Leveraging advanced manufacturing processes and stringent quality control, we delivered on time and to the highest standards, providing robust support for the bridge's durability and exceptional performance. This achievement forged the "steel backbone" of this landmark century project.

DOMESTIC BRIDGE CONSTRUCTION

SHENZHEN-ZHONGSHAN LINK

The Shenzhen-Zhongshan Link, a world-class engineering marvel integrating "bridge, island, tunnel, and underground interchange," places extraordinary demands on bridge steel, particularly in flatness control, setting new national standards.

For its critical sea-crossing component, the Zhongshan Bridge, we supplied 93,000 tons of bridge steel, making us the largest steel plate supplier for the main bridge. With plate widths reaching 4.4 meters and flatness deviations required to be less than 2mm per meter, the technical challenges far surpassed those of previous bridge projects. Drawing on our experience from the Hong Kong-Zhuhai-Macao Bridge and expertise in bridge steel production, we optimized processes, innovated technologies, and swiftly delivered high-quality materials. This contribution supported the steady progress of the mega-project, showcasing the technological strength and efficiency of Chinese manufacturing.

DOMESTIC BRIDGE CONSTRUCTION

WENZHOU OUJANG NORTH MOUTH BRIDGE

The Wenzhou Oujang North Mouth Bridge is a crucial cross-river bridge linking the Ningbo-Dongguan Expressway, and it is one of the green highway construction demonstration projects by the Ministry of Transport. The steel requirements for the project focus on high-performance bridge steel materials, with stringent demands for large specifications, thin plates, and wide plates.

We supplied over 80,000 tons of bridge steel, including Q345qD and Q420qD grades.
To meet the high standards of the project, we optimized the rolling process and improved the cooling uniformity, ensuring that the steel plates met the design specifications for both shape and performance. As a result, the steel materials we provided achieved a first-pass qualification rate of over 99%, fully meeting the technical requirements of the bridge project and contributing to the successful completion and opening of the bridg

DOMESTIC BRIDGE CONSTRUCTION

DADU RIVER GRAND BRIDGE ON THE SICHUAN-TIBET RAILWAY

The Dadu River Grand Bridge on the Sichuan-Tibet Railway is the first major bridge on the railway's route into Tibet. Located in a complex geographical environment with a large span, the project demands extremely high specifications for the steel materials used.

We supplied 44,700 tons of Q370q and Q500q bridge steel for the project, with the Q500q steel, in particular, requiring thicknesses that exceeded existing standards. The maximum thickness reached 96mm, far surpassing the traditional 64mm limit for bridge steel.

To meet this challenge, we made multiple adjustments to our plans, optimized the steelmaking and rolling processes, and developed the world's first 96mm high-performance Q500q bridge steel. This innovation ensured the steel met the project's stringent engineering requirements, particularly in critical areas.

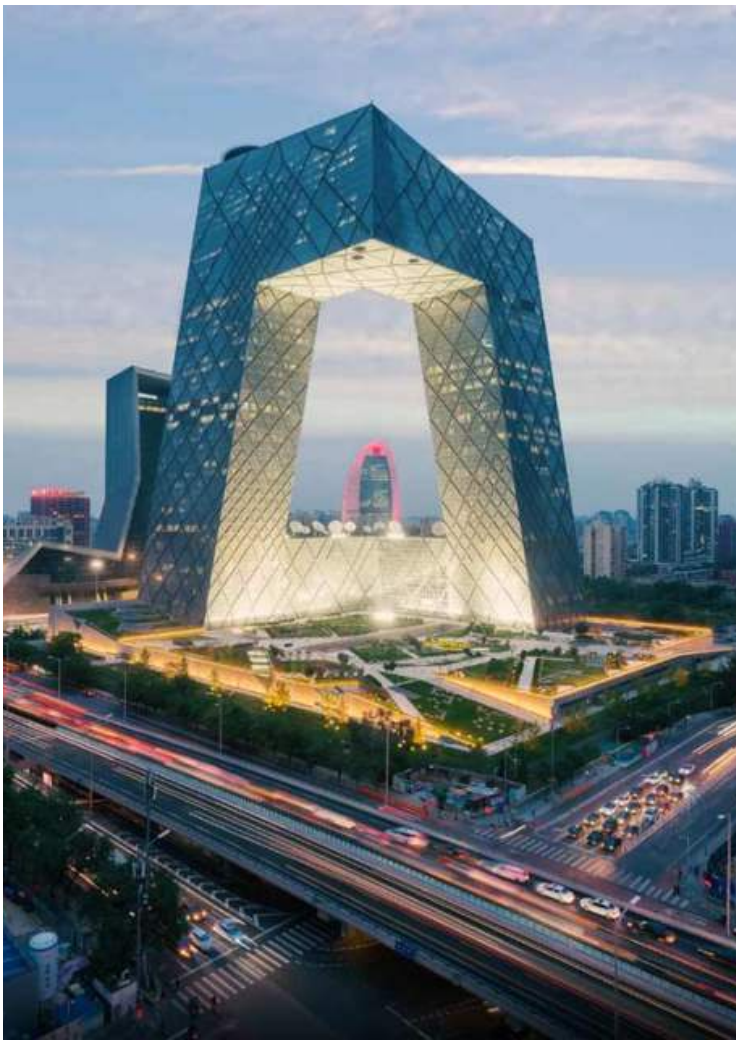
DOMESTIC HIGH-RISE & SUPER HIGH-RISE BUILDINGS

SHANGHAI WORLD FINANCIAL CENTER

The Shanghai World Financial Center, recognized globally as a landmark supertall building, stands at a height of 492 meters and is hailed as the "world's tallest flat-top building." Its construction demanded exceptionally high standards for steel strength, seismic performance, and quality stability.

For this iconic project, we supplied 32,908 tons of thick steel plates, including ASTM A572 Gr50 (Z25/Z35), SN490B/C, and Q345B grades.

DOMESTIC HIGH-RISE & SUPER HIGH-RISE BUILDINGS



NEW HEADQUATER OF CHINA CENTRAL TELEVISION (CCTV)

The CCTV Headquarters project, located in Beijing's Central Business District, is one of the city's iconic supertall buildings. It imposed exceptionally high demands on construction steel, requiring superior strength, seismic performance, and stability.

We supplied 45,951 tons of thick plates for the project, including Q345C/D (Z15-35), Q345GJC/D (Z15-35), Q390D (Z15-25), Q420D (Z15-25), Q460E (Z25-35), and ASTM A572 Gr50 (Z15-35). This contribution enabled the successful high-quality construction of the globally renowned "CCTV Headquarters," which was named one of the "Top Ten Architectural Wonders of the World" by Time Magazine. The project highlights the outstanding performance of our steel products in landmark buildings worldwide.

DOMESTIC HIGH-RISE & SUPER HIGH-RISE BUILDINGS

THE NATIONAL STADIUM "BIRD'S NEST"

The National Stadium, also known as the "Bird's Nest," was the main venue for the 2008 Beijing Olympics. With its unique appearance and complex steel structure design, it has become a globally recognized iconic landmark. The project required steel materials with exceptionally high strength and processing precision.

We supplied 10,341 tons of thick plates, including Q345C/D and Q345GJC/D (Z15-35) grades. Among them, Q345GJD (Z15-35) steel plates accounted for a significant portion, totaling nearly 9,000 tons.

Within just three months, we completed the feasibility study for the full domestication of structural steel for the project. We also established a stable supply by utilizing a newly commissioned 5-meter-wide thick plate production line, which had been in operation for only four months. These high-performance steels provided strong support for the large-span steel structure of the "Bird's Nest," showcasing our industry-leading technological capabilities. This project also helped establish global recognition for Chinese steel materials in the field of architecture.

DOMESTIC LARGE-SCALE PUBLIC BUILDINGS

SHANGHAI WORLD EXPO CHINA PAVILION

The China Pavilion at the 2010 Shanghai World Expo is a key landmark of the event, designed in the shape of the "Crown of the East" to showcase Chinese cultural spirit. The project required steel materials with high strength, exceptional durability, and excellent formability to meet the complex design requirements and high load-bearing standards of the building.

We supplied a total of 20,043 tons of thick plates, 1,367 tons of high-frequency welded H-beams, and 1,495 tons of rectangular tubes, including materials such as Q235B, Q345B (Z15-25), and Q345GJ (B/C) (Z15-25). The selected materials feature high strength, good toughness, stable welding performance, and outstanding seismic resistance, ensuring the building's safety, durability, and unique appearance.

DOMESTIC LARGE-SCALE PUBLIC BUILDINGS

SHANGHAI WORLD EXPO THEME PAVILION

The Shanghai World Expo Theme Pavilion is one of the key exhibition venues of the Expo, featuring a complex design that must meet high load-bearing and seismic requirements. The client had extremely high demands for the strength, toughness, and welding performance of the materials.

We supplied a total of 10,429 tons of wide and thick plates, 4,672 tons of steel pipes, 1,772 tons of rectangular tubes, and 683 tons of high-frequency welded and hot-rolled H-beams, including materials such as Q235B, Q345B (Z15-25), and Q345B/C. These materials possess high strength, good ductility, and stable welding performance, providing reliable support for the project and enabling the innovative design and durability of the building.

DOMESTIC LARGE-SCALE PUBLIC BUILDINGS

SHANGHAI WORLD EXPO CULTURAL CENTER

The Shanghai World Expo Cultural Center is a key permanent venue of the Expo, featuring a unique "flying saucer" design that showcases the fusion of innovation and art. The project required materials with exceptional strength, durability, and seismic resistance to support the complex structural design and large-span building requirements.

We supplied 29,964 tons of Q345B (Z15-25) and Q345GJB (Z15-35) thick plates, as well as 324 tons of Q235B steel pipes. These materials, with their excellent toughness, stable welding performance, and high load-bearing capacity, perfectly met the functional and aesthetic demands of the building, providing solid quality assurance for the venue.

DOMESTIC LARGE-SCALE PUBLIC BUILDINGS

SHANGHAI INTERNATIONAL CIRCUIT

The Shanghai International Circuit is China's first racetrack to host an F1 event. With its complex design and the need to meet the strict standards of international top-level competitions, the project required building materials with high strength, stability, and durability.

We supplied 12,000 tons of Q345B/C (Z15) thick plates, which, with their excellent toughness, seismic resistance, and outstanding weldability, ensured the safety and functionality of the grandstands, facilities, and other critical structures. These materials also supported the large-span design and complex engineering requirements, providing strong backing for this iconic international project.

DOMESTIC LARGE-SCALE PUBLIC BUILDINGS

YANQING WINTER OLYMPIC VILLAGE AND YANQING MOUNTAIN NEWS CENTER (PHASE 2)

The steel structure project for the Yanqing Winter Olympic Village and Yanqing Mountain News Center (Phase 2) is located in the Yanqing District of Beijing and serves as a key construction project for the 2022 Beijing Winter Olympics. The project includes facilities for athlete accommodation and media communication, making it highly significant.
The client required steel materials that could meet high-strength building demands while also withstanding the complex winter climate conditions.

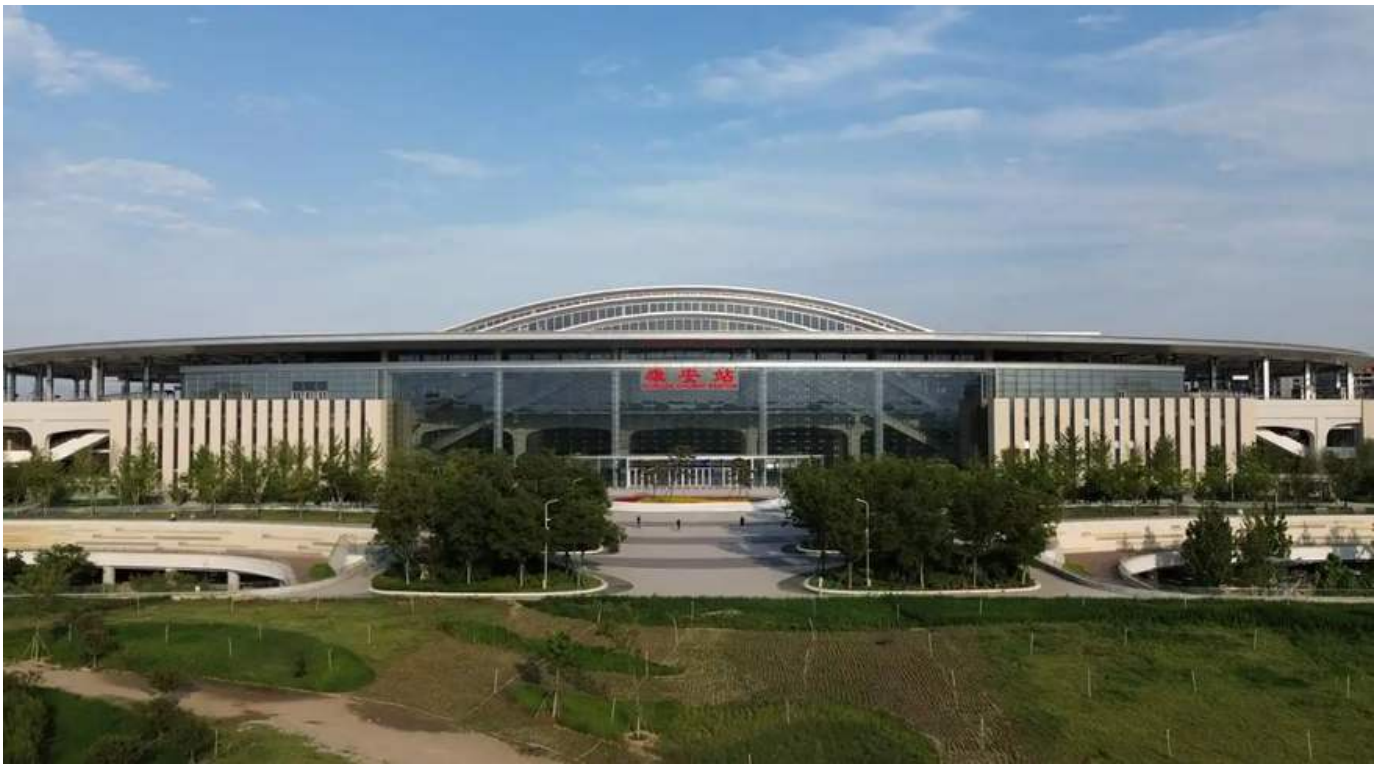
We supplied approximately 10,000 tons of Q345B steel, primarily used for core structures such as box columns, cruciform columns, and H-beam girders. With its excellent strength, toughness, and welding performance, Q345B steel was the ideal choice to meet the requirements of large-span, high-load buildings while ensuring efficient construction and project safety.

DOMESTIC INFRASTRUCTURE CONSTRUCTION

XIONG'AN HIGH-SPEED RAILWAY STATION

The Xiong'an High-Speed Railway Station, currently the largest high-speed rail station under construction in Asia, posed significant challenges in meeting the high-strength and large-scale structural requirements. To address these needs, we supplied approximately 400 tons of Q460GJD high-strength structural steel.

The project faced the challenge of meeting the demands of high-strength, large-scale building structures, while traditional low-strength building steels were no longer sufficient. The Q460GJD steel we provided offers excellent strength and toughness, capable of withstanding higher loads and meeting the complex architectural requirements of the Xiong'an High-Speed Railway Station. Not only does this steel meet high-strength standards, but it also boasts outstanding processing performance and fatigue resistance, making it the ideal choice for large-scale, high-strength building structures. This ensures the project can progress smoothly while meeting long-term safety and durability requirements.



OVERSEAS BRIDGE CONSTRUCTION

PELJEŠAC BRIDGE IN CROATIA

The Pelješac Bridge in Croatia, a flagship project under the "Belt and Road" initiative, serves as a vital link between the northern and southern parts of the country. With a total length of 2,440 meters, the bridge requires high technical standards.

We supplied over 31,000 tons of steel plates for its pile foundation and steel pipe composite piles. The materials provided include EN10025 grades S355N, S460N, and S460M structural steel plates, which feature exceptional strength, toughness, surface quality, and high inspection standards, meeting the project's stringent requirements. Our integrated support, from technical research and development to production and delivery, ensured timely completion, contributing to the successful opening of the bridge. This achievement fulfilled the long-held aspirations of the Croatian people and highlighted the outstanding capabilities and responsibility of Chinese manufacturing.

OVERSEAS BRIDGE CONSTRUCTION

EL-FERDAN DOUBLE WING SWING RAILWAY BRIDGE

The El-Ferdan Double Wing Swing Railway Bridge project on the Suez Canal in Egypt is a key initiative under the "Belt and Road" initiative, aiming to upgrade the existing bridge and build a new railway bridge, serving as a crucial transportation link between Asia and Africa. The client set stringent requirements for the steel materials, including high weather resistance, excellent surface quality, high flaw detection standards, and large unit weights.

The total steel used in the weather-resistant structural steel for the project is approximately 14,000 tons, with over 10,000 tons supplied exclusively by us. For steel plates with specifications of 80mm and above, we applied an innovative low-carbon composition design, meeting the requirements for high weldability and corrosion resistance. With our exceptional product quality and efficient delivery capabilities, we successfully completed the supply, providing solid support for the successful construction of the project.

OVERSEAS BRIDGE CONSTRUCTION

PADMA BRIDGE IN BANGLADESH

The Padma Bridge in Bangladesh is a key transportation hub under the "Belt and Road" initiative, spanning 4.16 kilometers. As the largest multi-purpose road-rail bridge in Bangladesh, it carries the hopes for local economic development and improved livelihoods.

We supplied 35,000 tons of high-performance bridge steel for the project, ensuring the stability and safety of its structure. The steel products, with exceptional strength, toughness, and corrosion resistance, met the high standards required for the bridge, providing reliable support for this complex cross-border engineering project. The successful completion of the "Dream Bridge" is a testament to the outstanding capabilities and quality of Chinese steel manufacturing.
4o mini

OVERSEAS BRIDGE CONSTRUCTION

CHINA-MALDIVES FRIENDSHIP BRIDGE

The China-Maldives Friendship Bridge is a landmark project under the "Belt and Road" initiative, symbolizing the cooperation between China and the Maldives. As the Maldives' first sea-crossing bridge, it spans 1.39 kilometers, connecting the capital Malé with the airport island and earning the nickname "Bridge of Life."
The project had extremely high requirements for steel, particularly in terms of corrosion resistance, high strength, and toughness, given the long-term use in a tropical marine environment.

We supplied approximately 12,000 tons of high-quality bridge steel for the project. The steel products, known for their excellent weather resistance, weldability, and stability, gained the trust of the client, ensuring the successful completion of the supply.
This project not only contributes to local transportation upgrades but also highlights our core competitiveness and technical expertise in the field of sea-crossing bridge steel.
4o mini

OVERSEAS LARGE-SCALE PUBLIC BUILDINGS

THE SAPPORO DOME

The Sapporo Dome is one of the key landmarks in Hokkaido, Japan. As a multi-purpose venue for both baseball and soccer, the project had stringent requirements for the strength, durability, and safety of its structural materials.

We supplied 3,500 tons of Q235B (Z25) thick plates for the project. These materials, known for their excellent resistance to lamellar tearing, high strength, and good weldability, effectively met the building's high load-bearing demands and complex design specifications. This provided a solid foundation for the stadium's stability and long-term durability.

OVERSEAS LARGE-SCALE PUBLIC BUILDINGS

VANCOUVER CONVENTION CENTRE

The Vancouver Convention Centre is a world-class landmark in Canada, serving as a premier venue for conferences and exhibitions. The expansion project imposed strict requirements on the environmental sustainability, load-bearing capacity, and design adaptability of the building materials.

We supplied 939 tons of 44W thick plates for the project. These materials, known for their high strength, excellent weldability, and durability, perfectly supported the large-span design of the structure. At the same time, they met the project's stringent standards for sustainable development and LEED (Leadership in Energy and Environmental Design) certification, providing reliable support for this advanced facility.
4o mini

OVERSEAS LARGE-SCALE PUBLIC BUILDINGS

BRAC UNIVERSITY CITY

BRAC University City, a renowned private university and significant landmark in Dhaka, Bangladesh, features a 13-story modern academic building constructed using a steel structure. The project has notable social and economic impact.

We successfully supplied high-strength, high-toughness structural steel for the project, primarily using S355M/ML and S460M/ML steel plates meeting the EN10025 standard, with thicknesses ranging from 80 to 120mm. The materials were required to meet stringent criteria for high strength, toughness, surface quality, and flaw detection standards.

By optimizing the composition design and strictly controlling the manufacturing process, we ensured the products met performance and quality requirements. We delivered all orders on time, supporting the successful progress of the project while highlighting our technical advantages and international competitiveness in key "Belt and Road" initiatives.

OVERSEAS INFRASTRUCTURE CONSTRUCTION

SUKI KINARI HYDROPOWER PROJECT

The Suki Kinari Hydropower Project is a key initiative within the China-Pakistan Economic Corridor (CPEC) and one of the first priority projects. The total demand for steel plates for the pressure pipes exceeds 16,000 tons. The client required high-strength, high-specification steel plates, including more than 3,000 tons of 800 MPa-grade steel plates and over 6,000 tons of 600 MPa-grade steel plates, meeting the highest global standards for hydropower station steel plates.

We supplied steel plates ranging in thickness from 24mm to 144mm for the 800 MPa-grade steel, with the 144mm thick crescent rib plates being the largest domestic size. Additionally, the branch pipe's thickness-to-diameter ratio reached 3.49%. Given the high technical requirements and tight delivery schedule, we leveraged our technical expertise and equipment advantages to quickly develop a reasonable production plan. This ensured that the first batch of steel plates was produced and delivered on time in less than three months, setting a domestic record for the fastest delivery of steel plates of this grade.

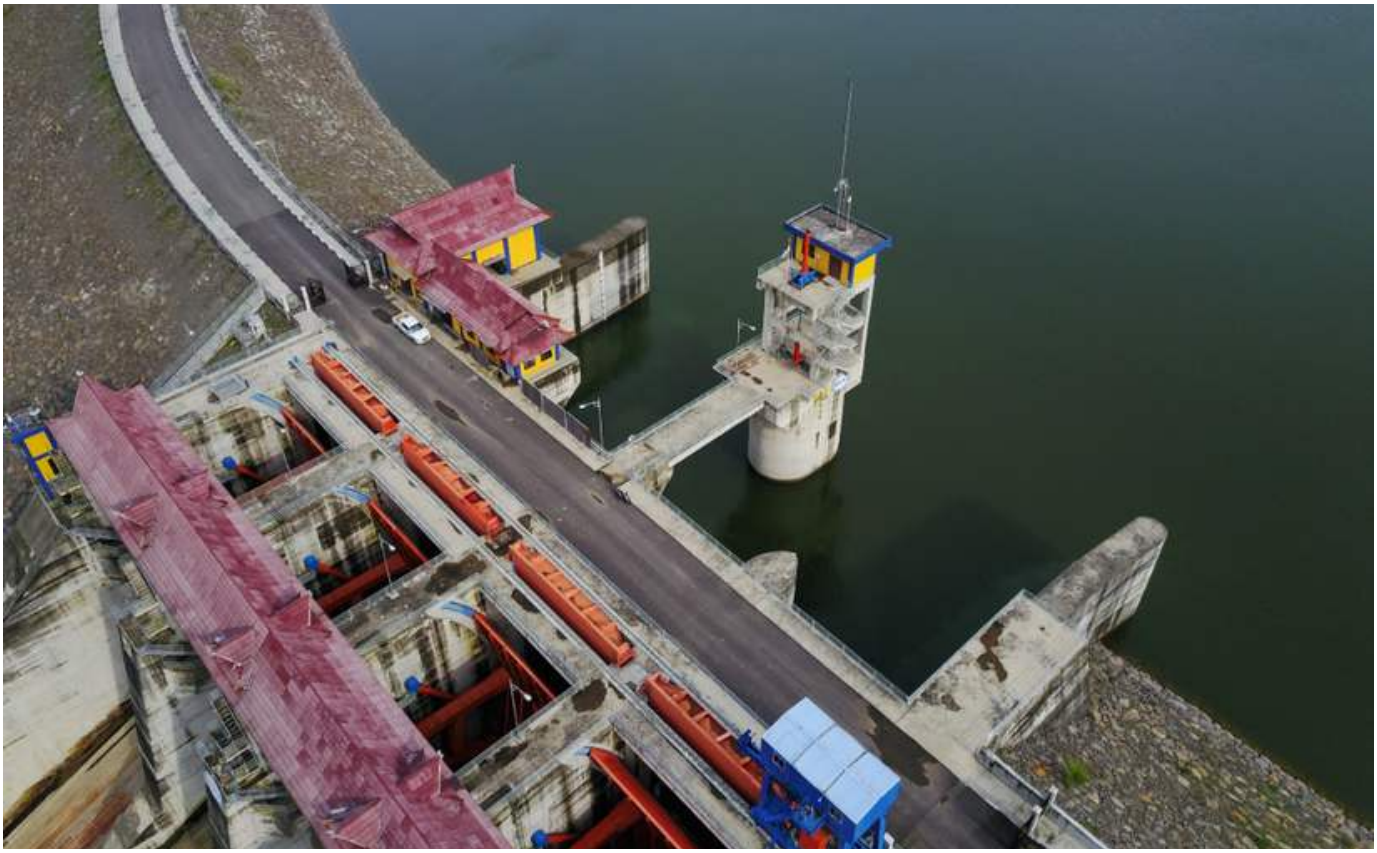
OVERSEAS INFRASTRUCTURE CONSTRUCTION

JATIGEDE DAM PROJECT

The Jatigede Dam project in Indonesia is a flagship infrastructure cooperation initiative between China and Indonesia, often referred to as Indonesia's "Three Gorges Project." Located in West Java, Indonesia, it is the country's largest hydraulic dam project, with a hydropower generation capacity of 110,000 kilowatts, providing electricity to approximately 5 million residents in the surrounding areas.

The client required high-quality hydropower steel, primarily for the construction of the dam's pressure pipelines.

We supplied 2,800 tons of hydropower steel meeting international standards, ensuring that the project met high technical requirements and providing reliable support for the construction of this critical infrastructure.



OVERSEAS INFRASTRUCTURE CONSTRUCTION

BANGLADESH GTOG PROJECT

The "Bangladesh GtoG Project" is a key demonstration project under the "Belt and Road" initiative, involving the upgrade and renovation of over 1,000 kilometers of Bangladesh's main power grid. The project aims to improve grid stability and reduce energy transmission losses. The client required high-strength steel that met international standards to fulfill the project's strict quality and environmental requirements.

We supplied 558 tons of S355J0 European standard angle steel, ensuring that the project’s demand for high-quality materials was met and that the delivery was completed on time.

THANK YOU!

CONTACT

Inspired by SteelPRO Group's success story?
Get in touch with us to start your journey toward outstanding results.

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