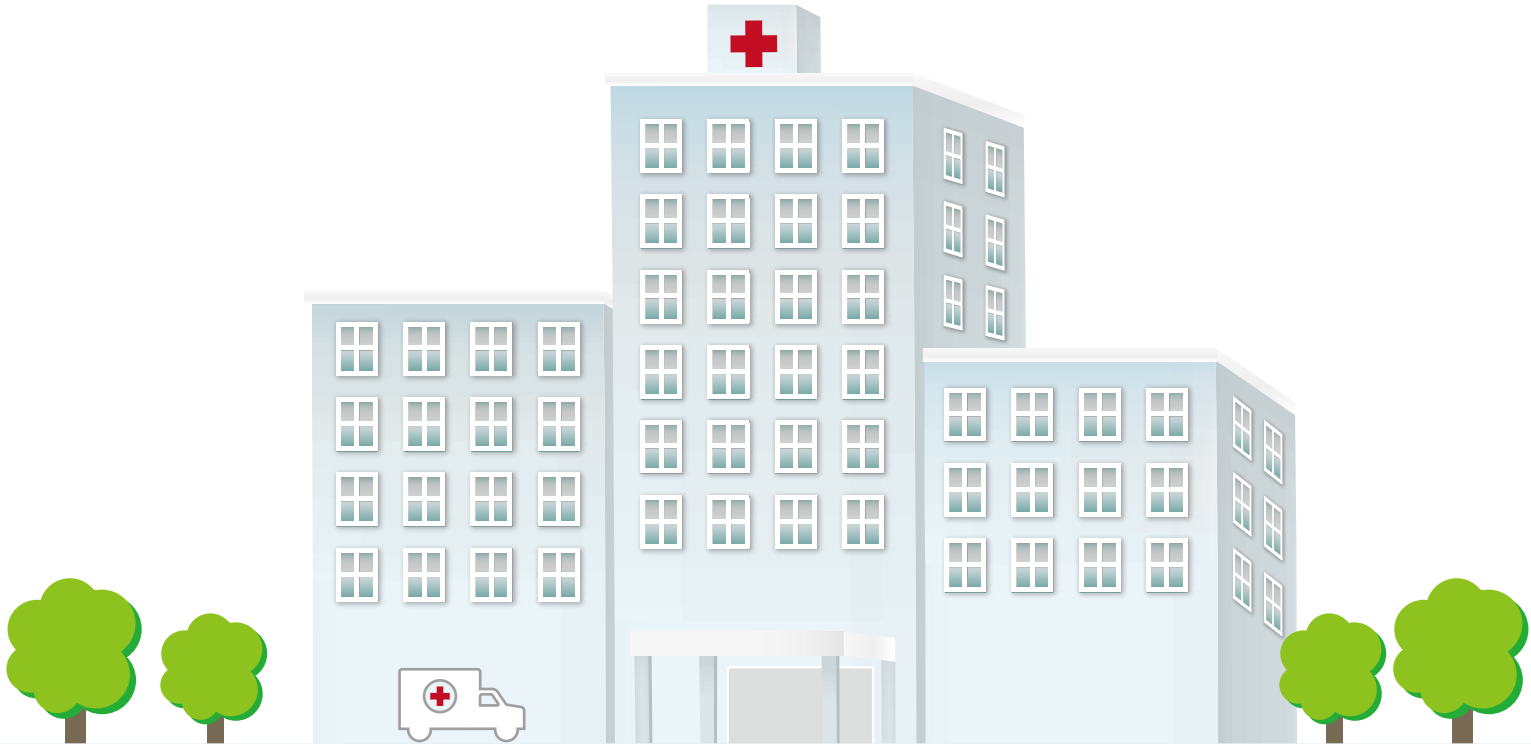




Enhancing Asia's Built environment



# Healthcare Solutions



## Introduction

Whether it is for new build or retro-fitting projects, Jardine Engineering Corporation (JEC) can provide a complete and comprehensive range of healthcare solutions to optimise the hospital built environment.

These tailored solutions make use of the leading performance-proven technologies from around the world to help hospitals provide the highest services levels for patients and overcome the key challenges facing them, such as rapidly increasing service demand at higher patient expectations.



## JEC's SMART Healthcare Technologies

Hospitals need to be able to adapt to the immediate and future changes in their operating environment, such as modifying their service mix to suit an increasingly ageing population, while coping with the demands of an ever growing patient flow.

Therefore JEC realises the importance of providing a range of modular and flexible technologies that will help future-proof today's hospitals against tomorrow's uncertainty.

With this in mind JEC has developed the SMART framework to select and tailor only the most relevant and appropriate technologies for the healthcare sector, which have the following key attributes:

**S**

### SAFE

Because patient and staff safety is of paramount importance

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**M**

### MODULAR

To allow for easy future hospital expansion and increases in capacity

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**A**

### ADAPTABLE & INTEGRATED

Making hospitals systems flexible and fully integrated

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**R**

### RELEVANT

To the key challenges facing hospitals

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**T**

### TRACK RECORD

Only using proven and high-performance technologies and products

## JEC's Healthcare Value Chain

### ADVICE & ASSESSMENT

Technical  
Consultation &  
Assessment

Proposal &  
Design

## JEC, making a difference across the Value Chain

JEC can leverage its breadth in capabilities and depth in experience to work with healthcare facilities across the whole value chain from the initial consultation and design stages, to installation and testing, right through to the on-going technical facilities management, providing complete solution delivery under one roof.



HEALTHCARE SOLUTIONS

Healthcare Building Solutions

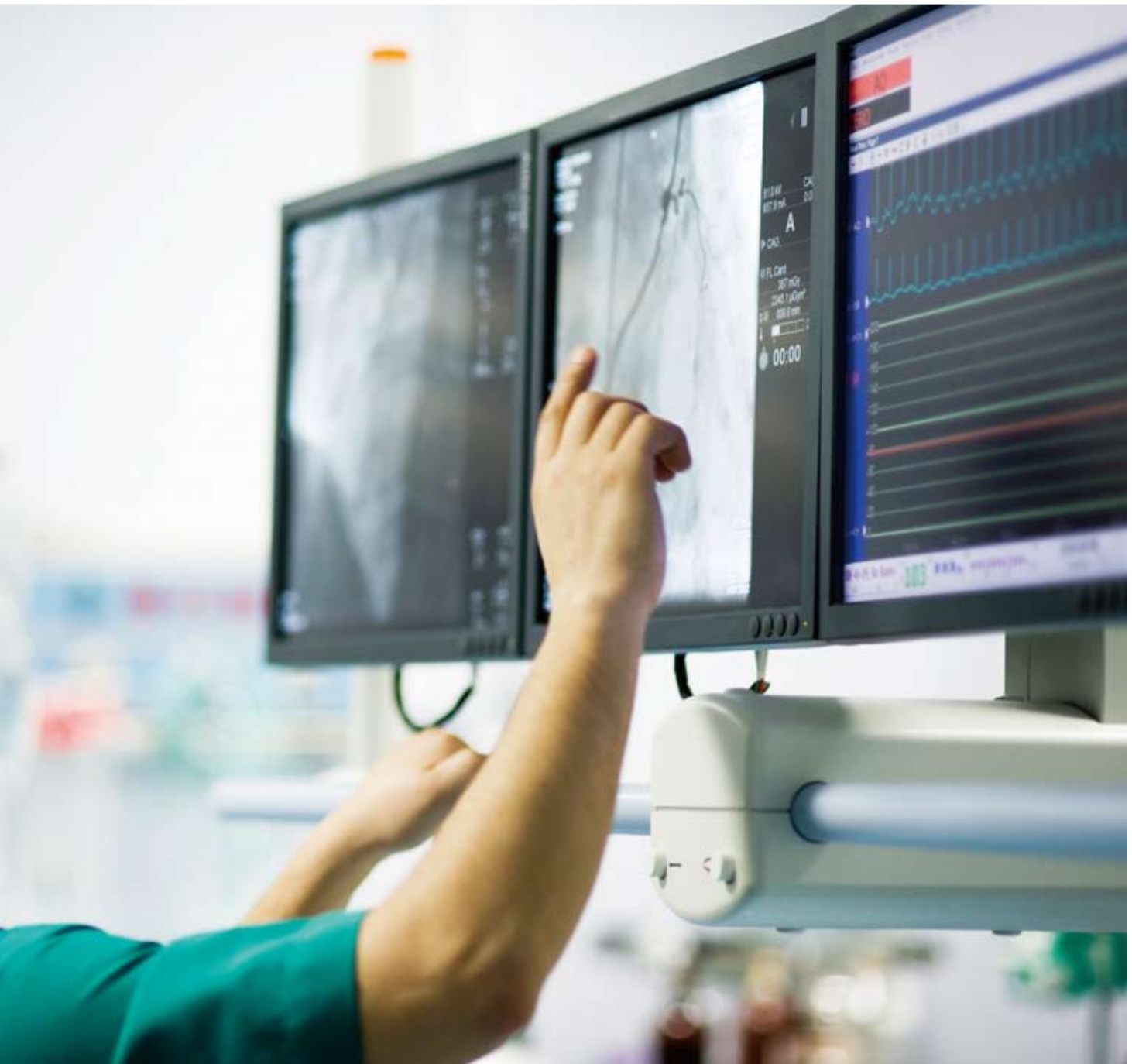
Clinical Support Solutions

Healthcare Support Facilities

TECHNICAL FACILITIES MANAGEMENT

Testing & Maintenance

System Optimisation



# JEC's Healthcare Solutions



## Healthcare Building Solutions

### A Healthcare Building Products:

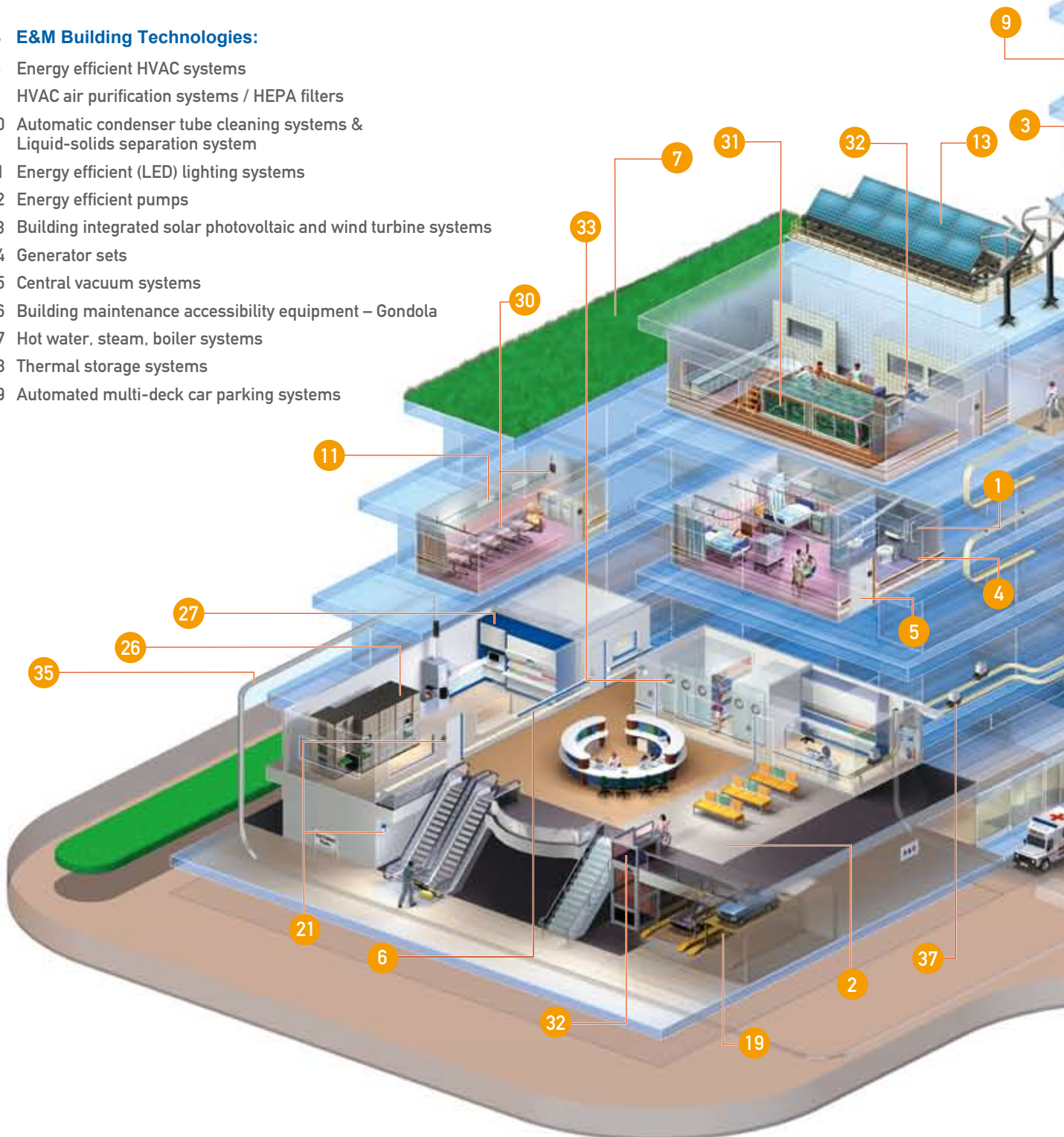
- 1 Specialist healthcare sanitary ware and bathroom fittings
- 2 Sustainable resilient flooring systems
- 3 Recyclable cubicle partition system
- 4 Gully odor control system
- 5 Fire rated doors
- 6 Wall guard & hand rail systems
- 7 Green wall & green roof

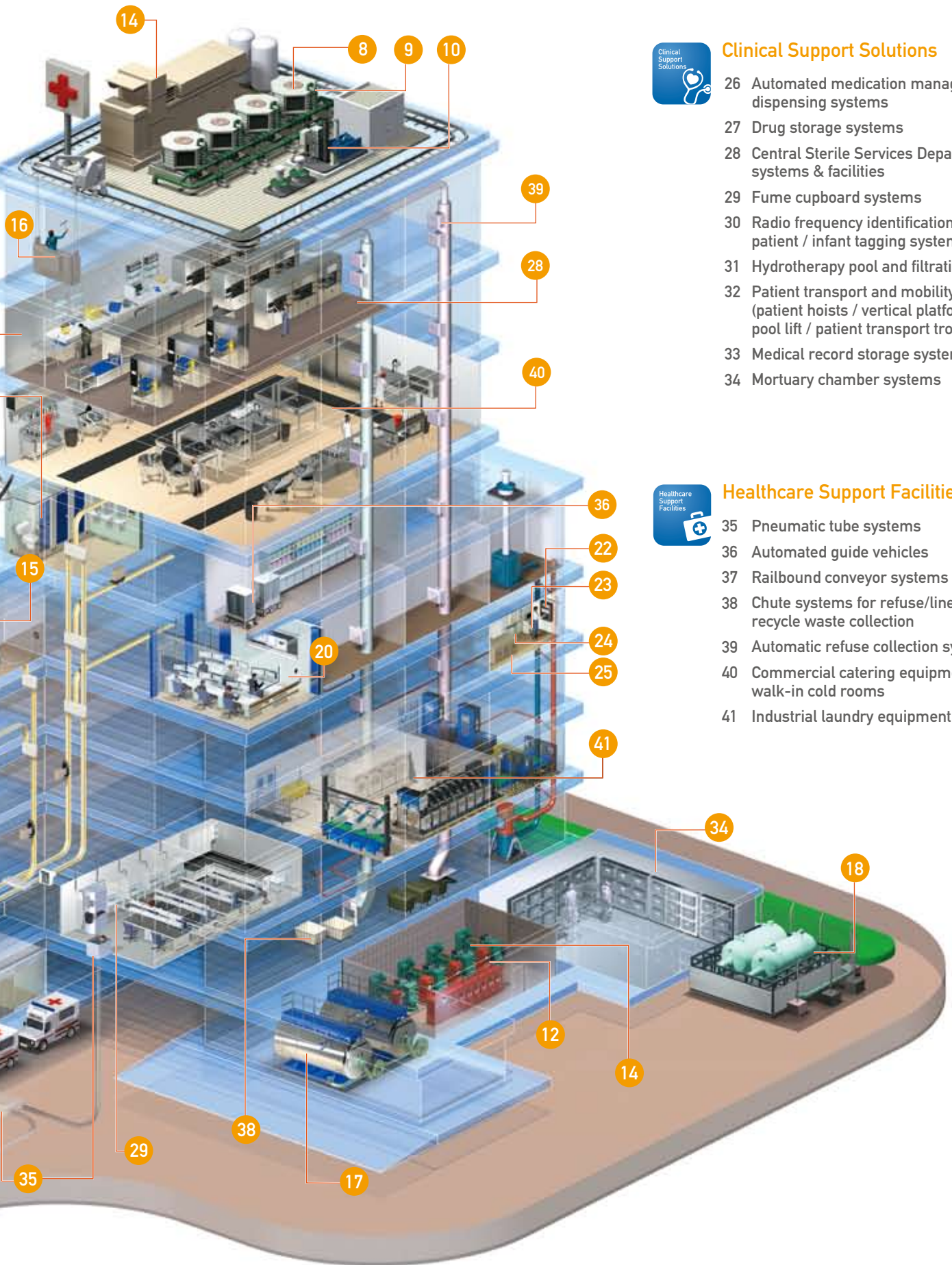
### B E&M Building Technologies:

- 8 Energy efficient HVAC systems
- 9 HVAC air purification systems / HEPA filters
- 10 Automatic condenser tube cleaning systems & Liquid-solids separation system
- 11 Energy efficient (LED) lighting systems
- 12 Energy efficient pumps
- 13 Building integrated solar photovoltaic and wind turbine systems
- 14 Generator sets
- 15 Central vacuum systems
- 16 Building maintenance accessibility equipment – Gondola
- 17 Hot water, steam, boiler systems
- 18 Thermal storage systems
- 19 Automated multi-deck car parking systems

### C Automation, Fire & Security Systems:

- 20 Building management system (BMS) and integrated BMS (IBMS)
- 21 Security systems – access control, intruder alarm, CCTV
- 22 Central battery systems
- 23 Aspirating smoke detection panel (VESDA) and automatic fire alarm (AFA)
- 24 Fire curtain/ Fire shutter
- 25 Smoke detector systems





### Clinical Support Solutions

- 26 Automated medication management and dispensing systems
- 27 Drug storage systems
- 28 Central Sterile Services Department (CSSD) systems & facilities
- 29 Fume cupboard systems
- 30 Radio frequency identification (RFID) patient / infant tagging systems
- 31 Hydrotherapy pool and filtration systems
- 32 Patient transport and mobility solutions (patient hoists / vertical platform / stair lift / pool lift / patient transport trolley)
- 33 Medical record storage systems
- 34 Mortuary chamber systems



### Healthcare Support Facilities

- 35 Pneumatic tube systems
- 36 Automated guide vehicles
- 37 Railbound conveyor systems
- 38 Chute systems for refuse/linen/ recycle waste collection
- 39 Automatic refuse collection systems
- 40 Commercial catering equipment and walk-in cold rooms
- 41 Industrial laundry equipment

# JEC's Healthcare Solutions



## Healthcare Building Solutions

Due to hospitals being highly demanding operating environments with the strictest hygiene standards, in addition to the standard building solutions JEC supplies healthcare facilities with a wide range of specialist building products, Electrical and Mechanical (E&M) technologies, and building systems to ensure their built environment is optimally configured for their staff and patients.



### Healthcare Building Products

JEC has a diverse portfolio of specialist healthcare building products from world-class brands, which meet the stringent regulatory requirements and incorporate important features such as anti-bacterial coatings, and zero formaldehyde emissions to help ensure a healthy hospital environment. The key product areas include specialised sanitary ware, flooring, wall protection & hand rail systems, and doors.



### Automation, Fire, and Security Solutions

JEC can provide a comprehensive set of customised building systems that address a wide range of hospitals' core building needs from security and access requirements to 24-hour fire detection and monitoring services. To achieve higher level efficiencies, an Integrated Facility Management System (IFMS) can be used to integrate and streamline the control of a cluster of hospitals from a single central location. Furthermore, an IFMS can provide essential data and analysis to identify areas of improvement and preventative maintenance to maximise the performance of hospitals' plant and building operations.



### Electrical and Mechanical (E&M) Building Technologies

JEC can supply, install and maintain a comprehensive portfolio of internationally leading E&M plant and machinery. The systems are tailored to the specific requirements of the healthcare facility, ranging from energy efficient HVAC systems incorporating advanced air purification and filtration technologies to significantly reduce air borne bacteria and particulates for example for clean rooms, to high quality genset systems to ensure your building is operating optimally and reliably around the clock.





## Clinical Support Solutions

Working with world-leading technology partners and suppliers, JEC can offer specialist solutions to help improve patient safety, service quality and efficiency in the healthcare sector.



### Pharmacy & Clinical Laboratory Solutions

Fully automated and integrated medication dispensing systems and radio frequency identification (RFID) labeling help significantly reduce dispensing errors, increase patient safety, and dispensing efficiency. Tailored high density automated drug storage and retrieval systems can further optimise pharmacy inventory management and logistics.



### Medical Records Solutions

Significant space savings and productivity gains can be made by the use of high density and electronically operated medical record shelving systems that allow both easy access and efficient storage ensuring patient information is correctly categorised, safely stored, and always easily at hand when needed.

### Patient Care Solutions

Patient Mobility Solutions allow staff in the healthcare sector to provide maximum patient comfort and safety when on the move. A comprehensive range of patient mobility and accessibility solutions ranging from patient hoists, pool lifts, vertical platform and stair-lifts help ensure the safety of both patients and staff. While radio frequency identification (RFID) patient / infant tagging systems offer real-time patient / infant tracking for greater safety and peace of mind by significantly reducing patient / infant mismatch errors, guarding against abduction.





### Central Sterile Services Department (CSSD) Systems & Facilities

JEC provides a comprehensive range of sterilisation systems for healthcare facilities that help ensure personnel have the right equipment, at the right time in a sterile condition. Our comprehensive offering includes washer disinfection systems for disinfection prior to sterilisation, and steam sterilisation and low temperature sterilisation systems which can deal with the full range of medical equipment right through to the most temperature sensitive items. All these sterilisation solutions are modular and can be assembled to meet your facility's specific capacity requirements, from table top units to larger scale trolley floor loading systems.

### Mortuary Chamber Systems

Complete body handling and storage solutions for mortuaries are offered by JEC that ensure that bodies are stored to the highest hygiene standards while the systems are tailored to maximise space and operating efficiency.



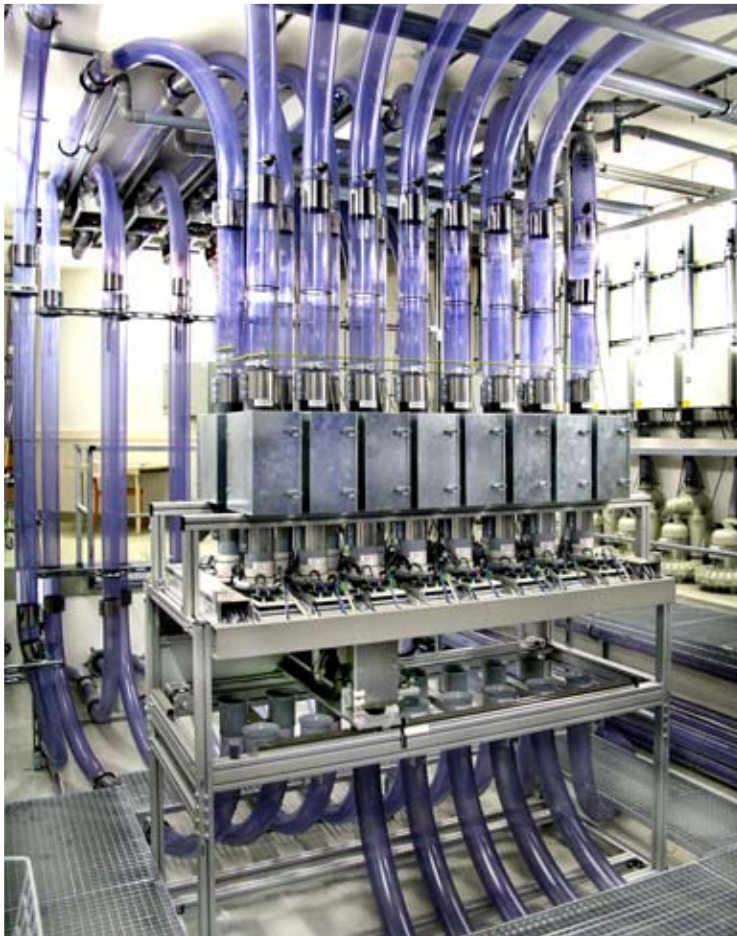
## Healthcare Support Facilities

The hospital operating environment presents significant logistical challenges with the complicated and inter-related flows of patients, staff, medical materials and information. JEC can provide solutions to optimise these flows, making them logical and efficient throughout the hospital to increase patient throughput and staff productivity while maintaining high safety and service quality levels.



## Material Handling Solutions

Modular multi-zone pneumatic tube systems, rail bound conveyor systems, and automated guide vehicles can be used for transport of a wide variety of medical materials, supplies, and documents to all parts of a hospital complex. These systems can lead to significant productivity gains by not only the fast and efficient transport of materials, but also by allowing vital staff to be freed from routine tasks. For example, blood samples from the front line can be delivered effortlessly and rapidly by pneumatic tube to a distant laboratory for immediate testing.



## Hospital Catering

From walk in cold rooms, to a comprehensive range of catering equipment, JEC can provide a total solution for commercial scale catering that ensures the highest levels of food hygiene and freshness.



## Linen Solutions

JEC can design and install automated high capacity laundry systems that are energy efficient and scalable to meet healthcare facilities' specific needs whether it be on site or for an external centralised facility serving multiple hospitals. JEC's solutions will ensure an efficient supply of clean and hygienic medical linen.

## Refuse Systems

In addition to conventional material waste handling/chute systems, JEC can provide automated refuse collection systems that transport waste materials such as soiled linens or kitchen waste to a central collection point via a sealed pneumatic tube system, reducing manual handling and the associated risk of contamination/infection, improving the internal environment, and releasing building space amongst other advantages.

# Green Building Technologies

JEC also provides a complete range of green building technologies that improve efficiency, human health, and reduce wastage. JEC manages all stages of a building efficiency project, from initial assessments, to product sourcing and installation, to on-going technical facilities management.

JEC's green technologies provide solutions for enhanced energy efficiency, water efficiency, building integrated power, optimised building materials, waste management, and indoor air quality.



# Technical Facilities Management

To reap the full benefit of the healthcare solutions and green technologies these systems must be properly operated, maintained and managed. In addition to sourcing and installation, JEC has extensive experience in managing buildings to ensure that they operate at peak performance.

Technical facilities management is a proactive approach to operate and maintain buildings that constantly seeks out best practice. Mechanical and electrical systems are monitored and tested against benchmarks. Where gaps are identified, JEC suggests improvements that ensure facilities are managed to a world-class standard. Improvements draw on our technicians' combined pool of years of experience in optimising engineering systems.



# About Jardine Engineering Corporation

Jardine Engineering Corporation (JEC) is a leading provider of products and services that enhance Asia's built environment. The group provides products & sourcing, engineering contracting, and technical services for buildings, the energy and transport sectors, and environmental infrastructure.

JEC specialises in the provision of electrical, mechanical and building technologies. The group provides contracting expertise to deliver large-scale installations and on-going operation and maintenance services which help our customers to operate their facilities to a world-class standard.

Established in Shanghai in 1923, JEC is now headquartered in Hong Kong and operates throughout Asia. JEC is a member of the Jardine Matheson Group.



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