



Turn Key Data Centre Solutions

Master Power Technologies Proposal

Introduction

Award-winning secure power provider that specialises in **quality backup power** and **data centre solutions** where **uptime** is critical. We specialise in offering businesses **clean and reliable** backup power through affordable **engineered solutions** and turnkey projects, to **keep critical equipment live** and to ensure customer sustainability.



Secure Power

- Generators
- Generator Rentals
- UPS
- Batteries
- Rectifiers
- Power Distribution
- Turnkey Power Solutions
- Energy Centres
- Solar



Servicing & Support

- Emergency Support
- Maintenance
- After Sales Support & SLAs
- UPS Testing
- Generator Testing
- Commissioning & Installations



Monitoring & Management (AIVA)

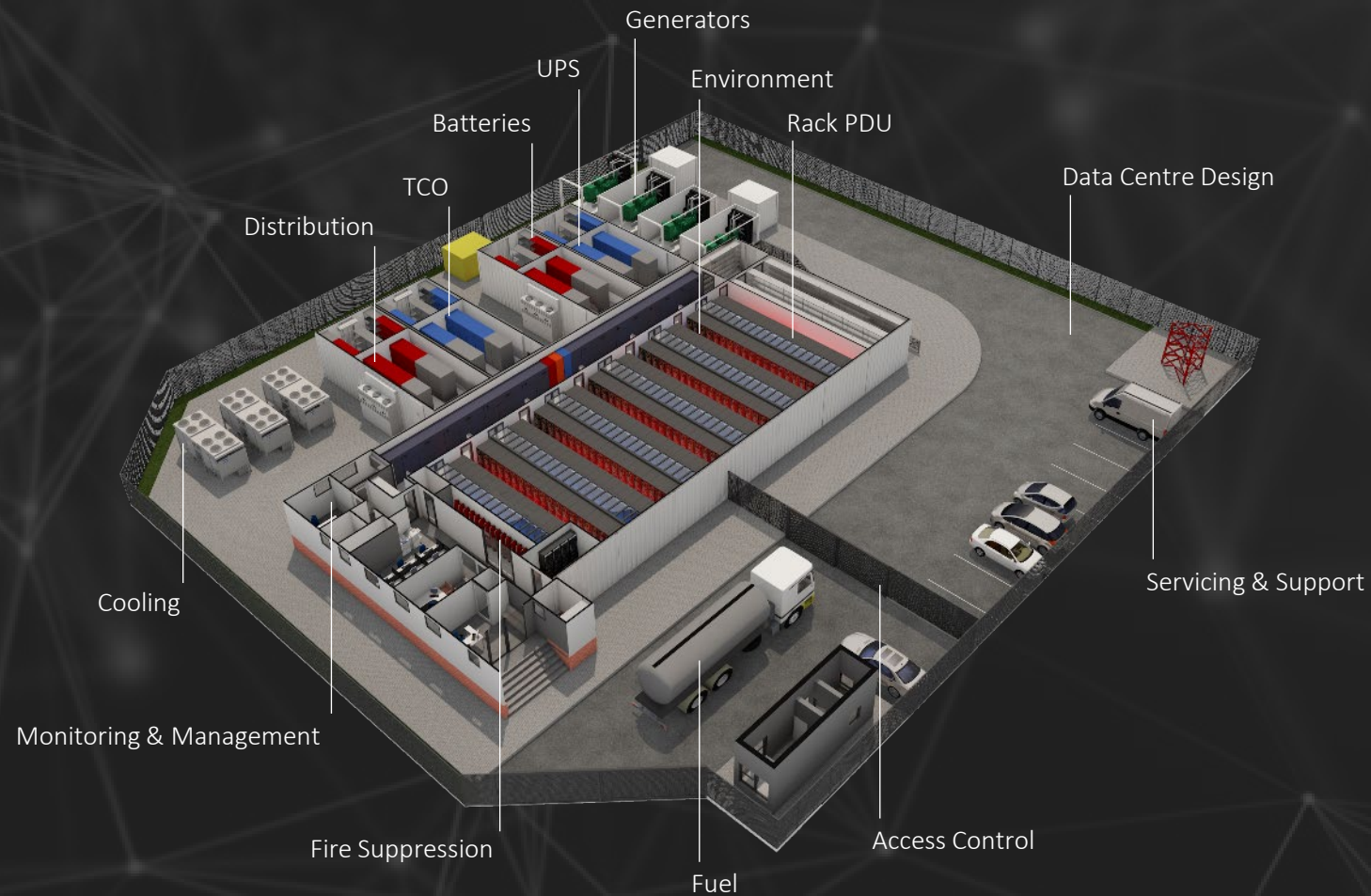
- Battery Monitoring
- Generator & Fuel Monitoring
- Critical Infrastructure Monitoring & Management
- Dual NOC
- Triple Changeover



Data Centres

- Design
- Manufacture & Build
- Power & Cooling
- Critical Infrastructure
- Power Distribution

Data Centre Solutions Overview



Turnkey Solutions



Design

Experienced engineers across all secure power disciplines.



Manufacturing

2000m² Panel Shop
7000m² Module & Generator Shop .



Testing

Commissioning, testing handover and training.



Supply

Partnership with international OEMs for best quality products.



Remote Monitoring

Internally developed hardware & NOC Software.
New Life



After Sales Support

Service, maintenance, problem solving and breakdowns.

Quality and Accreditation

At Master Power, we pride ourselves on a company that is known for **constantly improving** our services and exceeding customer expectations. We are **compliant with international standards** and have **won multiple awards** across Africa from the world-renowned Frosh & Sullivan for our innovative and industry leading solutions. We have a total of 9 Accredited Tier Designers and 2 Accredited Operation Specialists across various disciplines.



Company Videos

MADE

Mechanical | Architecture | Drafting | Electrical

Data Centre Solutions

[Video YouTube Link](#)

AIVA

Advanced Infrastructure Visual Analytics

Remote Monitoring & Management Solutions

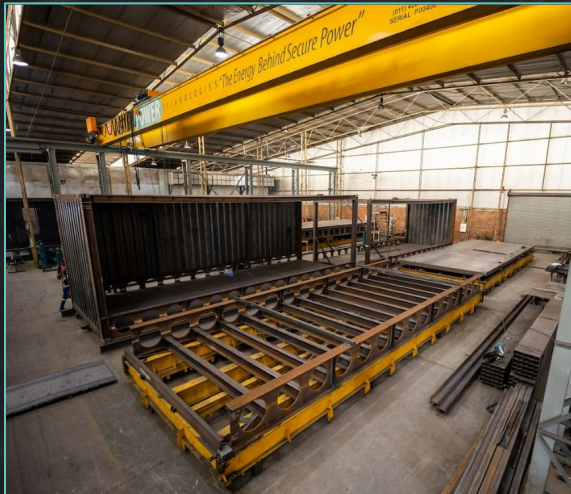
[Video YouTube Link](#)

Mechanical Manufacturing

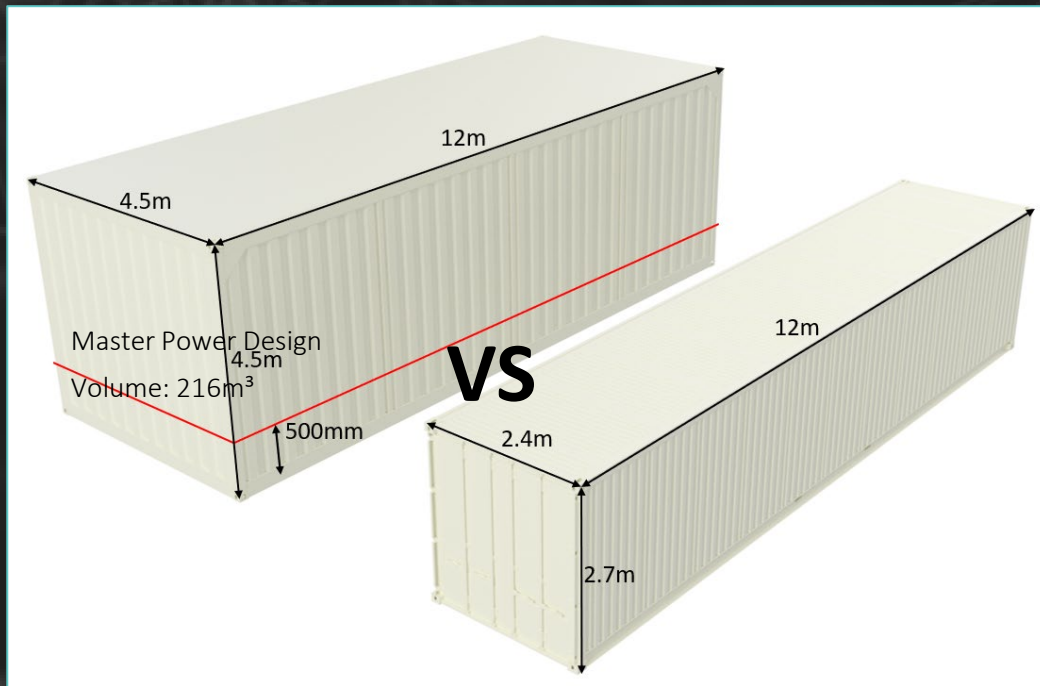
7000m² Mechanical Manufacturing Facility – Randburg, South Africa

For manufacture of:

- Steel Modules
- Specialised generator sets
- The facility includes a generator test facility for 4MW



Purpose Build Modules



Master Power Technologies Steel Modules Overview

- Custom Built to Sizes
- Typically, 12.35m x 4.45m x 3.6m (L x W x H)
- Hot rolled steel for stronger design & durability
- Greater flexibility for using in-row or down-blow cooling systems
- 2.8 Times bigger than a 12m H-Cube shipping container

ISO Shipping container

Smaller volume 77m³

Purpose Build Modules

Steel Module Components



Base Frame Structure



5mm Steel Plate (Floor Surface)



The roof structure supports 18mm marine plyboard for mounting equipment like insulation, lighting etc.



5mm Steel Plate (Roof Surface)



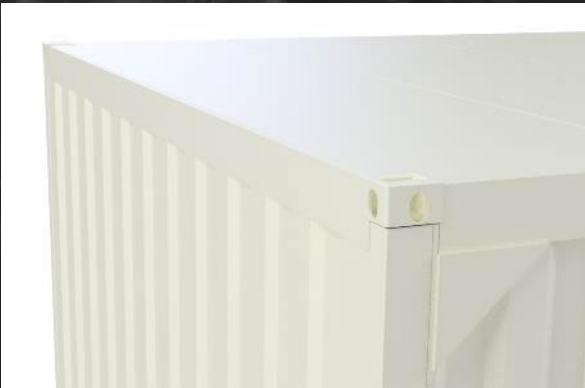
When both the base & roof are read, the roof section is supported by a crane above the base to install the uprights. (Upright length dependent on design height required).



Bracing is installed to reduce dynamic stresses during transportation. The centre uprights are not required to support the roof structure once on site. Multi-level modules require a single centre upright for support.

Purpose Build Modules

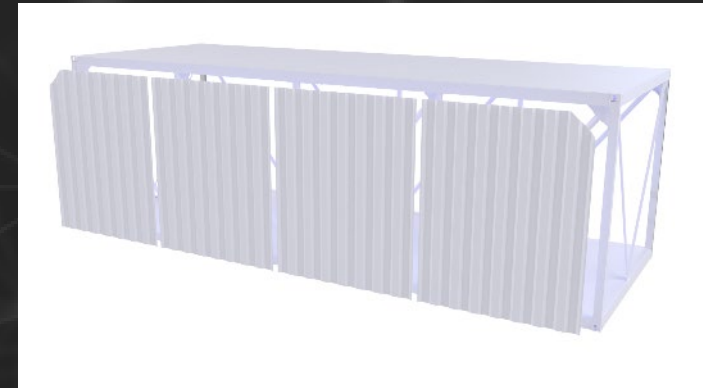
Steel Module Components Continued



- Each Module has 4 corners casting for lifting
- Maximum static loading of 45 Tons
- Maximum dynamic C3 loading 8 Tons
- Structure requires no specialised lifting frames or equipment
- Hassel free lifting and transport



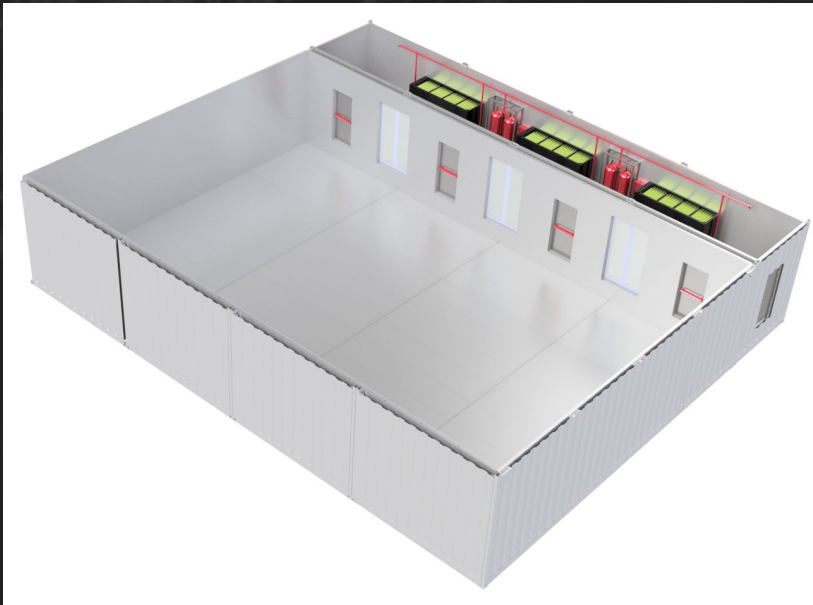
- Frames for fresh air, HVAC & doors are installed to support entry points
- Frames are Followed by the 3mm walling, which is only installed on relevant sides



- Walls are only installed on the outer structure
- Walls can either be permanently installed to bolted for easy expansion in the future

Purpose Build Modules

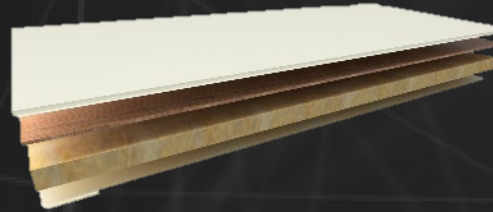
Steel Module Components – Complete Site



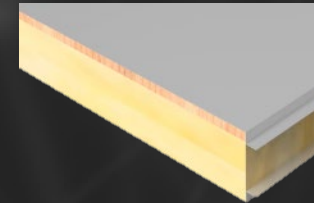
Internal rooms or passages can be created within the open area or by adding additional modules

- 4 Modules of 50m² placed side by side to produce an open data area of 200m².
- Only the outer 2 modules have the 12m side walls

Steel Module Components – Floor Insulation



- Top 0,5mm Chrome sheet
- 18mm Marine Plywood
- Rockwool mineral wool
- Bottom 0,5mm Chrome sheet

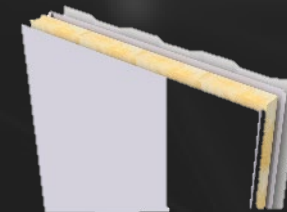


- Mineral wool specifications
- 80mm 1-hour fire rating
- 150mm 2-hour fire rating

Steel Module Components – Floor Insulation



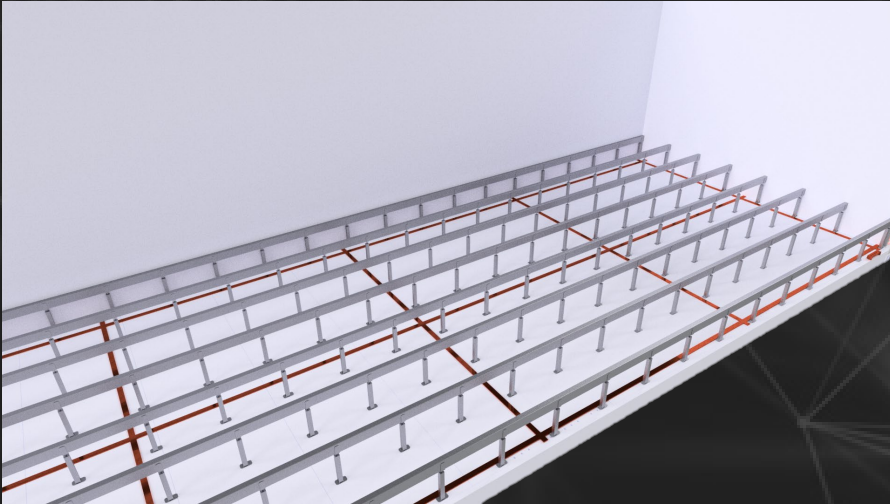
- Steel module wall 3mm
- Outer 3mm Chrome sheet
- Inner 0,5mm Chrome sheet
- Rockwool mineral wool



- Mineral wool specifications
- 80mm 1-hour fire rating
- 150mm 2-hour fire rating

Purpose Build Modules

Steel Module Components – Raised Floor



- The raised floor is mounted directly to the insulation
- The floor void created is used for cable reticulation and the cooling system for down blower HVAC
- Earthing and a fire system are also installed below the raised floor

Earthing Net Below Raised Floor

- 16mm bare copper wire forming a 300mm x 300mm Earthing Net below the floor for earthing of all equipment in the data centre

Turnkey Data Centres

Overhead Tray System



- Overhead cables tray system for A & B feeds on separate routes
- This system also provides data cables between racks
- Fibre guides can also be installed from the roof

Fire Detection



- Fire detection via air sampling for smoke and optical sensors for open flames
- Fire panel combined with data centre remote monitoring system
- VESDA air sampling control
- Optical Fire sensor
- Master Power offers both high and low-pressure suppression systems
- FM200, Inergen or Novac
- Fire cylinder designs for in the data centre mounting or separate area

Fire Detection



- Full Access Control system with Bio Metrics and card reader integrated into CCTV monitoring platform

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Site Installation



- Once ready for shipping, all equipment is secured in the modules, bracing is installed & temporary walls are installed
- Finally, a tarpaulin over the complete module as it's trucked to the site or taken to a harbour
- Once on site, the modules are rigged into place on concrete pillars at 6 points on a single 12m module

MASTER
POWER
TECHNOLOGIES

Thank You