An Award-Winning Formula: Smart & Sustainable

sembcorp

Urban Up

Sembcorp's International Water Hub in Nanjing is designed with smart systems and features that improves building performance and enhances occupants' quality of life, effectively contributing to the well-being of both people and planet.

LEED Gold Certification

China Green Building 2-Star Rating

'Best Office Building in Nanjing' Yangtze Evening Post Real Estate Awards
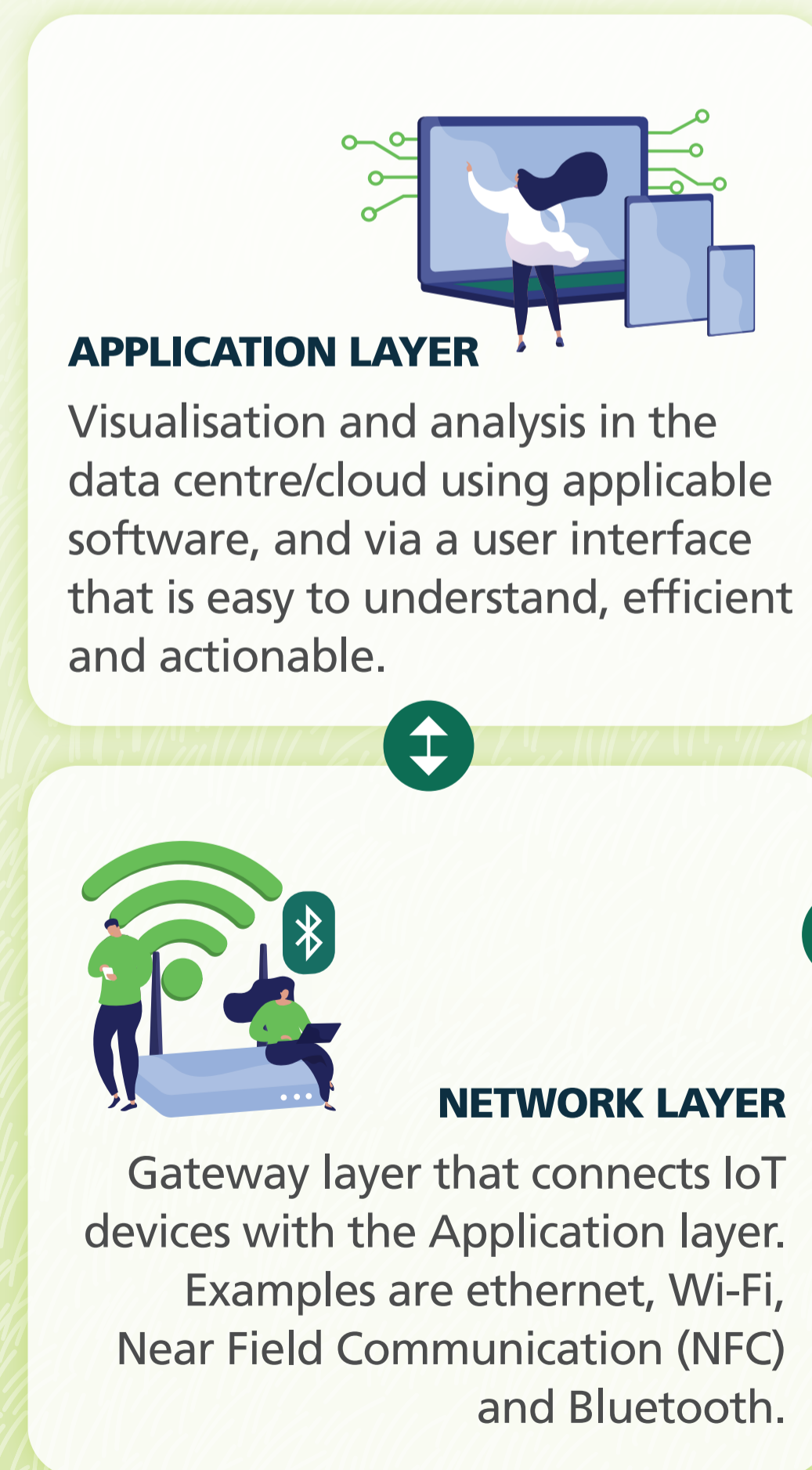
Benefits of Smart Technology

At its core, smartness is driven by **IoT-enabled sensors** which draw real time operating data. These data can be aggregated for **further analysis** to provide actionable insights, which end users and operators access via a **user interface** for the following benefits:

- Equipment optimisation
- Resource efficiency
- Long term cost savings
- Emissions reduction
- Safety and security
- Occupant health, comfort and wellbeing
- Fingertip convenience

Internet of Things (IoT) Architecture

APPLICATION LAYER

Visualisation and analysis in the data centre/cloud using applicable software, and via a user interface that is easy to understand, efficient and actionable.

NETWORK LAYER

Gateway layer that connects IoT devices with the Application layer. Examples are ethernet, Wi-Fi, Near Field Communication (NFC) and Bluetooth.

PERCEPTION LAYER

Sensors and software to collect data points, and actuators to interact with IoT devices.

Access & Security

- Digital surveillance
- Face recognition
- Infrared body temperature sensor
- Electronic patrol system

Smart Systems

- Meeting room and shared space reservation
- Hot desking usage
- Attendance checking
- Payment linked to WeChat and Alipay
- Disinfectant robot

Smart Parking

- Automatic vehicle plate recognition camera
- Auto scan-and-pay for parking linked to WeChat and Alipay

Energy Management

- IoT-based energy consumption monitoring
- Rooftop solar energy monitoring on mobile app
- Energy meters & billing
- EV charging

Smart Heating, Ventilation and Air Conditioning (HVAC) Technology

- Centralised heating/cooling adjusted to zones and occupancy
- Temperature sensors calibrate indoor temperature
- Air ventilation control
- Smoke exhaust system

Lighting

- LED fixtures
- Movement sensor

Water

- Water Pumps
- Rainwater recycling system
- Flow meters

Fire safety

- Automatic fire alarm and fire control linkage system
- Fire hydrant and spray system

Elevators