

Containerized Data Centres

Kyiv, May 2012

Božidar Kobeščak
International Partner Manager



What is a Containerized Solution?

Pre-fabricated customized buildings

All necessary subsystems fully integrated

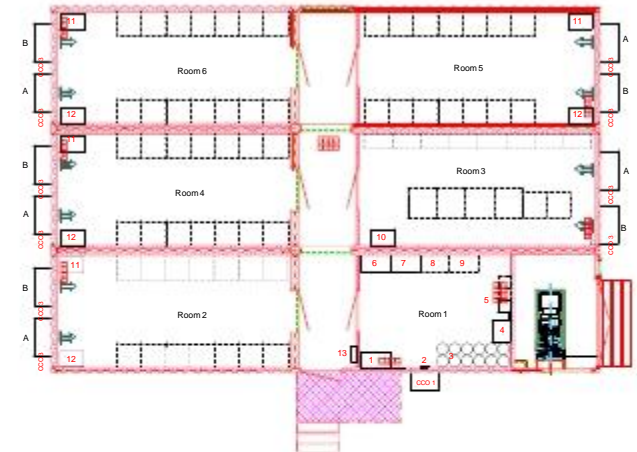
Designed and built in transportable,
pre-assembled modules

Supports numerous applications

(e.g. telecom, optical networks,
oil & gas, mining, military)

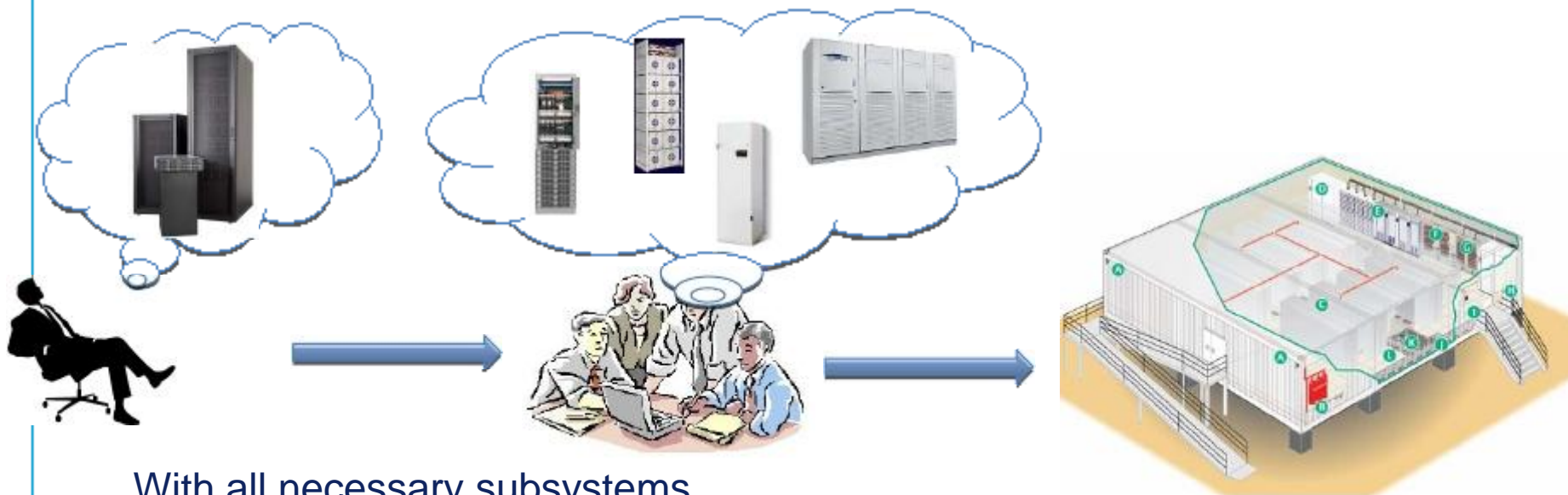
Re-assembled and cabling & piping
joined on site

Easily expandable to meet future demands



Key Features & Benefits

Engineered from the inside out



With all necessary subsystems

Guaranteed trouble-free and reliable operation

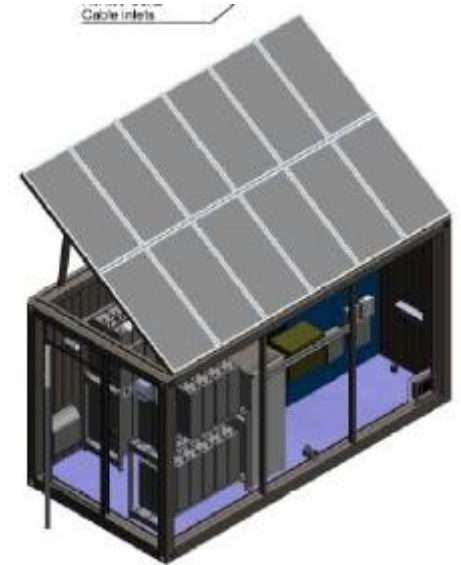
Factory equipped, tested and commissioned

Ensuring a fast rollout time and a consistently high level of quality

Key Features & Benefits



- Offers standard and custom designed solutions
- Integrates complete energy infrastructure; power and climate control



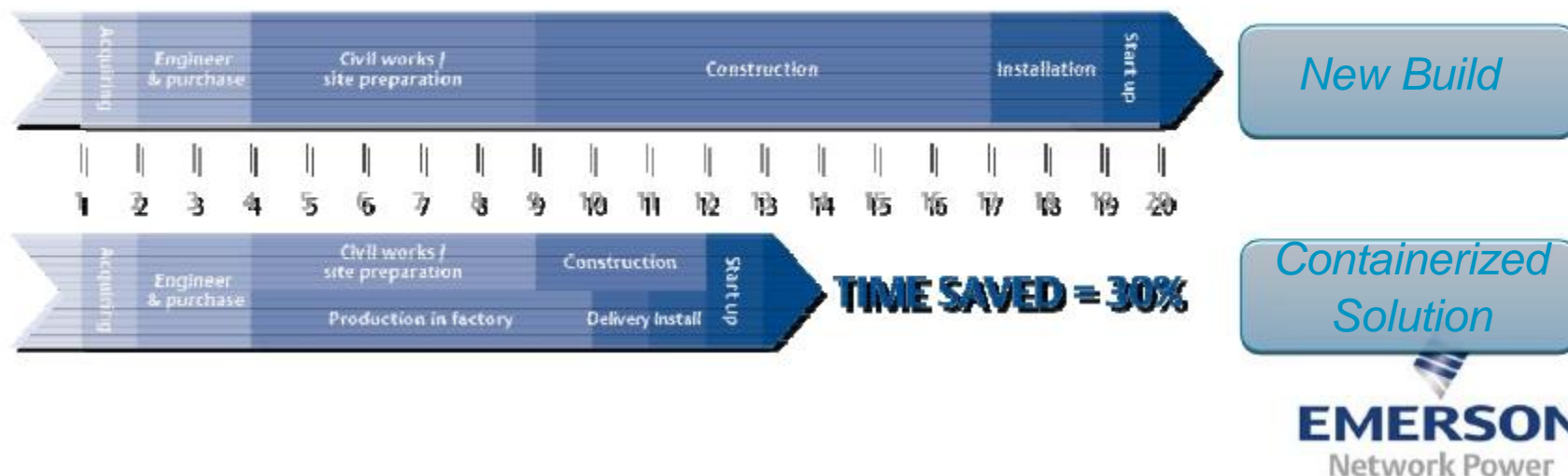
Equipment for various applications (telecom, optical networks, oil & gas, mining, military)

Easy shipping and handling
reduced the need for qualified personnel on site and lowers implementation costs



Why choose a Containerized Infrastructure Solution from Emerson?

- All subsystems fully integrated
 - pre-assembled and tested in factory to ensure trouble-free and reliable operation
 - higher operational efficiency with equipment engineered to work together
 - fast rollout time and a consistently high level of quality
- Emerson Network Power expertise in all parts of critical infrastructure and can support the complete solution
- Emerson global capabilities



Emerson Equipment for integration

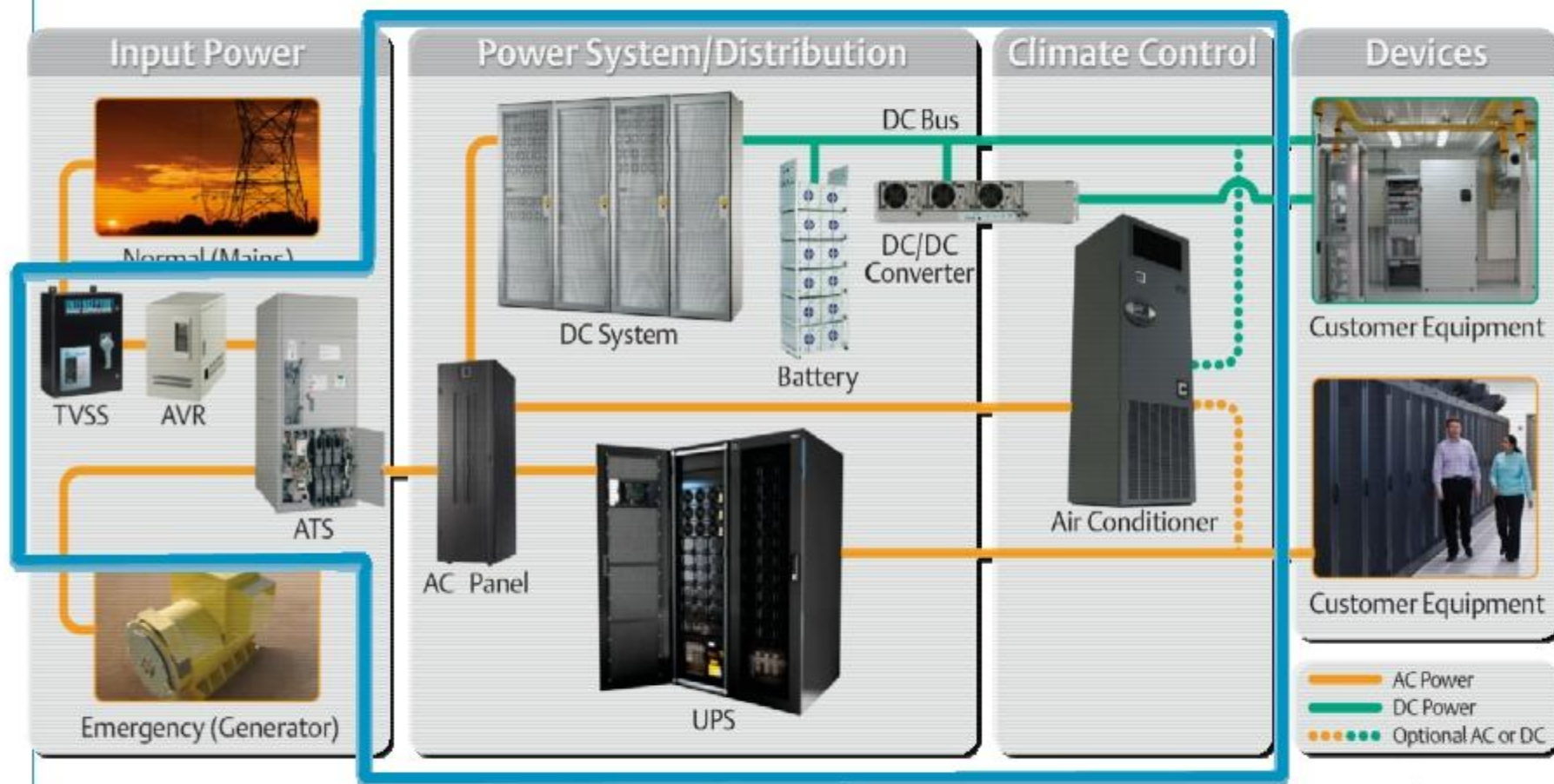
Major Emerson components

- Air Condition
- UPS
- Racks & equipment cabinets
- DC Power
- Batteries
- ATS

With this critical infrastructure we support the whole solution. We have expertise in all products within the shelter, Emerson equipment and 3rd party equipment.



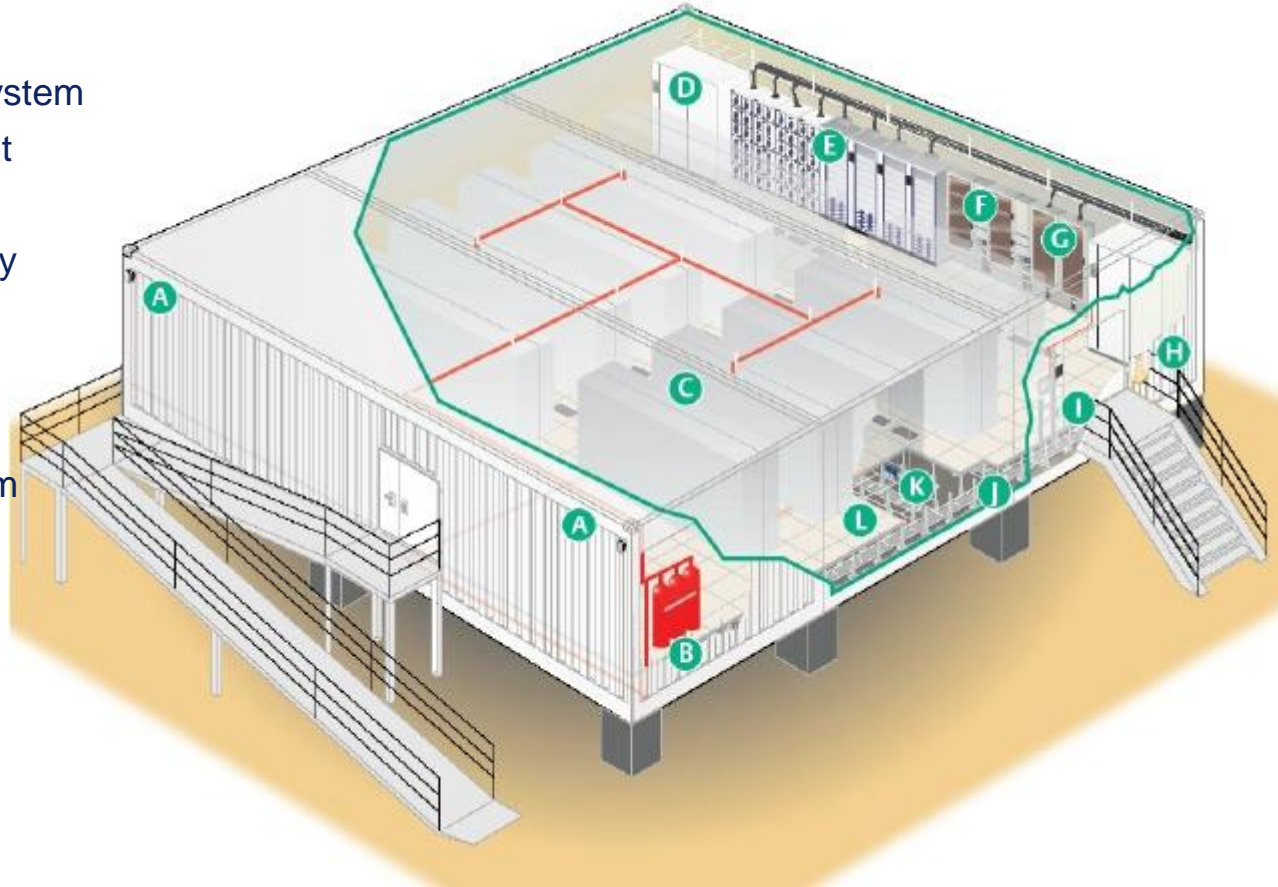
Containerized Infrastructure Topography



Emerson Equipment

Emerson Capabilities System Integration Expertise

- A – External flood lights
- B – Fire extinguishing system
- C – Customer equipment
- D – Climate system
- E – DC System & Battery
- F – AC Distribution
- G – AC distribution
- H – Earthing system
- I – Access control system
- J – Cableways
- K – Socket outlets
- L – Raised floor



Technical Capability Overview

Physical size:

- Range: 3m x 2m up to 600m²
- Average: 6m x 2,4m

Equipment handled:

- DC & AC Power
- Environmental control
- Emergency backup/generation
- Surge protection

Examples of job completed:

Small shelter for 2xBTS – 3 m²

- DC power system: 48300
- Batteries 2 x 200 Ah
- Air-condition : Liebert Hiross compact indoor unit 5 kW
- Lighting: standard, emergency

Energy Center 90 m² (12 m x 7,5 m)

- Power capacity: 2000 kVA
- Inputs: Main AC + 2 generators
- Transfer switch: (1) @ 3200 A and (2) @ 2500 A
- Backup generators: 2 x 1500 kVA
- Main switchboard bus bars: 3200 A
- Uninterruptible power supply
 - 460 kW DC power A + B sides
 - 300 kVA inverter A + B sides
- Battery backup 4hr (2 x 16000 AH / 48V)
- Air-condition: 6 x 15 kW direct expansion
- Automatic fire extinguishing system

MTX 400m² (30 x 13,5m)

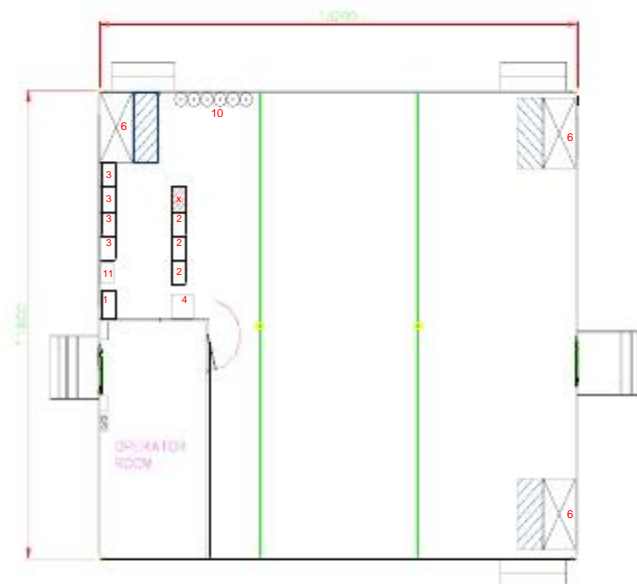
- NetSure 701 DC Power: A + B sides, 300 kW
- Inverter system: A+B sides, 60 kVA
- Main switchboard bus bars: 1600 A
- 2 hr Battery backup @ 100% load
- 8 x Liebert HPM cooling units
- Automatic fire extinguishing system

Modular Solution Concept

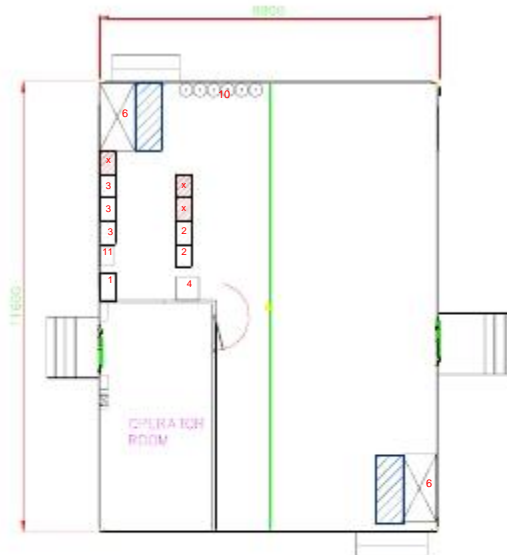
Standard sizes

Switch centres (MSC/BSC) applications

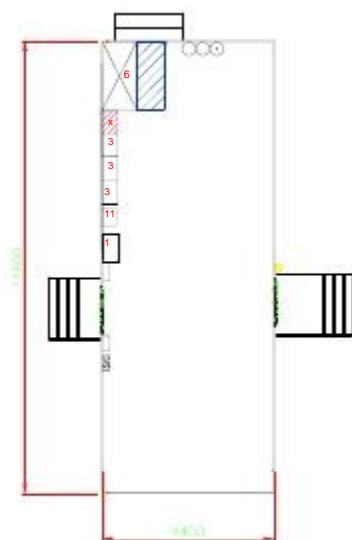
150 m²



100 m²



50 m²



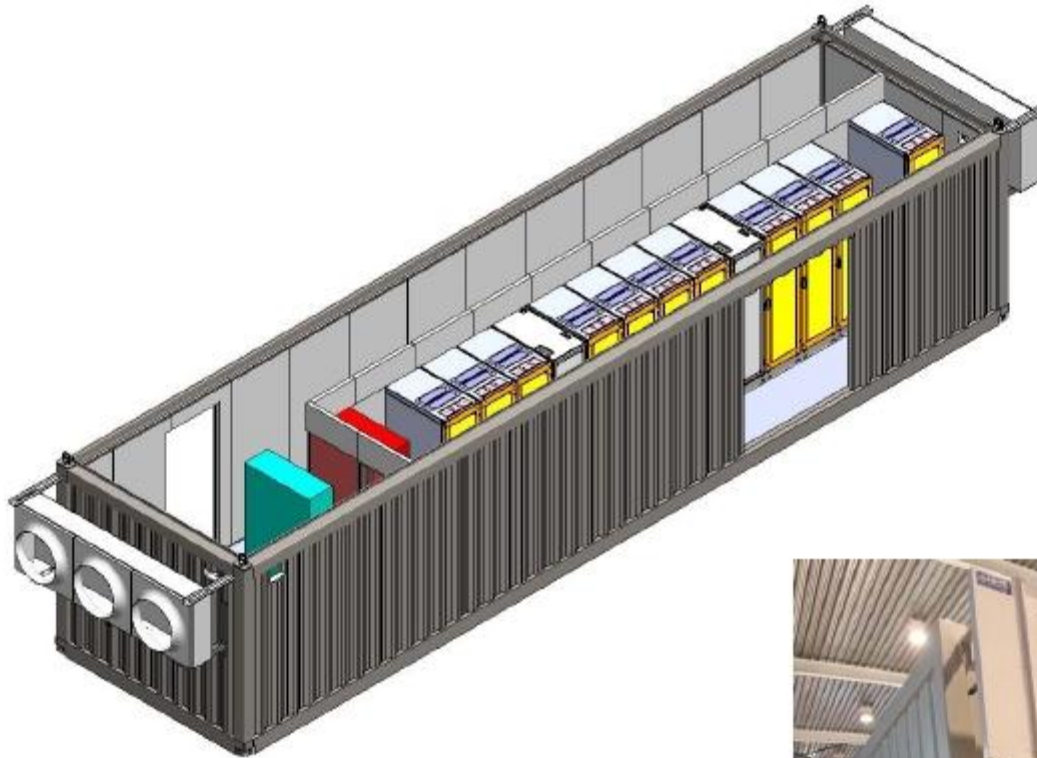
Realized projects

Kyiv, May 2012

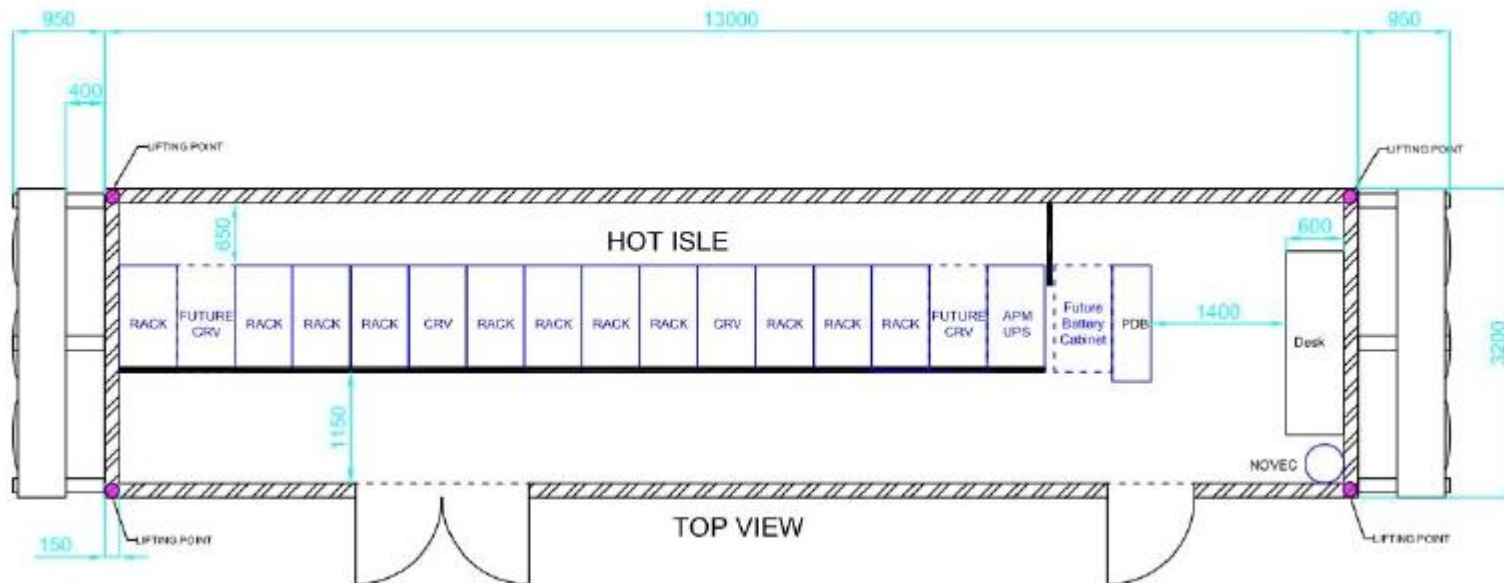
Božidar Kobeščak



DP World Dubai Data



DP World Dubai Data



HVAC system

- 2 Liebert CRV's

UPS system

- Liebert APM power tower with already 30kVa + 1 redundant module installed

Racks for customer equipment

- Knuerr Miracle plus Racks, 11 units

Electrical distribution

Fire alarm and extinguishing system

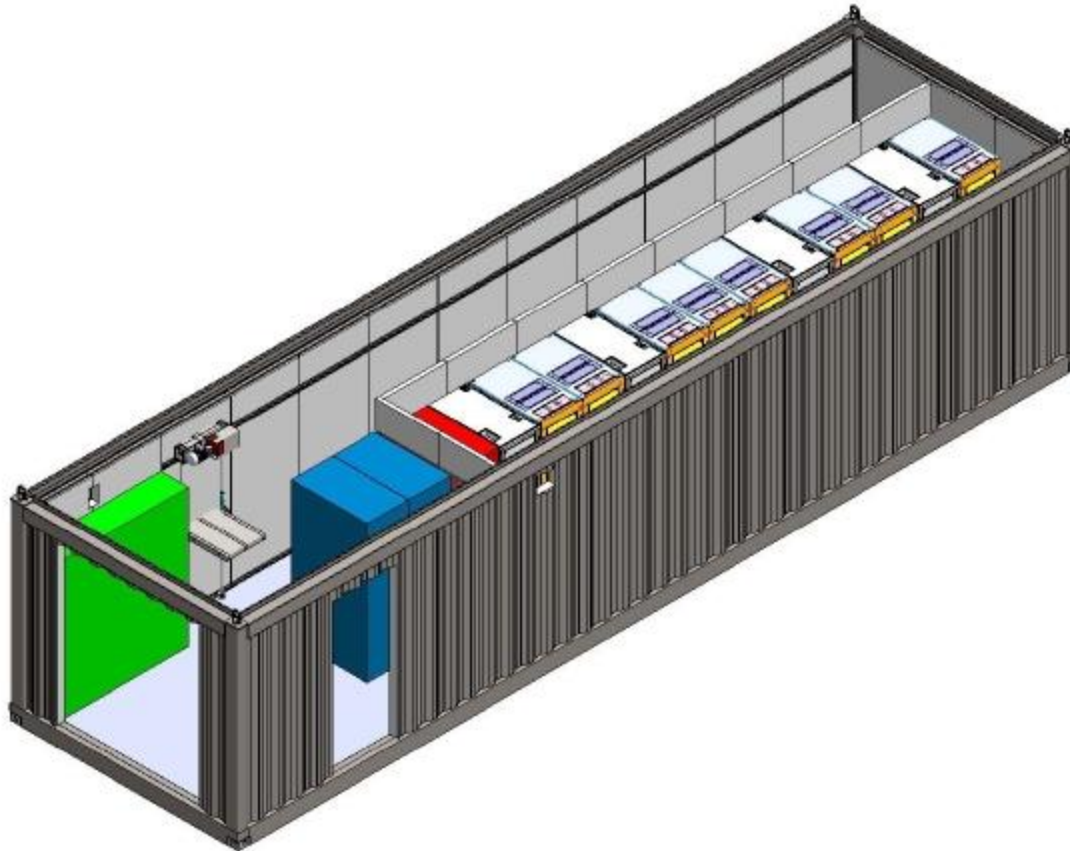
- NOVEC + VESDA

Expandable in future within container

DP World Dubai Data



EULEX Data



The floor plan shows a rectangular room with a total width of 3300 mm and a total length of 2000 mm. On the left wall, there are HVAC pipes, a condenser pipe, and a water pipe. The top wall features a Roxtec G6x1 cable entry and a Roxtec G6x2 cable entry. The bottom wall has a Roxtec G6x1 electric cable entry and a PDB. The room is filled with equipment racks: 10 CR035RA racks, 2 UPS 120kW units, and 2 Batt. kabinet units. A Fire Central unit and a MOVEC 1230 unit are located near the top right corner. Dimensions for the equipment and clearances are provided throughout the plan.

— 4 Liebert CRV's

- Liebert APM 120kVA+30kVA

- Knuerr Miracle Racks, 8 units

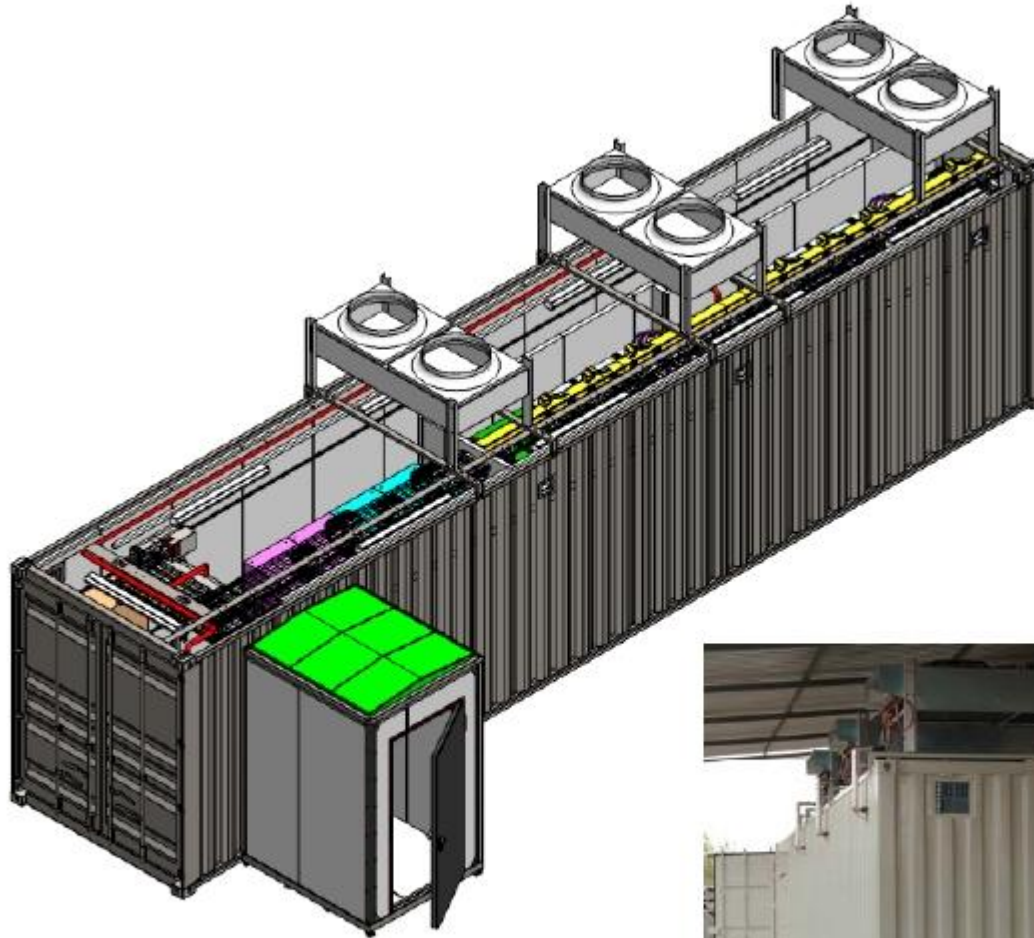
Fire alarm and extinguishing system



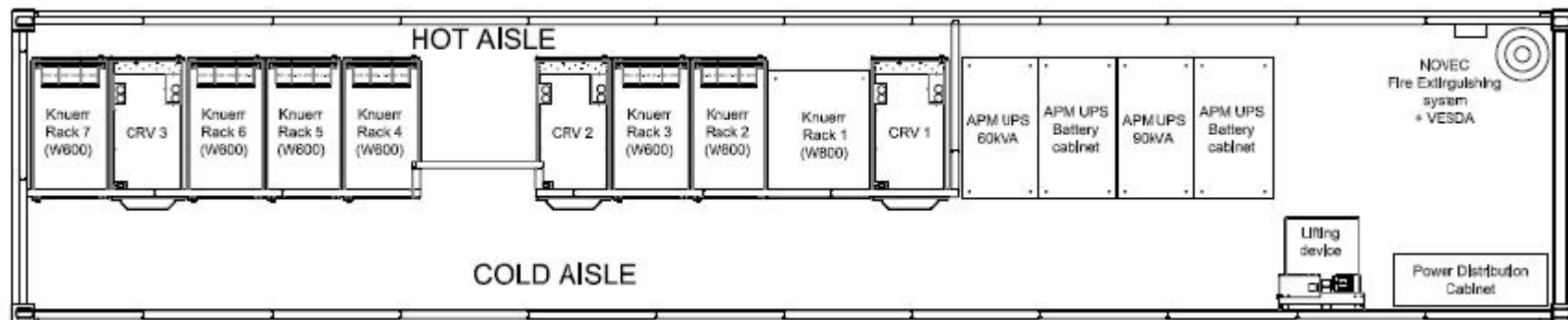
EULEX Data



Gazprom Data Center



Gazprom Data Center



3 CRV air conditioning units (N+1 redundancy)

60kVA APM UPS for load (N+1 redundancy) with additional battery cabinet

90kVA APM UPS for A/C units (N+1 redundancy) with additional battery cabinet

7 Knuerr Miracel Plus racks

14 Knuerr MPH PDUs

Power Distribution Cabinet with ASCO ATS

Lifting device for servers, batteries, power modules...

Fire detection and extinguishing system, NOVEC + VESDA

Access Control system

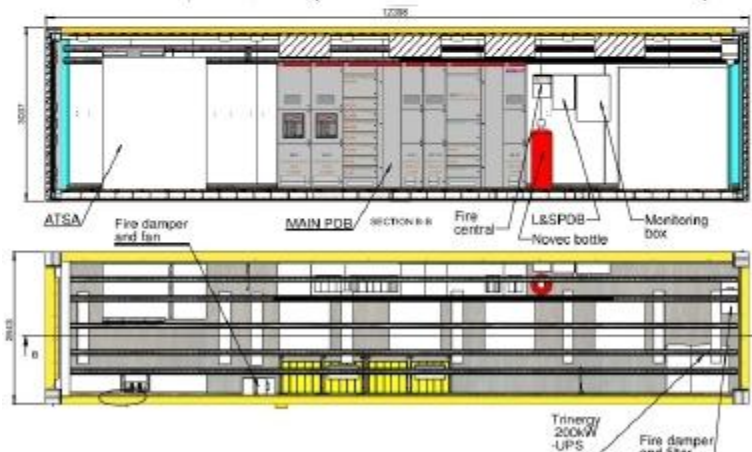
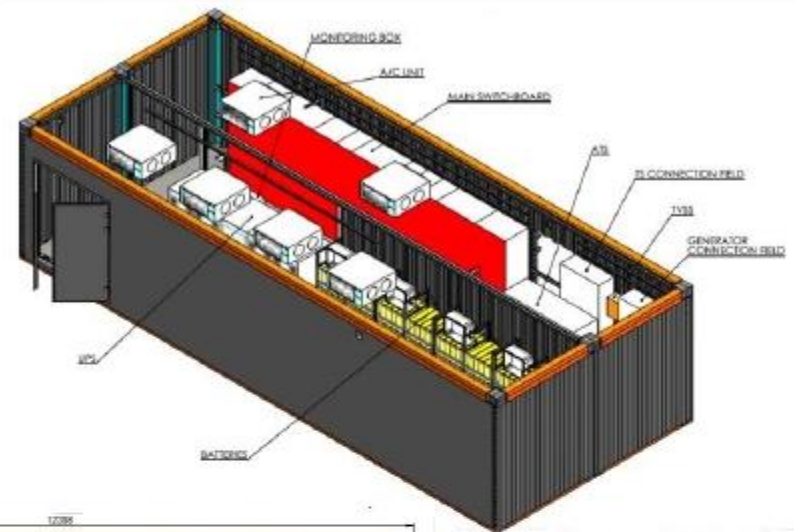
Gazprom Data Center



Power Module – NBN Australia

Two power modules per site (10 sites in total) provide a fully redundant 2N electrical infrastructure built in EMEA

- ASCO ATS Closed transition switch with maintenance bypass
- Main power distribution board
- Chloride UPS 200kW critical load supply with provision for future upgrade to 400kW critical load supply
- Battery backup, 15 min@200kW with provision for future upgrade to 15 min@400kW
- Liebert HPAC is ceiling mounted, split unit with free cooling and N+1 configuration
- Novec 1230 fire extinguishing, suitable for electrical equipment fire protection providing no negative impact on the environment



40' HQ data centre

