



CDHORIZON

NEO- SHORING SYSTEM



HORIZON CONSTRUCTION DEVELOPMENT LIMITED

As a subsidiary of Far East Horizon (03360.HK), Horizon Construction Development Limited ("CDHORIZON") is the largest equipment rental company in China, committed to providing one-stop comprehensive solutions of "product + service" for our clients in the construction and industrial sectors. Established in 2011, ranking the 14th in the IRN 100, CDHORIZON has built up an integrated network of 494 rental locations cumulatively serving over 230,000 clients in China and overseas.

In 2023, CDHORIZON was listed on the main board of the Stock Exchange of Hong Kong (SEHK), with the stock ticker 09930.HK. The company makes continuous investment on R&D and innovation, moreover, it has reached strategic cooperation with a number of first-tier domestic and foreign equipment manufacturers, well-known universities and scientific research institutes, possessing hundreds of patents of invention, and has been awarded "National High-tech Enterprises".

Global Top 100
Rental Service
Providers

No.14

Value of Total
Assets (RMB)

30⁺ Billion

Number of
Rental Locations

494

Cumulative
Number of
Clients

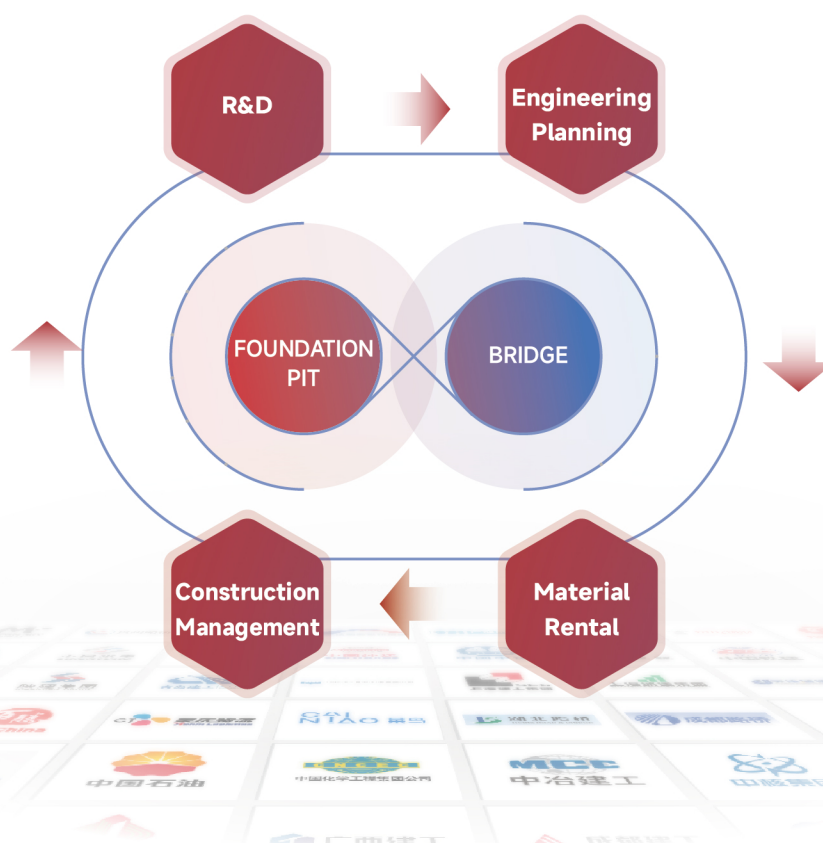
230⁺ Thousand



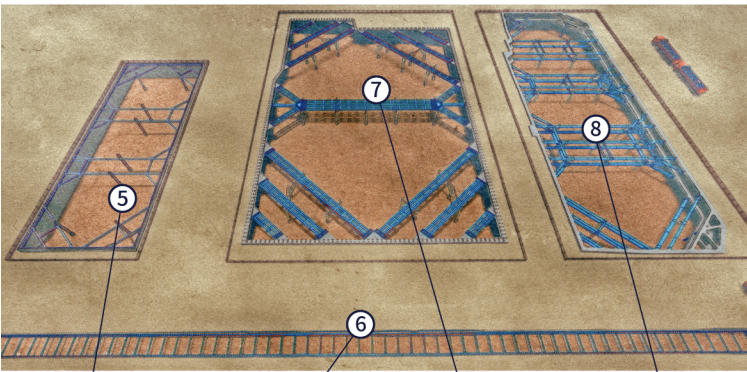
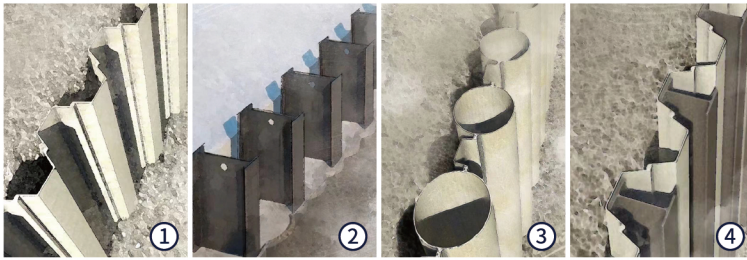
NEO-SHORING SYSTEM

Leading Rental Brand of Construction Steel Support and Bailey Truss Awarded by China Construction Materials Rental Contractor Association.

CDHORIZON neo-shoring system specializes in foundation pits and bridges construction, where we provide customers with one-stop solutions that integrate engineering planning, material rental and construction management of the shoring for either underwater or land foundations. Our main products include shoring systems such as Larssen piles, SMW, HLC and PLC piles, various strut systems of composite steel tube and H-beam, as well as bridge systems including steel cofferdams and steel trestles, etc. CDHORIZON's shoring system caters to industrial building, civil building, and various municipal engineering projects. Committed to ensuring safety, promoting sustainable construction, shortening project period, and reducing construction cost, CDHORIZON constantly upgrade the technological solutions. We have participated in **16,000+** projects serving **7,000+** customers.



GREEN AND SMART FOUNDATION PIT



① Larssen Pile

Using a pile driver or vibratory hammer to drive Larssen piles into the ground to form a recyclable steel continuous diaphragm wall that can retain soil and water, occupying minimal space and allowing for quick and simple construction; suitable for projects such as cofferdams and deep foundation pits.

② H-Beam

Inserting H-Beam into concrete to form a shoring wall; suitable for deep foundation pits in various soil strata up to a depth of 15 meters.

③ PLC Pile

Connecting Larssen piles and steel pipes together through interlocks to form a continuous diaphragm wall; suitable for cofferdams and deep foundation pits with a depth of up to 20 meters in various soil types.

④ HLC Pile

Combining Larssen piles with H-Beam to form a new type of continuous diaphragm wall; suitable for deep foundation pits with a depth of up to 15 meters.

⑤ Steel Support

Fully prefabricated and capable of applying prestress, providing excellent deformation control. Mainly used in foundation pits for municipal projects, industrial buildings, and bridge abutments.

⑥ Trench Shoring

Suitable for trench-type foundation pits with narrow width, shallow excavation depth, and confined space. Lightweight, quick to install, and cost-effective.

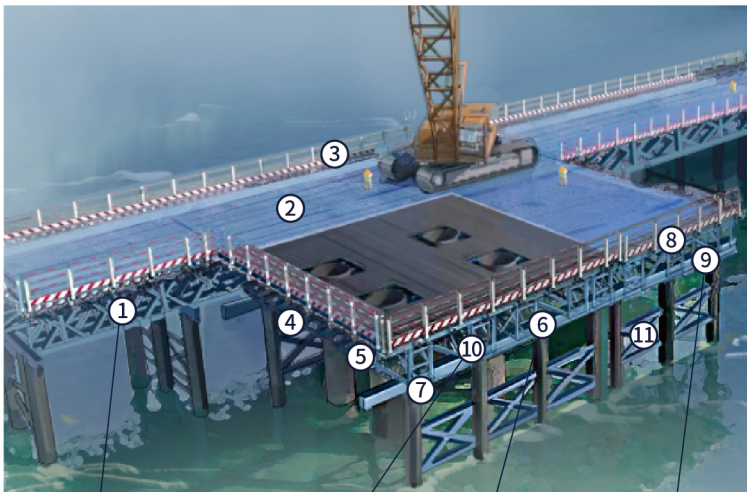
⑦ HC Strut

Combining to create a support structure with greater stiffness and larger excavation space, primarily used in deep foundation pits for industrial and civil buildings.

⑧ Steel Tubular Strut

Prefabricated steel tubular struts offer convenient construction, minimal welding work, and a wide depth range, widely utilized in residential, municipal, and subway foundation pits.

FULLY PREFABRICATED STEEL TRESTLE



① Bailey Truss

Standard national dimensions, Q355 high-strength structural steel, advanced processing technology, precise four-hole positioning.

② Deck Slab

Incorporating innovative design concepts and processing techniques, the entire deck slab achieves seamless connections and a solid design without holes.

③ Parapet

Made of bent galvanized steel pipes with a diameter of 48 cm, vertical posts are made of H-Beam, and the base features a special cast structure.

④ Load-bearing Beam

Constructed using double 45C channel steels, with high versatility and excellent structural load-bearing capacity, meeting the requirements of most projects.

⑤ Distributing Beam

Constructed using 25A H-Beam, with high versatility and excellent structural load-bearing capacity, capable of meeting the requirements of most projects.

⑥ Reinforced Chord Member

Made using Q355 high-strength structural steel with national standard product dimensions, with a new manufacturing process to tightly control dimensions at critical connection points.

⑦ Clamp

Made by bending galvanized steel, divided into upper and lower clamps; lengthwise, categorized into clamps with reinforced chord members and those without reinforcing chord members.

⑧ Toe Plate

Fabricated by bending galvanized steel sheets.

⑨ Support Frame

Fabricated by welding Q355 high-strength structural steel angles, available in standard sizes of 450 mm and 900 mm.

⑩ Diagonal Brace

Fabricated from #10 channel steels to increase the transverse rigidity of the bridge structure.

⑪ Scissor Brace

We provide one-stop solutions that integrate engineering planning, material rental and construction management with leading technologies.



01 PRODUCT FEATURES

COST-EFFECTIVE SOLUTIONS



Adoption of all-steel structure saves time and labor, and therefore more cost-effective than concrete structure.



Being standardized, easy to assemble and dismantle, it is fast and efficient in construction.

GREEN CONSTRUCTION METHODS



With its lower energy consumption in production process, our system is not only recyclable but also pollution-free.



Thereby conserving energy, reducing emissions, and contributing to sustainable development.

02 TECHNOLOGICAL LEADERSHIP



By overcoming technical challenges through continuous research and development, we have significantly improved product performance with a series of invention patents such as truss-type steel support, steel support axial force multi-point synchronous system, and steel support axial force compensation system, etc.



We have developed a diverse range of products suitable for all types of foundation pits and bridge projects, capable of addressing regional, terrain, and geological complexities, empowering us to provide customers with comprehensive and professional solutions.



Having achieved plenty of successful cases across the country, we are highly experienced in solving challenging engineering problems of all kinds.



03 ONE-STOP SERVICE



R&D

ENGINEERING
PLANNING

MATERIAL
RENTAL

CONSTRUCTION
MANAGEMENT

EFFICIENT DELIVERY BY FULL PROCESS PARTICIPATION

From R&D, engineering planning, material rental, to construction management, we provide a one-stop service. We tailor shoring solutions to meet the specific requirements from diverse and complex application scenarios, ensuring the best balance in economy, efficiency, and safety. With a complete suite of construction equipment and a professional technician and field service team, the project delivery of ours is, as always punctually and in high quality.

PROJECT CASES

FOUNDATION PIT SHORING SYSTEM

FOUNDATION PITS FOR MUNICIPAL PROJECTS (SUBWAY, UTILITY TUNNELS)

Rectangular foundation pits with multiple shoring tiers, characterized by brief construction phases and short-term use of steel struts.



Changchun Huigong Road Airport Avenue

FEATURES

Initial material input of 3,000 tons, installation and removal of supports beneath existing viaducts, limited construction space for lifting equipment, construction carried out using foldable knuckle boom cranes, posing significant construction challenges.



Ningbo Yunfei Road Phase II Underpass Tunnel Project

FEATURES

Tunnel length of 640m, excavation depth of 8.2m, soft and deep soil conditions, utilizing cast-in-situ piles and steel tubular struts.

FOUNDATION PITS FOR HOUSING CONSTRUCTION

» Industrial Buildings

Limited construction space, tight schedule, requiring fast assembly and disassembly. Shallow excavation depth, tight schedule, requiring quick assembly and disassembly.



Jiangsu Qinen New Factory Project

FEATURES

One basement level, excavation depth of 5.6m, with a 15m thick sludge layer. Utilized SMW piles with a tier of truss-type composite steel supports, marking the first of its kind.



Foshan Shunde Lilaifeng Printing and Dyeing Co., Ltd. Project

FEATURES

Site with deep soft soil (approximately 20m of sludge), featuring an L-shaped irregular excavation supported by a tier of truss-type steel supports.



SVOLT Wuxi R&D Center Project

FEATURES

Excavation depth of 10.7m, utilizing the SMW method with a tier of internal struts, and a single truss support range of 50m.

» Civil Buildings

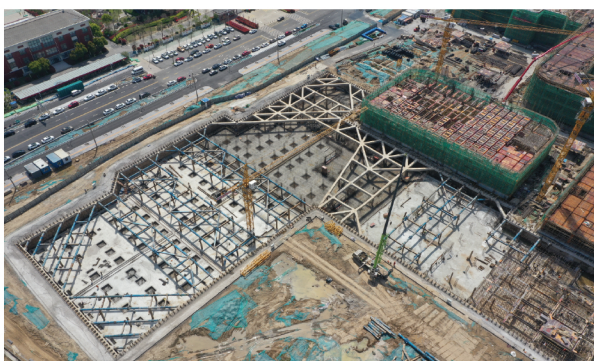
Complex surrounding environment, limited construction space, high environmental protection requirements regarding noise, mud pollution, etc.



Ningguo Cultural and Creative Center Excavation Project

FEATURES

Adjacent to two high-rise buildings, incorporated cast-in-situ piles with two tiers of steel tubular struts and a large-span angle brace design.



Suqian Yanshan Road Middle School Project

FEATURES

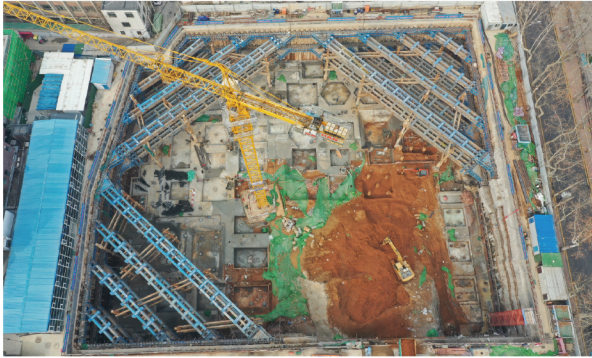
One basement level, excavation depth of 6.7m, excavation area of 10,000m². Irregular-shaped excavation in a soft soil area, utilizing the SMW method with a tier of second-generation steel tubular struts, marking the first of its kind in this region.



The Fourth Affiliated Hospital of Shenyang Medical University Project

FEATURES

Three basement levels, excavation depth of approximately 15m, excavation area of 5,000m², with a fast construction schedule.



Jinan Huaiyin People's Hospital Project

FEATURES

Three basement levels, maximum excavation depth of 17m, closest distance to a 6-story shallow foundation old building 7.8m. Complex surrounding environment, incorporated cast-in-situ piles with upper and lower truss-type double steel supports.



Hefei Zhongying Plaza Project

FEATURES

Two basement levels, excavation depth of 12.4m, excavation area of 12,000m². Utilized cast-in-situ piles with two tiers of large-span steel tubular supports, marking the first breakthrough of two-tier steel struts in the Hefei region.



Nanjing Jiangning Dongcun Commercial Office Building Project

FEATURES

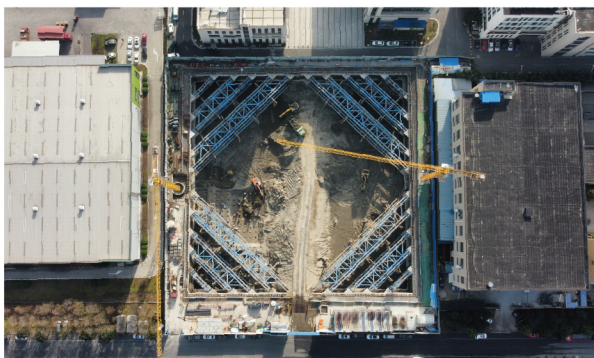
One basement level, excavation depth of 7.6m, utilized SMW piles with a tier of double H400 steel struts, with a span of 96m for the double H400 steel supports.



Taixing Huangqiao Violin Melody Town Composite Steel Support Project

FEATURES

Excavation area of nearly 30,000m², maximum excavation depth of 10.9m, two basement levels utilizing a single-tier composite steel support system with a span exceeding 110m, the first of its kind in the Taizhou region.



Zhangjiagang Bonded Zone Sci-Tech Innovation Park Phase III

FEATURES

First deep excavation in Zhangjiagang Bonded Zone, two basement levels, maximum excavation depth of 11.8m, deep and thick silt layer. Above the pit bottom consisting of silt except for approximately 2m of backfill at the top. Utilized SMW method with two tiers of truss-type composite steel supports.



Wuhan Fengzeyuan Primary School Project

FEATURES

One basement level, excavation depth of 6.6m, excavated area of 16,000m². Utilized cast-in-situ piles with a tier of HC composite steel supports, marking the first of its kind in the Wuhan region.



Nanjing Pullman Hotel Project

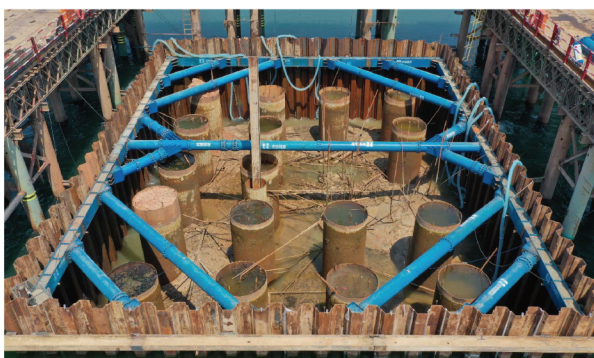
FEATURES

Two basement levels, significant geological variations around the excavated site, with some areas having deep backfill. Utilized the SMW method with 2 tiers of truss-type composite steel supports. In areas with deep backfill, utilized a concrete support with a tier of truss-type composite steel struts, marking the first of its kind in the Nanjing region.

BRIDGE SERIES

DEEPWATER COFFERDAMS

Limited site space, complex processes, requirements of waterproofing and recyclability.



Xiangyang Valley Bridge Cofferdam #23

FEATURES

Excavation depth of 12m, 18m-long VI-type Larsson piles with three tiers of internal support. Confined construction site for static pressure pile driver to sink piles.



Maojiacun Reservoir Major Bridge Cofferdam

FEATURES

Designed with a maximum excavation depth of 22m, 36m-long precast concrete structure with five internal braces, high-pile cap cofferdam utilizing extra-long piles, and preliminary installation of the bracing system for safe construction.



Qingyuan-Huadu Expressway Cofferdam

FEATURES

Excavation depth of 19m, 30m-long 820PC piles with four tiers of internal support. Installation of extra-long piles, with the single-tier support being lowered as a whole.



Lankao-Fengqiu Expressway Yellow River Major Bridge Pier #90 Cofferdam

FEATURES

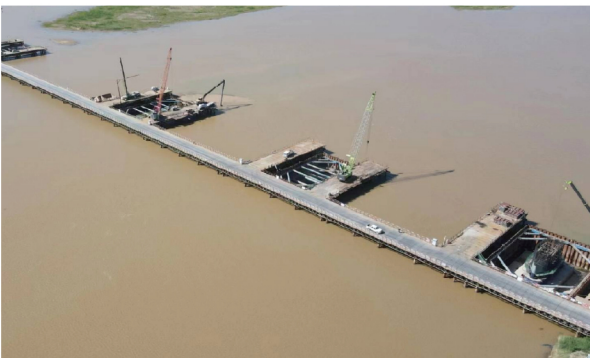
Excavation depth of 16m, 33m-long 820PC piles with four tiers of internal support. Installation of extra-long piles, with a design plan for significant riverbed erosion (exceeding 10m deep).



Jiaotang Expressway Rufang Section RFSG-1 Cofferdam

FEATURES

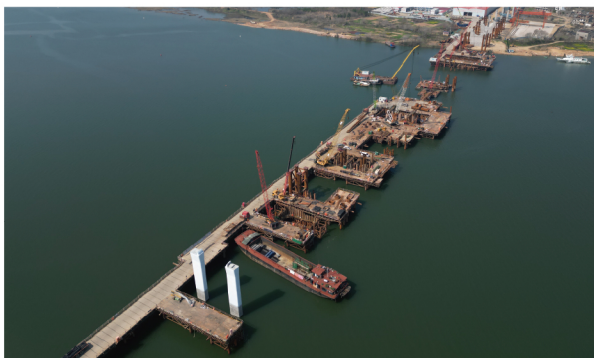
Excavation depth of 13.5m, 20m-long 630PC piles with three tiers of internal support. Impact hammer driving piles in a deep and thick gravel layer (exceeding 10m).



Baotou-Yinchuan Railway Dengkou Yellow River Major Bridge Cofferdam Project

FEATURES

Excavation depth of 14.2m, 26m-long 820PC piles with three tiers of internal support. Integrated construction of cofferdam structure and mud suction plus bottom sealing.



Fengcheng Ziyun Bridge Cofferdam

FEATURES

Excavation depth of 20m, 28m-long 820PC piles with five tiers of internal support. Ultra-deep cofferdam, with hole enlargement for pile driving, and erecting preliminary supports inside the cofferdam.

TRESTLE & SUPPORT - STEEL TRESTLE

Construction crossing over spaces or obstacles, high requirements for assembly and disassembly efficiency and recyclability.



Neijiang Maliuma Dam Bridge Project

FEATURES

Combination of trestles, cofferdams, supports, and jacking platforms. Rich variety, complex design, large scale (approximately 10,000 tonnes).



Daya Bay Cross-Sea Utility Tunnel Project (Phase II)

FEATURES

Prefabricated irregular water-crossing support structure project, with large spans (a single span of 38m to cross the river), complex lifting and assembly processes.



Shanglin-Hengzhou Expressway Xijin Yujiang Bridge Side Beam Steel Support Project

FEATURES

Prefabricated irregular support structure project, underwater supports, limited site space, complex design of irregular structures.



Wenzhou Urban Rail Project

FEATURES

6-kilometer ultra-long support structure project, with large spans (up to 35m), overall support lowering process, significant work quantities (over 20,000 tons of material input).



Yarlung Tsangpo River Major Bridge Project in Milin County, Tibet

FEATURES

Support structure project in the Qinghai-Tibet Plateau, construction of supports in high-altitude and extremely cold environments.



Hainan Wanning Yue Islet Steel Trestle Project

FEATURES

Tourist area trestle project with high environmental protection requirements and high demands for material and structural aesthetics.



Wuxi-Jiangyin Intercity Rail Transit Steel Trestle Project

FEATURES

Steel truss project in deep and thick silty soil layers, with silt thickness exceeding 20m, presenting challenges in load-bearing capacity and deformation control.

SPECIFICATIONS

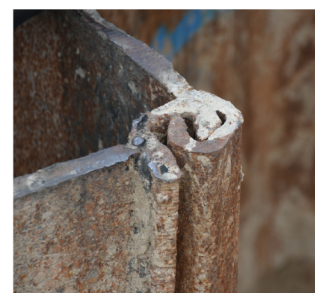
FOUNDATION PIT SHORING SYSTEM

SHORING SYSTEMS

» LARSSEN PILES

Driving Larssen piles into ground to form a steel continuous diaphragm wall that can retain soil and water; suitable for projects such as cofferdams and deep foundation pits with a depth of up to meters.

Type	Material	Model and Specification	Dimensions			Single Pile		Combined Piles per linear metre of wall	
			Width (mm)	Height (mm)	Thickness (mm)	Moment of Inertia (cm ⁴)	Section Modulus (cm ³)	Moment of Inertia (cm ⁴ /m)	Section Modulus (cm ³ /m)
U-shaped Larssen Pile	SY295, Q390	Larssen Pile	400	125	13	2220	223	16800	1340
		Larssen Pile IV	400	170	15.5	4670	362	38600	2270
		Larssen Pile IVW	600	210	18	8630	539	56700	2700



» SMW PILES

Inserting H-Beam into cement soil to form a shoring wall, suitable for deep foundation pit projects involving various soil types, rounded gravel, and highly weathered rock formations with an excavation depth of up to 15 meters.

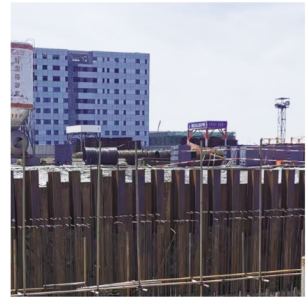
Material	Model and Specification	Area (cm ²)	Moment of Inertia I _x (cm ⁴)	Section Modulus W _x (cm ³)	Moment of Area S _x (cm ³)
Q235B	H700*300*13*24	231.5	193622	5532	3124
	H488*300*11*18	159.2	67916	2783	1550



» HLC PILES

Combining Larssen piles with H-Beam to form a steel continuous diaphragm wall; suitable for coffer-dams and deep foundation pits with a depth of up to 15 meters.

Name	Model and Specification	Single Pile		Per linear metre of wall (H-Beam with a spacing of 0.8m)	
		Moment of Inertia (cm ⁴)	Section Modulus (cm ³)	Moment of Inertia (cm ⁴)	Section Modulus (cm ³)
HLC Piles	H488 Beam + Larssen Pile	67916	2783	54332.8	2226.4
	H700 Beam + Larssen Pile	193622	5532	154897.6	4425.6



» PLC PILES

Connecting Larssen piles and steel pipes together through interlocks to form a continuous diaphragm wall; suitable for cofferdams and deep foundation pits with a depth of up to 20 meters in various soil types.

Name	Material	Model and Specification	Spacing between Steel Pipes (m)	Single Pile		Per linear metre of wall	
				Moment of Inertia (cm ⁴)	Section Modulus (cm ³)	Moment of Inertia (cm ⁴)	Section Modulus (cm ³)
PLC Piles	Q355B	Φ630*14 + Larssen Pile	1.1	128574.35	4081.73	116885.77	3710.66
		Φ820*14 + Larssen Pile	1.29	287954.62	7023.28	223220.64	5444.4
		Φ915*14 + Larssen Pile	1.385	402223.22	8791.76	290413.88	6347.84



INTERNAL SHORING SYSTEM

» STEEL TUBULAR STRUT (SINGLE)

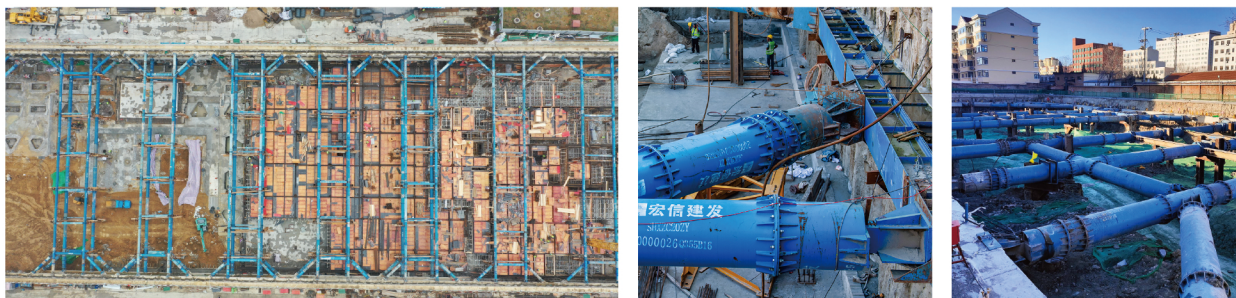
Primarily used as a component to control deformation in subway, pipeline corridor, and other foundation pits; connected through only bolts to achieve simple construction and reusable purposes.

Name	Material	Model and Specification	Diameter (mm)	Wall Thickness (mm)	Area (cm ²)	Moment of Inertia Ly (cm ⁴)	Section Modulus Wy (cm ³)
Steel Support	Q235B	Φ 609*16	609	16	298.07	131117.3	4305.99
	Q235B, Q355B	Φ 800*16	800	16	394.08	302906.71	7572.67
	Q355B	Φ 800*20	800	20	490.09	372957.31	9323.93



» LONG-SPAN STEEL TUBULAR SUPPORT

Utilizing horizontal tie rods, lateral hoops and other prefabricated components to form a long-span steel support system, applied in foundation pits for industrial and civil buildings.



» LONG-SPAN TRUSS-TYPE STEEL TUBULAR STRUT

Connected with truss-type tie rods, with prefabricated components such as diagonal tie rods and diagonal hoops added to the existing long-span steel tubular struts, creating a steel support system with even greater span and load-bearing capacity, primarily used in foundation pits for industrial and civil buildings.



» STEEL SUPPORT

Featuring a variety of node forms, forming single or multiple steel support shoring systems through various connectors, widely used in foundation pits for municipal, road, industrial, and civil buildings.

Material	Model and Specification	Sectional Area I_A (cm ²)	Moment of Inertia A (cm ⁴)	Section Modulus W_x (cm ³)	Moment of Inertia I_y (cm ⁴)	Section Modulus W_y (cm ³)
Q355B	H300*300*10*15	117	19932.75	31328.85	6752.25	450.15
	H400*400*13*21	214.54	65361.58	3268.07	22406.55	1120.32



»» HC STRUT

Using cover plate connections and prefabricated components such as triangular elements to create a steel support system with high rigidity and large space, applied in foundation pits for industrial and civil buildings.

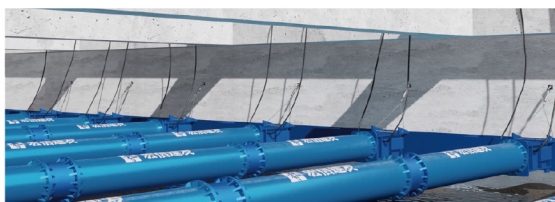


»» TRUSS-TYPE HC STRUT

Connected with truss-type tie rods, prefabricated components such as combined triangular elements used to create a steel support system with even greater rigidity and larger space, primarily used in foundation pits for industrial and civil buildings.



»» INTELLIGENT LOADING AND MONITORING SYSTEM FOR FOUNDATION PITS



Steel Support Axial Force Servo System

The steel support axial force servo system provides safety assurance for steel shoring, automatically compensating for stress in steel struts to ensure no loss of prestress. It is suitable for engineering projects requiring strict control over foundation pit deformation.



Shoring Axial Force Multi-Point Synchronous Loading System

It can simultaneously apply prestress to up to 8 support points with one click, making the prestressing of steel supports more efficient, precise, safer, and traceable.



Foundation Pit Monitoring System

IoT technology is applied to foundation pit monitoring, enabling automated monitoring. It allows for remote monitoring, continuous data collection, wireless data transmission, comprehensively ensuring pit safety.

BRIDGE SERIES PRODUCTS

STEEL TRESTLE

FULL ASSEMBLY The railings, deck slabs, distributing beams, and Bailey trusses are fully prefabricated by connecting structural components with dedicated clamps.

HIGH STRENGTH The Bailey trusses and deck slabs are made of Q355B high-strength low-alloy steel for main frames, while the distributing beams and load-bearing beams are made of Q235B steel.

HIGH QUALITY Materials, assembly, welding, and painting processes adhere to strict standard requirements to ensure the quality of raw materials.

HIGH AESTHETIC VALUE The deck slabs are designed without holes, and the entire structure is painted in HORIZON blue, making the steel trestles more visually appealing.



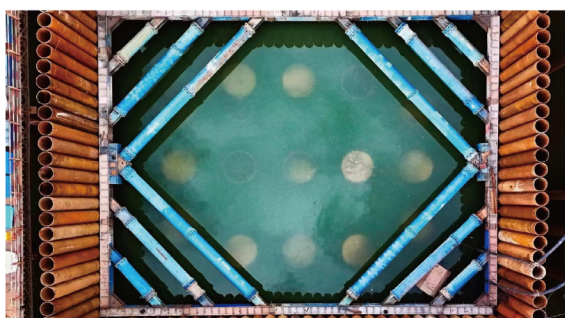
STEEL COFFERDAM

In water-related projects, a temporary steel shoring structure built to prevent soil or water for the construction of permanent structures.



» SHEET PILE COFFERDAM

The Larssen steel sheet piles sequentially driven in piece by piece (group by group), with the piles interlocking through interlocks. Assisted by a shoring system and base sealing, the sheet pile cofferdam blocking off the outer soil and water to create a construction space. Offering cost-effectiveness, ease of construction, and wide applicability.



» STEEL PIPE PILE COFFERDAM

Steel pipe piles sequentially driven in piece by piece, with the piles interlocking through interlocks. Assisted by a shoring system and base sealing, the steel pipe pile cofferdam blocking off the outer soil and water to create a construction space. Offering high structural rigidity and is suitable for deepwater cofferdams.

Stock Ticker 09930.HK

+86 400 821 8001
www.hongxinjianfa.com

CORPORATE HEADQUARTERS

9F, Tianjin CTF Finance Centre, First Avenue,
Tianjin Economic-Technological Development Area,
Binhai New Area, Tianjin, China.

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Douyin