UNICA (JIANGSU) INTEGRATED
ELECTRICAL EQUIPMENT CO LTD
alek.tian@unicachina.com
Phone-+8613801982120

CAPABILITY STATEMENT

尤利卡（江苏）集成电气有限公司
UNICA (JIANGSU) INTEGRATED ELECTRICAL EQUIPMENT CO., LTD.

Core Competencies

We start with the best people, engineering expertise and over two decades of know-how in Electrical Switchroom Manufacturing. Our customers' vision, tasks and needs define our integrated solutions and services, creating value and visibility - From Design to Delivery.

- 600+ Switch Rooms
- Complete coordination with OEM viz. HITACHI, ABB, HOWDEN, Air Products, SIEMENS etc. and EPC viz., Fluor, AUSENCO, JACOBS,WORLEY etc.
- Design and manufacturing compliant with international standards.
- Global References

UNICA has long association with various mining and oil and gas companies such as RioTinto, Air Products, BHP, KazMinerals , Air Liquid wherein we have supplied Switchrooms for different applications.

Major Past Performance

Oyu Tolgoi Phase-1 and 2 (Year2007-till date)- Main Electrification Vendor for Phase-1 and 2. Scope includes Engineering,Project Management, Manufacturing integration and testing of Switchrooms for surface and underground mining applications owned by RioTinto.

Air products: (Year2015-till date) Design and Supply of Switchrooms including installation of free issued equipment to various Air Products projects including Intel (Israil), Jazan , Jubail and Neom (Saudi Arabia).

Kazminerals Bozashakol and Aktogay Electrification: (year-2013-2015) complete package with Modular rooms with installation of LV,MV,MV VFD,LV VFD,UPS,DC etc complete

CP Mining Australia: year 2014- Complete Switchroom with installation of ,MV,LV,VFC and accessories etc.
And more…..

Differentiators (bullets)

1. Leading Switchroom supplier globally from China
2. Solid install base at various mining and Oil and Gas sites compliant with international standards.
3. UNICA is one of the biggest supplier of E-houses to OT LLC having supplied most complex designs running successfully.
4. UNICA if fully conversant with Australian standards and has successfully delivered switch rooms to CP Mining
5. Currently engaged with Air Products, HITACHI and ABB for supply of complete electrification solution including Power distribution, rectifier containers and STATCOM containers for Green Hydrogen Project in KSA.
6. Executing Shaft ventilation projects with HOWDEN and Rectifier containers for BHP Olympic Dam Project compliant to Australian Standards

Company Data

UNICA is a leading Switchroom manufacturing and integration company in china that helps in the transformation of industry to achieve a more productive, sustainable solutions. With a diverse portfolio of Mining, oil and Gas, Data Center UNICA pushes the boundaries of technology to drive performance to new levels. With a history of excellence stretching back more than two decades, UNICA's success is driven by most updated solutions for Switchroom Manufacturing

Salient Features-UNICA Modular Bldg.

- Patented Interlock panel design for wall and roof provides superior strength and protection from leakages. Interlock IP rating equivalent to IP55 Electrostatic Powder coated galvanized steel offers resistance against cracking, peeling and marring ,resulting in higher life span of around 30 years (Structure up-to 50 years)
- Superior impact resistance and corrosion resistance compared to color bond steel sheet E-Houses.
- Proven and certified design for Fire rating of 4,2,1 hours -Certified design. UL certified doors, tested by Intertek
- Complete system offered - HVAC, Fire & Gas System, Pressurization system, Air filtration system, CCTV, Door access System ,Monitoring & diagnostic systems
- Floor and Roof insulation using Flame retardant (DMMP) Polyurethane PU Spray Foam Type Elastospray 1612/19, Type tested to determine Flame Spread Index(FSI) and Smoke Developed Index (SDI) subjected to conditions specified in ASTM E84:2011B-Standard test method for test burning characteristics of Building Material.

Interlock Offering

•Patented Interlock panel design POW-R-LOK ® for wall and roof providing superior strength and protection from leakages. Interlock IP rating equivalent to IP55

•Powder coated steel offers resistance to cracking, peeling and marring resulting in higher life span of around 30 years.

•Proven and certified design for Fire rating upto 2 hours (floor ,roof and structure) and door 2.0 hrs certified design .(special design for 4 hrs fire rating also available)

•Much better impact resistance and corrosion resistance compared to color bond steel sheet E-Houses.

•Complete system offered including HVAC, Fire & Gas System, Pressurization system, Air filtration system, Communications systems, CCTV, Monitoring & diagnostic systems .

Interlock Panel : Design Concept

- Each panel has inward rib and two panels are fasten using self tapping screw from the rear side.

- The fastening screws at the bottom is done on a Z section steel that is exposed outside.

•Floor and Roof insulation using Flame retardant (DMMP) **Polyurethane PU Spray Foam Type Elastospray 1612/19,** Type tested to determine Flame Spread Index(FSI) and Smoke Developed Index (SDI) subjected to conditions specified in **ASTM E84:2011B-Standard test method for test burning characteristics of Building Material.**

•UL certified doors, tested by Intertek

CERTIFICATE OF CONFORMITY

OF THE FACTORY PRODUCTION CONTROL

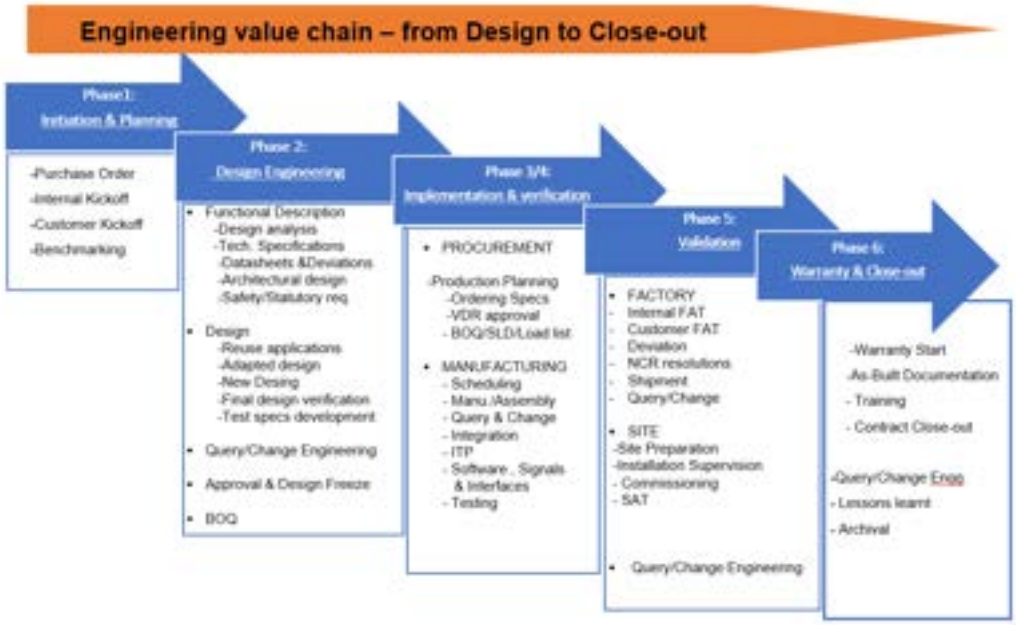
№ 1888 – CPR – 083 – CN

EN 1090-1:2009+A1:2011

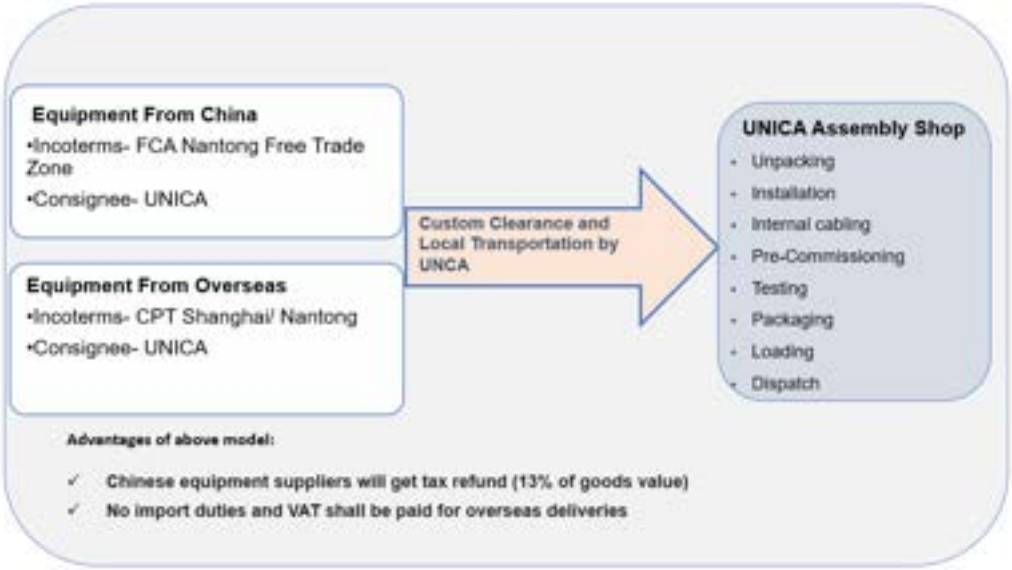
WELDING CERTIFICATE

CE Certifications for Structure and Welding

ENGINEERING PROCESS



Free Issues Equipment Handling



TOTAL SOLUTION FOR EHOUSE

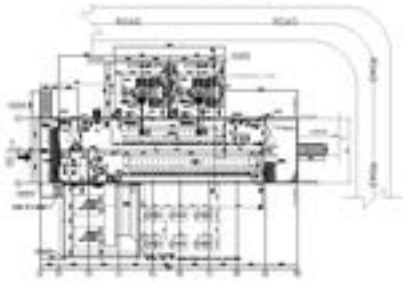
Project Execution Services

- Schedule Management
- Engineering Documentation Management
- Detailed Engineering & Design
- Complete coordination with OEM and /or EPC viz., Fluor, AUSENCO, JACOBS,WORLEY etc.,
- Management of Products Globally from Direct Customer/Third party Vendors
- Design Engineering & Integration Engineering
- Switch Room and internal equipment Design Validation as per standards and rules
- Quality Management
- Equipment Installation
- Commissioning support
- Site Management Support
- Operation Test
- Final Documentation as per Project standards, redline drawings and updates

1. Layout optimize

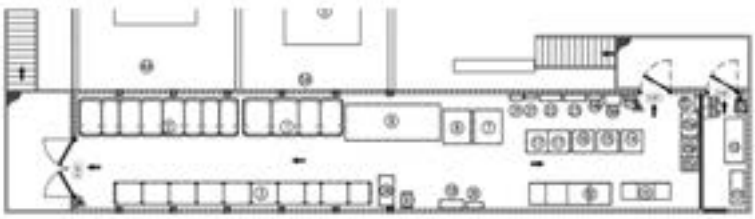
We have delivered more than 400 sets of E-house all over the world. Our decades E-house design experience ensure every application is in best-practice solution and compliance with all relevant design requirements.

✓ **The layout is optimized to reduce the total footprint and related costs**

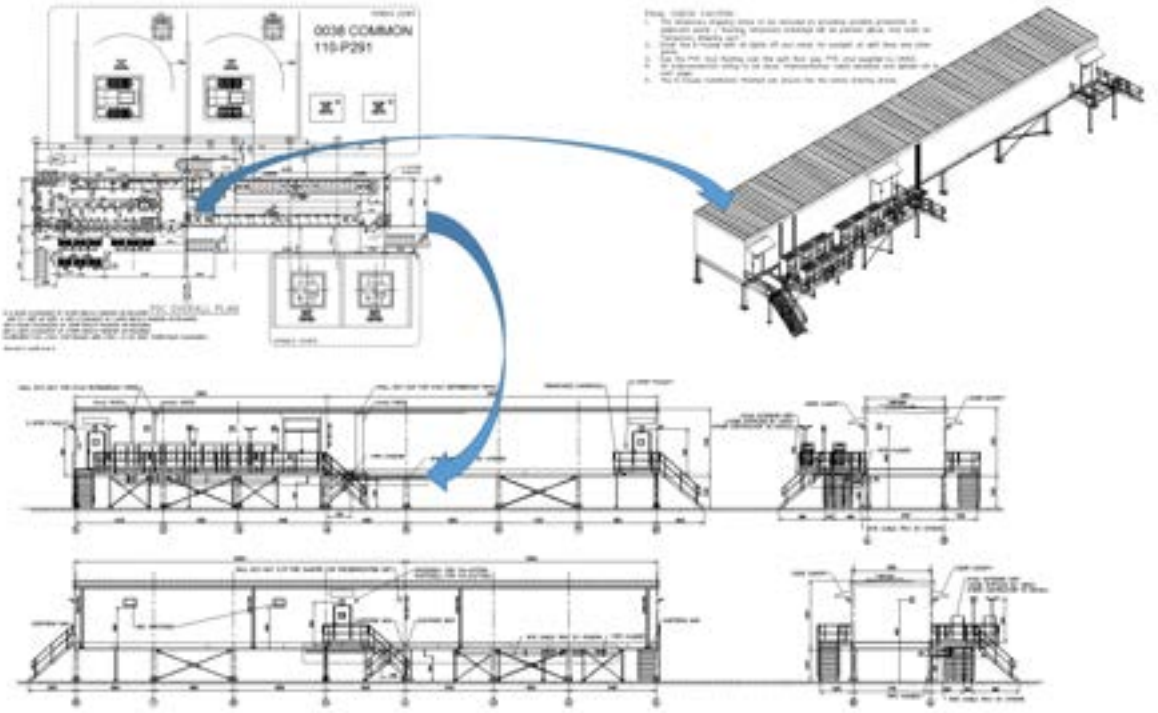


✓ **The layout is optimized to ease the panel moving out and future maintenance.**

✓ **As well as the most important point. Escape route of the layout is in compliance with local regulation and the international design codes.**

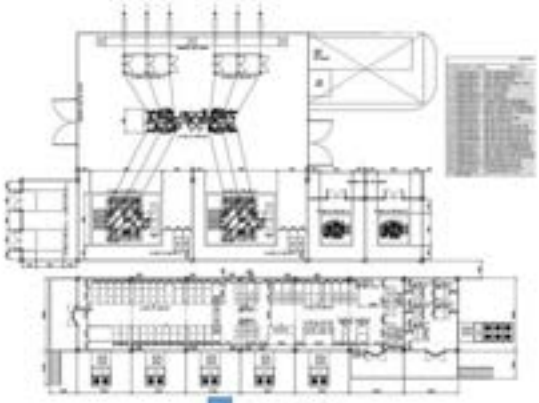


From an initial layout drawing to final detailed design. We provide professional drawings in high quality for customer's review. Customer can trace the whole design steps and give us their requirement and advise. These comprehensive design are the culmination of in-depth experience and knowledge built up over 15 years in E-house design.

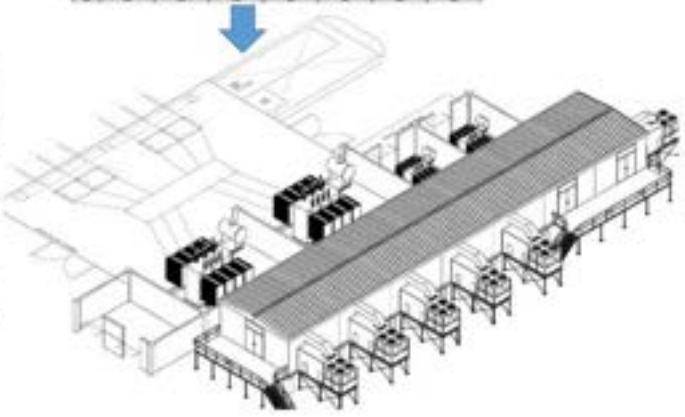


2. Digitalized engineering and 3D visualization

We perform digitalized engineering and 3D design for every project. Our intelligent and powerful software not only helps us on the accurate and skilled engineering work, but also it helps the customer to have better understanding in our final product.



Our sophisticated and expertise in digitalized engineering and visualization work makes certain that the solution you received is designed to all your needs, not only what you specify.
We also share the 3D format file to site construction team to ease their cooperate work around E-house. Through our advanced engineering work flow, we deliver an overall solution with the intent of solving your toughest problem



HVAC system

Cable tray and lighting

Equipment installation

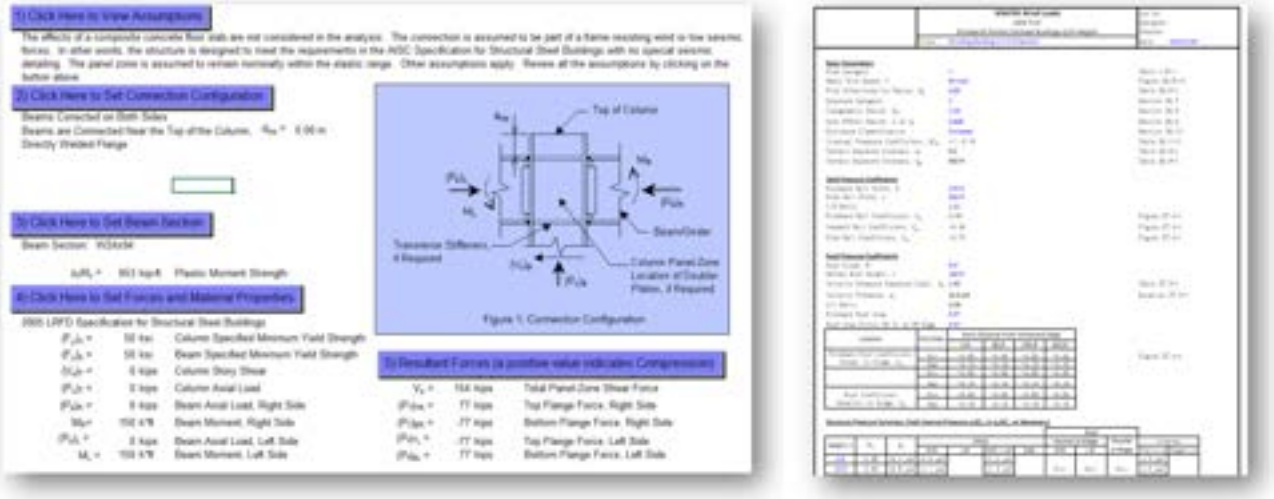
integrated installation

Our design can be performed and calculated in accordant with several different international codes. Calculation report can be offered by us during the engineering stage.

✓ EN1990 & 1991	Euro loading calculation
✓ EN 1993	Euro steel structure design
✓ ASCE 7-10& 7-16	American loading calculation
✓ AISC 360	American steel structure design
✓ GB	Chinese structural design codes
✓ AS 1170	Australian structural design actions
✓ AS 4100	Australian steel structure design
✓ SBC 301	Saudi Arabia loading and forces
✓ SBC 306	Saudi Arabia steel structural
✓ NSCP 2015	Philippines loading code

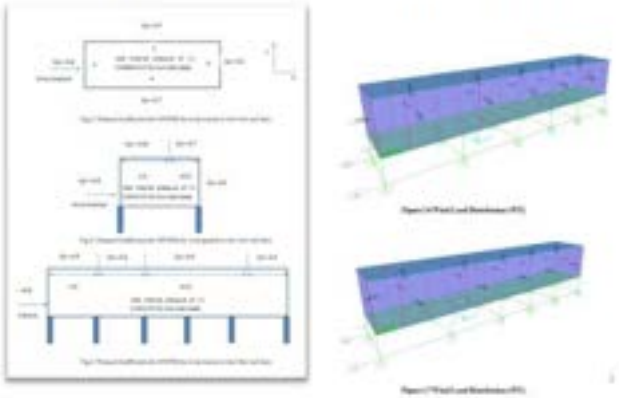
3. Structural calculation and analysis

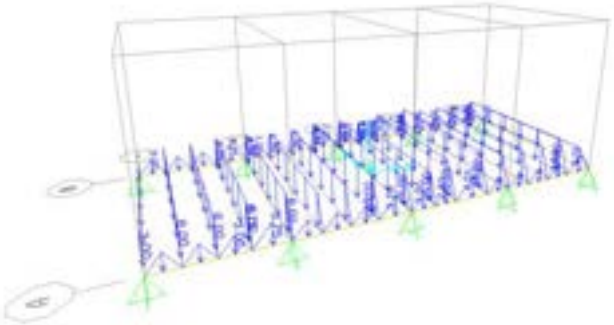
Competence and more than 15 years of experience in design the E-house structure. Various E-house application in mining, oil and gas, IT datacenter, municipal infrastructure like metro. Through this we have gained a unique insight into E-house structure - An integrated approach in the E-house structure design. That means we design the steel frame not only focus on the limit state of strength in normal serviceability and execution condition, but also the lifting condition, sea and road transportation condition, accidental impact, even blast load resistance design.



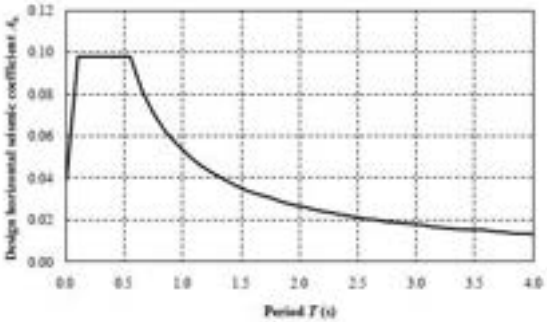
Manual calculation applied for E-house structure

Wind load and live load in structural program

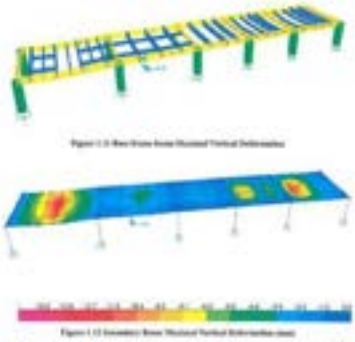




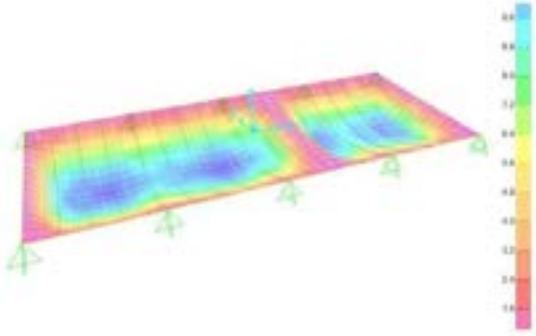
Seismic load determination



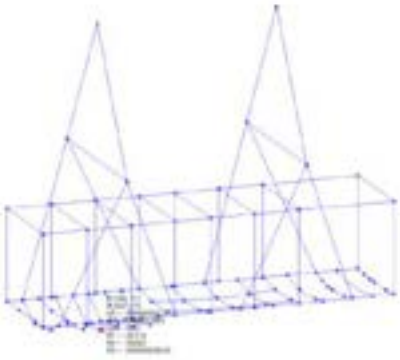
Important joint check



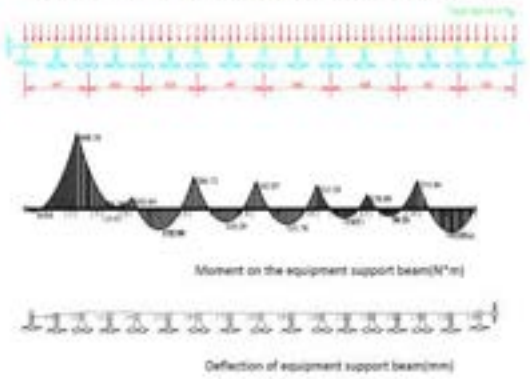
Limited state of strenght stress check



Limited state of floor live load stress check



Lifting condition deformation check

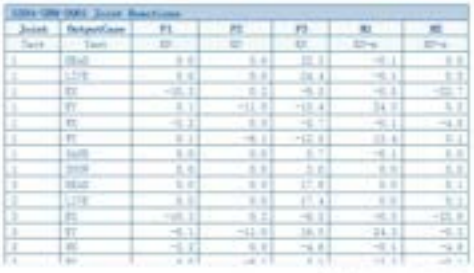


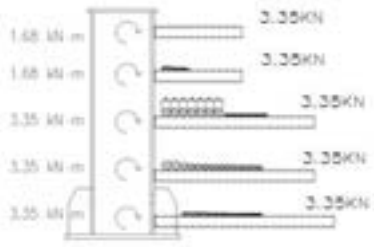
Internal force in equipment support

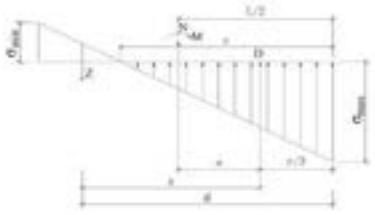
Foundation design

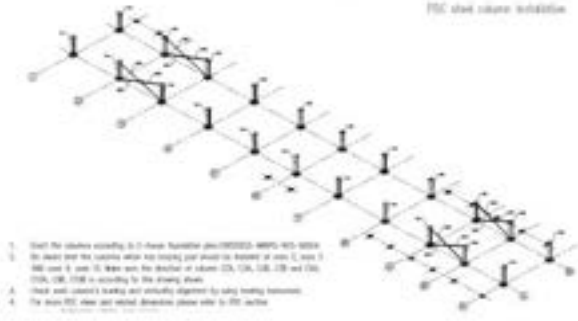
We provide the foundation design prior the site civil works. Base reaction data with calculation report will be submitted to customer for the design input. All the calculation follows project specification and project local standards.

base reaction data





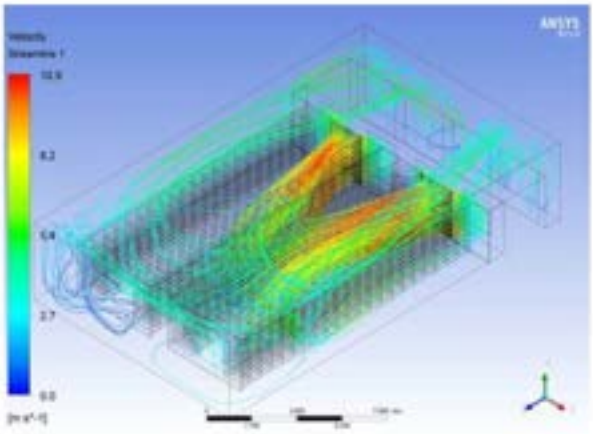




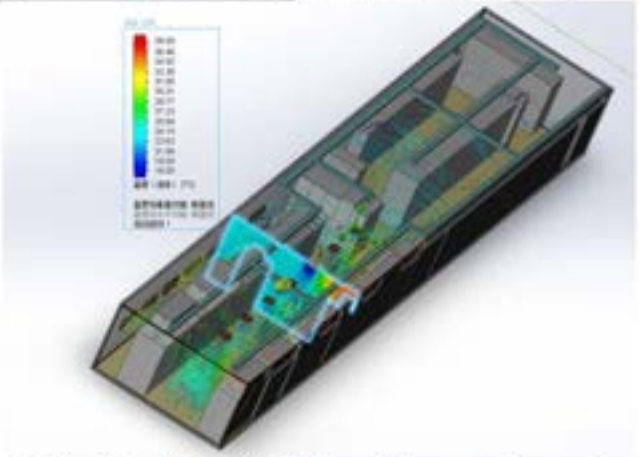
4. HVAC configuration and optimization

Our design team is able to use the high end CFD analysis software like ANSYS and solidworks flow simulation. By using these elite software and program, we can clearly see the cooling effect around the big heatloss equipment and trace every hot point in the room. That ensure the our HVAC system is reliable and heat from equipment is removed to prevent the equipment temperature from rising to an unacceptable level.

We also using Carrier hourly analysis program to calculate the cooling load in E-house. the program meets the ASHRAE load calculation standards.



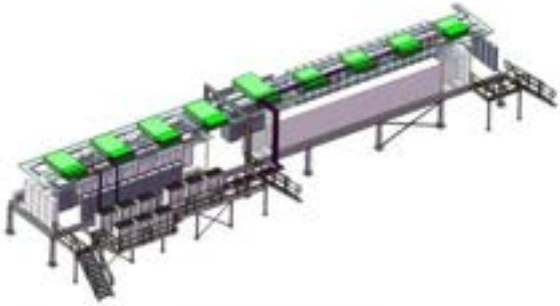
Air flow trace



Cooling distrubuting illutration and temperature contour

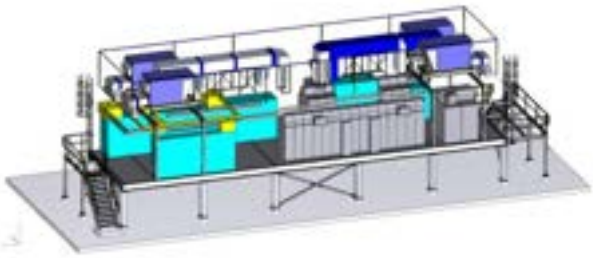
We offer various cooling infrastructure (i.e. Air duct system, wall mounted packaged unit, central air conditioning units, water cooling station etc.) to suit the customer needs, and provide the best deployment and installation method of the HVAC system. N+1 or 100% redundancy configuration can be applied in according to the project requirement.

central air conditioning with air duct system



Split HVAC system

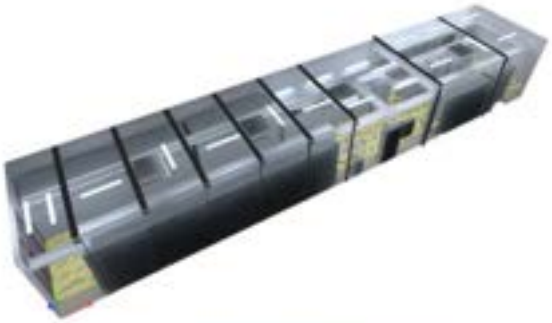
water cooling station

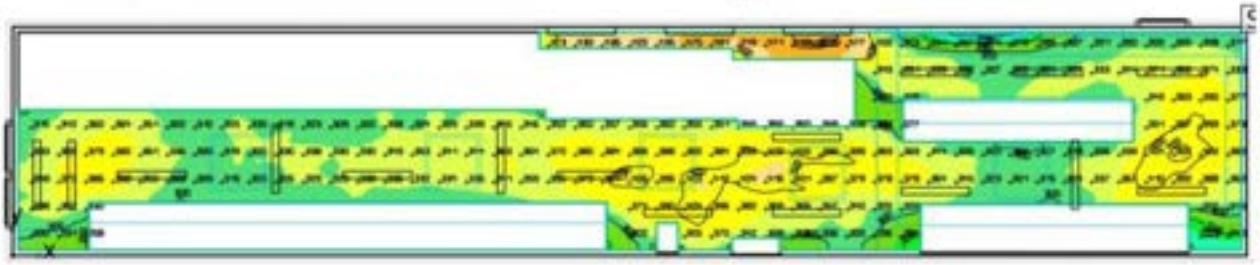


Packaged HVAC units

5. Illumination calculation and simulation

We use DIALUX evo program to perform the illumination simulation. We can get the lighting result before the installation by inputting the defining data of the lighting product into the software. The program generate the final lighting effect in the room with arructe illumnation numerical value in the plan.





illumnation numerical value in E-house plan

Equipment installation and cabling

Electrical equipment will be installed based on customer's requirement to meet the site needs, such as:

- LV/MV switchgear
- Power/distribution transformer
- LV DB、MCC
- LV/MV VFD
- Protection relay panel、control panel
- UPS、DC power
- SCADA、PLC
- Others

We install, cable and debug these equipment in the factory stage, which greatly shortens the customer's site construction period and greatly reduces the project cost.

Cable tray

Electrical equipment

Electrical equipment

Equipment plinth

OUR ADVANTAGE

20 years of history
Since the establishment in 2004, we have been committed to the electrical equipment installation package solution, and determined to be in line with international standards and become an internationally renowned manufacturer.

Experienced team
Our key managerial personnel and technicians have more than 25 years experience in international large E-house project.

Reliable quality
Our E-houses have passed the inspection of the top five inspection institutions in the world, and there is no any quality complaints so far.

Rich international project experience
In the past 20 years, the projects we have participated in are all internationally famous projects, and our cooperative clients are all fortune 500 clients, we have accumulated rich experience in international projects.

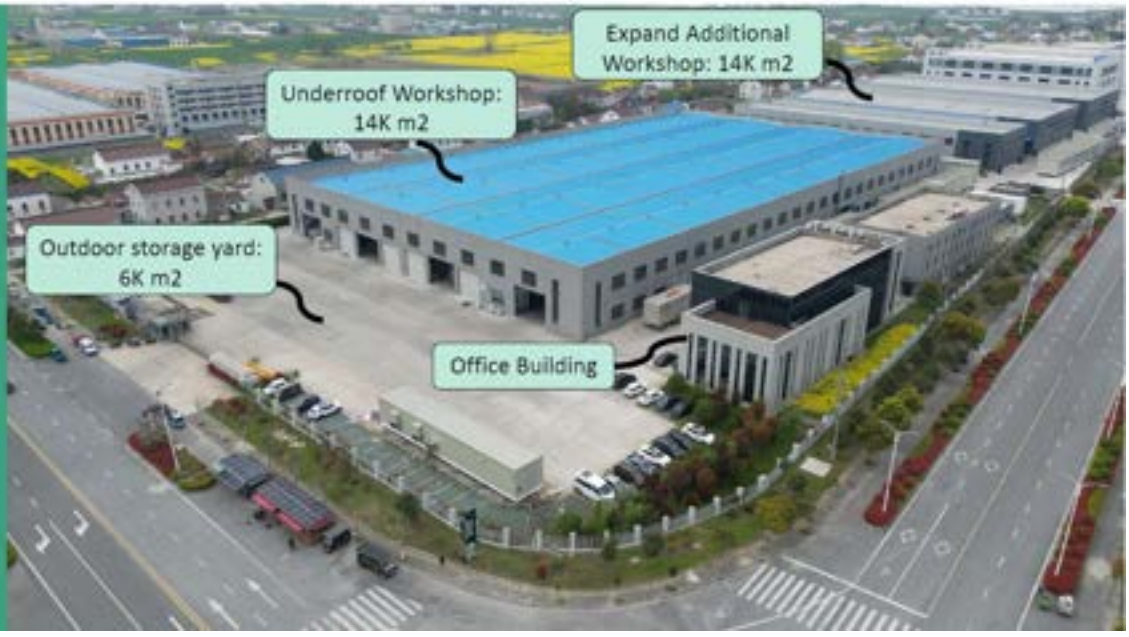
Advanced design and management concept
Our project management, document control, product design are in line with international standards.

High product requirement
We are engaged in providing E-house of high quality, and keep working on it. As so far, the E-house steel structure has passed the CE certification, the fire system passed the UL test, and the roof passed the test of ANSI FM4474.

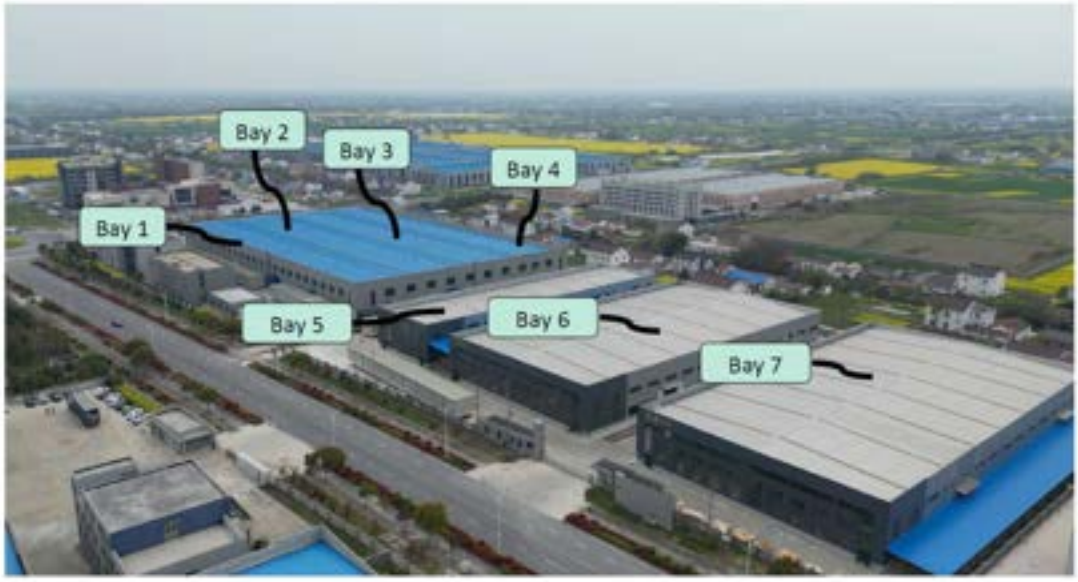
Trusted partner
We have participated in many international largescale project successfully in past 18 years, provide more than 400 sets of typical/split E-house, win the deep trust of our users and enjoy a high acclaim in this international segment.

OUR FACTORY

Our factory has an underroof workshop of 25k㎡ and an outdoor storage yard of 9K㎡.



OUR WORKSHOP



About 55 sets of E-house of 20m*4m(L*W) could be accommodated simultaneously. By average turnover of 4 month, our facility can make 165 E-house at size 20m*4m annually.

OUR PRODUCTION EQUIPMENT

- Laser cutting machine
- Steel sheet cutting machine
- Steel sheet folding machine
- Steel plate sand blasting machine
- Conduit and copper bar bending machine
- Profiled steel sand blasting machine

OUR FABRICATION TECHNOLOGY

2-hour fire resistance wall system

北科卡（上海）集成电气有限公司

箱式变电站防火墙耐火性能测试报告

UL certified 2-hour fire resistant door

Intertek

TEST REPORT

RENDERED TO

UNICA(Shanghai) Integrated Electrical Equipment Co., Ltd.

Testified roof assemblies

抗风揭检测报告

OUR FABRICATION TECHNOLOGY

No welding

Our wall/roof/ ceiling are made of the interlock panel, there is no welding on them, the air tight property can be maintained greatly.

Less frame, more space

With this kind of interlock panel system, more space is saved to accommodate as more equipment as possible in the E-house

Clean and safe

All the welding work can be finished before equipment installation, the whole assembly work can be carried out in a clean and safe environment

Interlock panel system

Labor reduced

The base frame work and the interlock panel production work can be carried out in the same time. Not like a frame structure house, it must to be built according to the work flow as the column-beam-wall-roof.

Stronger

All the interlock panels are made of 2mm/3mm galvanized steel plate, which is much stronger compared with colorbond house.

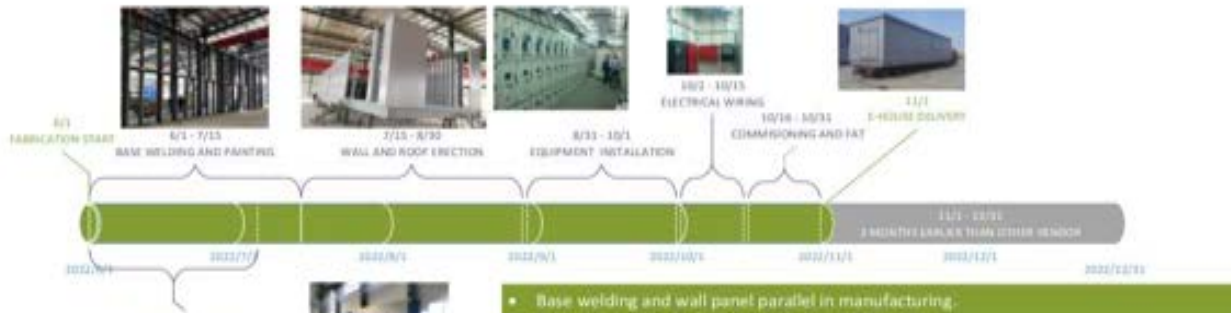
Corrosion resistant

All the interlock panel is applied with electrostatic polyester powder coating, which provide extremely tough, durable films, and enhance the e-house quality greatly.

Our enclosure panel system provide the basis for breaking the common fabrication process that is three times faster than competitor's method by utilizing traditional steel structure approach.

OUR EFFICIENT FABRICATION PROCESS

OTHER VENDOR E-HOUSE PROCESS IN TIME LINE



- Base welding and wall panel parallel in manufacturing.
- No welding and other hot job after base finished.
- Stronger interlock panel than traditional wall panel.
- Unica is the only one E-house supplier can provide ANSI FM 4474 certified roof system.

QUALITY CONTROL

We adhere to strict control of product quality, and has successfully passed the inspection of the world's first-class testing institutions, creating a good record of no quality problems since the company was established.

CUSTOMER AREA

A Distribution

B Area

- Mining
- Gas and Oil
- Rail traffic
- Mobile internet