

Generator Sub Stations



Sub stations from around 500 to 3300kVA (call us to discuss larger systems and synchronised / parallel operation).

An uninterrupted high or low voltage power supply is crucial to many businesses and industries. Our sub stations are providing primary or emergency standby power in hospitals, prisons, control centres, oil rigs, factories and data centres.

Numerous control options are available including load sharing, remote and synchronised parallel operation.



Custom Sub Stations



Mains High Voltage Integration & Automatic Changeover



Fused & Switched Distribution Panels



CO2 Fire Protection Smoke & Heat Sensors Fire Wire Drop-Valve



Internal / External Emergency & Task Lighting

Typical Control & Monitoring Features

Mains to generator automatic change-over, output ratings, engine temperature, engine over speed, common shutdown, oil status, remote operation & monitoring. All these features can be integrated with most existing building management systems.

Optional features can include SMS text warnings and procedural text messages regarding the sub station's current status.

Bulk Fuel Storage

Where possible, housed in the same section as the generator would be a fuel tank designed to allow seven days uninterrupted operation. In larger systems the bulk fuel tanks may be supplied in a separate container.

LV Free Standing Distribution Panels

Typically installed in our generator sub stations and containerised generators, we can supply bespoke distribution panels for domestic, business and industrial applications.

High Voltage Transformer & Mains Integration

If your facility is utilising a High Voltage mains incoming cable (eg. 11kv) we can supply and install all the necessary equipment including the HV transformer and undertake all subsequent ground works.



Options/Features

- Building management system integration
- Electrical & mechanical interlocked changeover
- Switched distribution with power factor correction
- Fire protection with CO2 discharge & auto fuel shut-off system
- Internal & external task & emergency lighting
- Humidity control
- UPS systems and integration with existing systems
- Remote operation with SMS text warnings
- Noise reduction down to 60dB(A) at 1 metre

**Diesel Generators
To Power *YOUR* World**

Generator



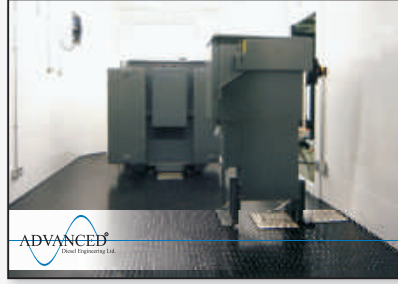
Stock generator at ADE warehouse

With hundreds of stock units, ADE offer a wide selection of medium to high powered diesel and gas generators for our mains integrated sub stations.

Typical features can include:
HV or LV output, standard & tropical configuration, economy specifications & low pollution specifications.

Engine shown: Cummins QST30 1000kVA

HV Transformer



Sub station HV room

The HV transformer is installed between the incoming high voltage mains supply and the generator change over. In the event of a complete mains power loss the control system will start the engine and change over to the generator supply once up to speed.

Shown above: HV transformer and SF₆ isolated switch disconnecter.

Switch Gear

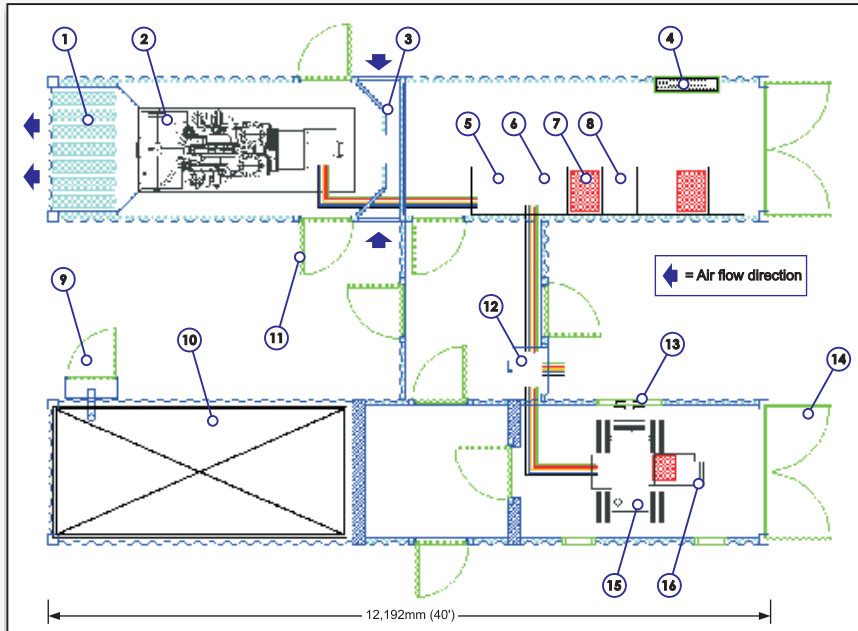


Switched distribution & interlocked change over

Distribution panels are located above cable trenches to distribute power to the essential facilities on site.

Typical features can include:
Fused distribution switches, power factor correction, interlocked change overs, BMS integration, engine control/monitoring and remote status broadcasting.

Typical 'H' Section Sub Station Arrangement



Features/Options*

- 1 - Air outlet and noise attenuator
- 2 - Diesel engine & alternator
- 3 - Air inlet and noise attenuator
- 4 - Air conditioning unit
- 5 - Generator in-come (inc. changeover)
- 6 - Mains in-come (inc. changeover)
- 7 - Outgoing cableway (via cable trench)
- 8 - Outgoing fused switch panels
- 9 - Fuel fill cabinet
- 10 - Bulk fuel tank (7 days as standard)
- 11 - Personnel doors
- 12 - Switched connection for utilising a temporary hire generator
- 13 - Cooling fan for transformer room
- 14 - Standard container doors
- 15 - HV transformer (mains in-come, via cable trench)
- 16 - Isolated switch disconnecter

* All features and options are subject to project requirements

Telecoms Data Centre



Pre delivery at ADE factory

This 1400kVA 'in-line' configuration was required due to restricted access to the fuel point and limited area for the specified sub station.

This resulted in the requirement of a full leak detection system and a pipe-in-pipe duplex pump system to direct the fuel nearly 30 meters to the diesel generator.

HM Prisons - Ranby YO1



Load testing at ADE factory

Accommodating a 23,000 litre bulk fuel tank, the above system required a roof mounted air inlet and noise attenuator scoop to keep the noise levels below 65dB(A) at 1 metre.

This 1,000kVA system is one of two 'H' section sub stations at HMP Ranby, supplied by Advanced Diesel Engineering Ltd.

HM Prisons - Ashwell



PDI checking at ADE factory

A 900kVA system specification. The emergency standby sub station at HMP Ashwell allowed for our standard side mounted air inlets & attenuators.

The centre corridor housed an 8,000 litre fuel tank whilst the rest of the available space was used for air conditioned switched distribution panels and the HV transformer room.