

# INTEGRATED MEDICAL CLEAN **ENGINEERING SOLUTION**

## Hunan Eter Medical Co., Ltd.



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## **COMPANY PROFILE**

Established in 2003, ETR has become a leading provider of comprehensive services in the field of specialized medical systems, including intelligent medical gas systems, high-altitude oxygen supply systems, and medical cleaning systems, as well as IOT smart ward. And We are also a national high-tech enterprise that integrates research, development, production, sales, and after-sales service.

As one of the most qualified manufacturers of medical gas systems and medical cleaning systems in China, we can provide customers with professional consulting, planning and design, product manufacturing, engineering construction, and operational maintenance, offering a comprehensive, specialized, and integrated solution throughout the entire process.

The company's products not only spread to hospitals in China, but also exported to more than countries and regions on five continents. The after-sales service network provides customers with rapid response and comprehensive support.

20+

**60**+

200+

Years

Countries

Patents

**400**+

Employees

3000+

Hospitals



Vision

ETR For The World, ETR For The Centuries Mission

Crafting Products With Love,
Dedicating Ourselves To Patients

Spirit

Love, Integrity, Passion,

Values

Integrity Builds ETR, Passion Fulfills Dreams

## **BUSINESS SYSTEM**

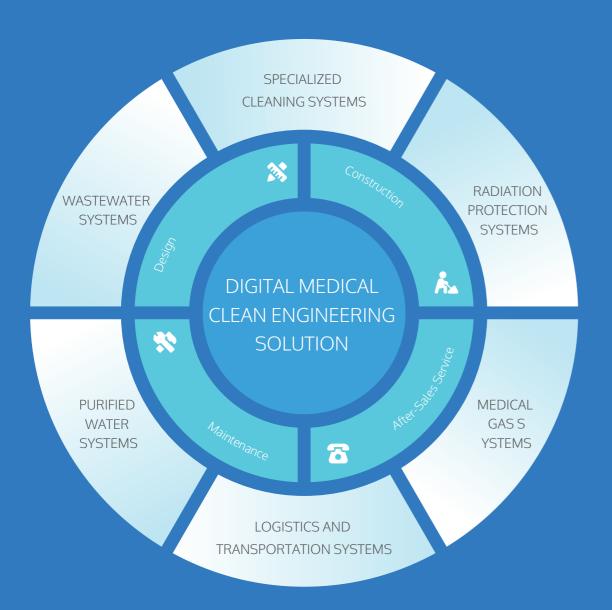
A DESIGN AND OPERATION SYSTEM INTEGRATING INFORMATIZATION, AUTOMATION AND INTELLIGENCE

## Design First

Folk Customs, Concept Integration, Avant-Garde Ideas, And Meticulous Color Selection

## Idea

Ecological, Environmentally Friendly, Energy-Saving, Safe, And Efficient

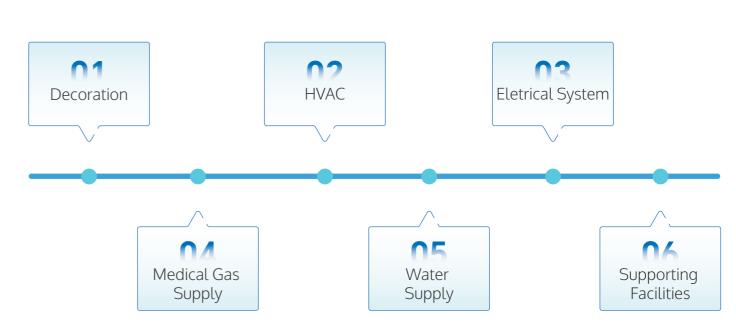


## **BUSINESS SCOPE**

## >> Key Department

Category	Function			
Emergency Department	The emergency department includes emergency rooms, emergency intensive care unit (EICU), diagnostic and treatment rooms, comprehensive therapy room, and observation rooms.			
Clinical Departments	Intensive care units (ICU) such as neurological ICU (NICU), neonatal ICU (NICU), pediatric ICU (PICU), emergency ICU (EICU), coronary care unit (CCU), and surgical ICU (SICU), as well as delivery rooms, burn wards, hematology wards, hemodialysis rooms, reproductive medicine centers, operating rooms, interventional centers, vacuum clean isolation wards, and hematology wards.			
Medical Technology Departments	Includes facilities such as the intravenous medication preparation center, the laboratory, the radiology department, the pathology department, the central (sterile) supply department, the blood bank, and the endoscopy center.			
Others	Medical support equipment includes overhead towers, bridges, and columns, as well as shadowless lights. It also encompasses equipment from the central (sterile) supply department, such as ventilation hoods, biosafety cabinets, laminar flow workstations, anesthesia cabinets, instrument cabinets, medicine cabinets, laboratory furniture, and nurse stations.			

## >>> Key Design



## PLANNING AND DESIGN PROGRAM

01

#### **CONCEPTUAL DESIGN**

Determine the site location, scale, building, and key indicators to provide support for the feasibility study report.

#### PLANNING SCHEME DESIGN

Plan design (second and third-level processes), facade design, renderings, design descriptions, review processes, etc.

02



#### PRELIMINARY DESIGN

Preliminary design drawings and descriptions for specialized systems (architecture, structure, water supply, HVAC, electrical) and preliminary cost estimates.

#### CONSTRUCTION DRAWING DESIGN

Construction drawing design and description for specialized systems (architecture, structure, water supply, HVAC, electrical) and calculation books, etc.





#### SUPPORTING SYSTEM DESIGN

Installation locations for medical support equipment such as pendants, bridges, columns, shadowless lights, and equipment from the central (sterile) supply department.

#### CONSTRUCTION COORDINATION ADJUSTMENTS

Adjustments to construction drawings due to changes in site conditions, usage requirements, policy standards, material supply, and other factors.



## **CLEANLINESS STANDARDS**

Air Cleanliness Level	Maximum Particle Count /m³						FS 209E
	≥0.1 <b>µ</b> m	≥0.2µm	≥0.3µm	≥0.5µm	≥1µm	≥5µm	- F3 209E
IS01	10						
IS0 2	100	24	10				
IS0 3	1,000	237	102	35			Level 1
ISO 4	10,000	2,370	1,020	352	83		Level10
IS0 5	100,000	23,700	10,200	3,520	832	29	Level100
IS0 6	1,000,000	237,000	102,000	35,200	8,320	293	Level1,000
IS0 7				352,000	83,200	2,930	Level10,000
IS0 8				3,520,000	832,000	29,300	Level100,000
ISO 9				35,200,000	8,320,000	293,000	









#### >> Introduction

Including the interior decoration of clean rooms, such as ceiling, walls, floors, doors, and windows, the decoration and basic facilities of operating rooms, as well as the procurement and installation of related equipment. The decorative materials should be non-staining or difficult-to-stain materials, ensuring the air tightness of the clean room and that the decorative surfaces are non-dusting, non-dirt accumulating, and easy to clean.

## >> Floor

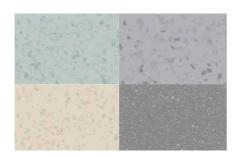
#### Homogeneous Core Roll Material

- 1. Lotus leaf effect: Like lotus leaves, it turns into beads when it encounters water:
- 2. High strength and wear resistance: As hard and transparent as gemstones;
- 3. Anti-heel print: The synergistic effect makes it more difficult for heels and other stubborn stains to adhere and easier to clean;
- 4. More durable: The product surface protection system can provide more comprehensive protection.



#### PVC Roll Flooring

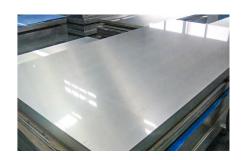
- 1. Wear resistance, easy cleaning, and does no dust;
- 2. Good anti-static performanc;e
- 3. Resistant to chemical drugs, dilute acids, or alkalis, without significant damage to the floor;
- 4. B1 fire resistance rating, and has T-level wear resistance.



### >> Wall

#### Electrolytic Steel Panels

- 1. The plate is usually made of 1.0, 1.2, 1.5MM electrolytic steel plate or stainless steel plate, and the surface is electrostatically sprayed;
- 2. The back plate is glued with gypsum board or calcium silicate board;
- 3. The steel frame structure is welded with galvanized square tubes and anti-rust treatment is done;
- 4. The four corners of the operating room are connected with three-dimensional circles, and arc transitions are used between the plate surfaces.



#### Medical Clean Panels

- 1. Environmentally Friendly: 100% asbestos-free, and free of harmful and radioactive elements such as benzene and formaldehyde;
- 2. Non-combustible: Made with non-combustible A-grade calcium silicate board as the base material;
- 3. Easy to Install: Easy to cut and paste, convenient for installation;
- 4. Strong Weather Resistance: Resistant to acid, alkali, and chemical erosion, does not raise dust, and has strong antibacterial properties.



### Doors And Windows

#### Medical Automatic Airtight Door

- 1. Sensor-activated opening with delayed closing function;
- 2. Equipped with dual motors for primary and backup use;
- 3. Maximum load capacity of 240KG, with steel rollers;
- 4. Tested by professional organizations for fault-free operation exceeding 1 million cycles.



#### Medical Stainless Steel Transfer Windows

- 1. The cabinet is made of 304 stainless steel, which is sturdy, durable, and aesthetically pleasing;
- 2. Equipped with safety glass for reliable use;
- 3. It features built-in UV germicidal lamps to sterilize the interior and bacteria on conveyed items;
- 4. It can be configured as 6-door or 9-door setups.





## Introduction

HVAC, which stands for heating, ventilation, and air conditioning, encompasses the engineering of heating, gas supply, ventilation, and air conditioning systems. This field includes the design and automation of purification air conditioning systems, as well as the procurement and installation of auxiliary cold and hot source systems, piping systems, general comfort air conditioning systems, and other related equipment.

### >> Medical Combined Air Treatment Units

- 1. High air handling capacity and high fan static pressure;
- 2. Precise control of temperature and humidity;
- 3. Strict control of positive and negative pressure;
- 4. Effective air filtration system;
- 5. Low noise and minimal vibration.



## >> Laminar Air Flow Ceiling

- 1. Equipped with high-efficiency filters to ensure the cleanliness of the operating room air;
- 2. Stable airflow organization to maintain the comfort of the indoor environment:
- 3. Low noise operation and easy to install enclosures;
- 4. Energy-efficient and environmentally friendly.



### >> Return Air Grille Plasma Purification Device

- 1. Effectively kills and disinfects microorganisms;
- 2. Low resistance loss and minimal equipment noise;
- 3. Wide range of air handling capacities;
- 4. Easy to install and maintain.



### >> Plasma Air Disinfection Unit

- 1. High efficiency in sterilization and environmental friendlines;
- 2. Low energy consumption and long service life;
- 3. All-metal casing with anti-oxidation properties;
- 4. One-time investment with no consumables needed for the lifetime of the product.



## >> Activated Carbon Adsorption Chamber

- 1. Equipped with built-in activated carbon, it has a high adsorption capacity and strong odor removal capabilities;
- 2. The activated carbon can be regenerated through a special method, allowing for recycling and reuse;
- 3. Environmentally friendly, easy to operate, and has low maintenance costs.





## >>> Strong Current

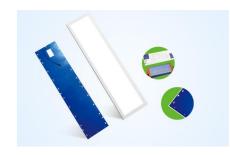
#### **UPS**

- 1. Excellent adaptability to poor environment;
- 2. Innovative design of internal structure;
- 3. Easy to operate and maintaine;
- 4. Green and energy-saving.



### Clean-room Panel Light

- 1. Premium aluminum alloy frame through seamless welding process;
- 2. Electrostatic high gloss powder coating to resist corrosion and oxidation;
- 3. Eye comfortable—by using diffuser panel with high-brightness LED chips;
- 4. High-quality and stable lighting—by using Acrylic light panel.



## >> Introduction

Hospital electrical system refers to the internal power supply system and power distribution system of the hospital, which is used to provide stable and reliable power supply to meet the needs of various equipment and facilities in the hospital.

## Hospital Electrical System



02

ELECTRICAL EQUIPMENTAND

04

WEAK CURRENT INTELLIGENT SYSTEM

05

### >> Weak Current

#### Arm Mounted Bed Extension

- 1. High-definition large touchscreen for easy operation;
- 2. Multi-colored nursing lights for quick identification of patient care needs;
- 3. Vital signs monitoring with abnormal alert system;
- 4. Reminds patients to take medication and nurses to verify medical orders for less omission and mistake.



#### Visitor Extension

- 1. High-definition touchscreen with clear images and smooth operation;
- 2. Convenient communication with two-way high-definition video calling;
- 3. Patient privacy protection with strict visiting management and nurse station transfer;
- 4. Stable and reliable device with medical level ANDROID operating system.





## >> Introduction

Medical gas is a single or mixed gas used for patient treatment, diagnosis, prevention and driving surgical instrument. It includes oxygen, vacuum, compressed air, nitrogen, xenon oxide, argon, carbon dioxide and other gases.

## >> Degreased copper pipe

- 1. Premium high-purity copper. (content ≥99.99%);
- 2. Excellent antibacterial performance;
- 3. Long service life of up to 100 years;
- 4. Completely Trecyclable.



#### >> Bed Head Panel for ICU

- 1. Safer with multi-cavity structure to separate strong current, weak current and gas;
- 2. High-quality aluminum alloy with clean technology—color customized;
- 3. Integrates three essential functions: monitoring, respiration and infusion;
- 4. Modular design for the easy attachment of various accessories, such as monitor stands, infusion poles, medical examination lights and storage basket.



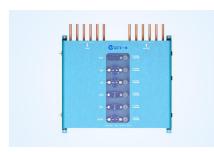
### >> Medical Gas Alarm Box

- 1. Safety assurance for fully compliant with ISO7396 and HTM02-01;
- 2. Capability to detect and verify the operational status of all gas alarms;
- 3. Transparent pressure gauge design providing you with real-time insights at a glance;
- 4. Advanced data processing and storage; smart monitoring with remote data.



### >> Area Valve Box

- 1. Optional 1-7 gas control paths, integrated and zoned for control1;
- 2. Oxygen reserve outlet for oxygen cylinders in case of oxygen failure;
- 3. Transparent window allows for easy monitoring of pressure;
- 4. High aesthetic appearance all degreased copper material.



### >> Gas Outlets Cabinet

- 1. Steel base box with electrostatic powder coating. Beautiful appearance and reliable quality!;
- 2. The material of the face box can be customized;
- 3. Installation method: bevelled/ straight;
- 4. Quantity of gas outlets can vary with options.





#### >> Introduction

The hospital water supply system is designed to bring water from the municipal water network (or a private source) into the hospital for medical and daily needs. It ensures that all types of water usage meet the quality, quantity, and pressure requirements for water supply.

The hospital drainage system is a system to discharge sewage and waste water generated by medical activities and daily life in time through pipes and auxiliary equipment (submersible sewage pump).

## >> Water Supply System (Cold/ Hot)

#### S304 Thin-Walled Stainless Steel Pipe

- 1. Long lifespan equivalent to the building and corrosion-resistant;
- 2. High strength and lightweight, enhancing work efficiency;
- 3. Healthy and environmentally friendly material, 100% recyclable;
- 4. Leak-proof, impact-resistant, and low flow resistance.

#### PP-R Pipe

- 1. Smooth inner walls for unobstructed water flow;
- 2. Strong heat resistance and high-pressure tolerance;
- 3. Excellent corrosion resistance;
- 4. Environmentally friendly and energy-saving.





## >> Water Drainage System (Wastewater/ Sewage)

#### **UPVC**

- 1. Medical standards: safe and environmentally friendly, acid and alkali resis-
- 2. Durable and easy to install;
- 3. Compact structure with no leakage;
- 4. Smooth inner walls of the pipeline for various media.



#### **HDPE**

- 1. Excellent heat and cold resistance, with good chemical stability;
- 2. Strong mechanical strength with high rigidity and toughness;
- 3. Good resistance to environmental stress cracking;
- 4. Resistant to corrosion from acids, alkali, and various salts.



## >>> Sanitary Ware

#### **UPVC**

- 1. Stainless Steel Sanitary Ware (including hand-washing sinks, dirty sinks,
- 2. Long-lasting durability for seamless welding and polishing;
- 3. Pleasing and user-friendly design with rounded corners;
- 4. Easy to clean and disinfect to prevent bacterial growth;
- 5. Fully automatic sensor faucets to avoid contact and cross-infection.



#### Ceramic Sanitary Ware (including pedestal basins, countertop basins, urinals, etc.)

- 1. Good technology: molding through high temperature;
- 2. Easy-to-clean and smooth surface with glazing many times;
- 3. New type of hand basins with large water storage;
- 4. User-friendly with shower outlet design.



## **SUPPORTING FACILITIES**

It includes: shadow-less lamp, operating table, delivery bed, ceiling-mounted pendant, ICU bridge-type pendant, NICU pendant column, sterilization equipment, imaging equipment, testing equipment and etc.

## >> Ceiling-Mounted Pendant

- 1. Elegant with high-strength aluminum alloy;
- 2. Modular design with electrical separation;
- 3. Conical needle roller bearing structure for the boom joints;
- 4. High load-bearing capacity, with the boom or box rotation angle exceeding  $340^{\circ}$ .



## >> Operation Bed

- 1. Strong lifting force and high reliability with imported electric hydraulic system;
- 2. Dual independent control systems, one as a backup;
- 3. Corrosion-resistant and easy to clean with 304 stainless steel;
- 4. Multi-layered composite flexible memory mattress.



## >>> Surgical Shadow-less Lamp

- 1. Better cleaning and heat dissipation with an IP65 protection rating;
- 2. Specialized mode with multiple surgical working modes, accessible with a single click;
- 3. Anti-flicker and no blue light with constant current circuit;
- 4. Automatically recognizing and compensating for blocked light with intelligent shadow compensation technology.



## **HONORARY QUALIFICATION**



## **CUSTOMER CASE**

## >> Nanjing Gulou Hospital south ward

Undertook the construction of part of the purification project in the southern part of Nanjing Gulou Hospital, covering clinical laboratory center, static distribution center, pathology department and other departments. On the basis of strict compliance with medical norms and standards, each department center was fully built from the aspects of functionality, practicality, design aesthetics and ergonomics.





## Maanshan Bowang District People's Hospital

Undertook the construction of part of the purification project in the Bowang District People's Hospital, covering delivery room, inspection center, surgery center, central supply, intravenous drug preparation room, interventional treatment, imaging center, etc.

## >> Yueyang Hospital of Chinese Traditional Medicine Hospital

Undertook the construction of Yueyang Hospital of Traditional Chinese Medicine purification project, involving endoscopy center, surgery department, supply room, delivery room, NICU/PICU and other departments. The completion of the project will play a positive role in promoting the development of traditional Chinese medicine in Yueyang City.











## Nanjing Jiangning Hospital Tangshan branch

Jiangning Hospital Tangshan Branch & Tangshan Street Community Health Service Center Medical joint medical special project, involving medical gas system, medical cleaning system, medical water treatment system and other projects, the completion of the project will provide quality medical services for nearly 100,000 people in and around Tangshan Plate with a new look.

## **MORE CASE**

## **AFTER-SALE SERVICE**











#### More Customer Case

- Wenden Osteopathic Hospital
- Linyi City Cancer Hospital
- Nanfang Hospital, Southern Medical University
- Zhaoqing Dinghu District People's Hospital
- Meizhou Kedu Orthopedic Hospital
- Guangyuan Zhaohua District People's Hospital
- Affiliated Hospital of Inner Mongolia University for Nationalities

- Toksun county township health center
- Anhua County second People's Hospital
- Fuquan City General Hospital
- Dafang Evergrande Charity Hospital
- Wugang People's Hospital
- Nujiang Lisu Autonomous Prefecture People's Hospital



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