

powerworks

SECURE MODULAR COMPUTER ROOM

POWERWORKS MODULAR COMPUTER ROOM PROVIDING CERTIFIED SECURE PROTECTION FOR SERVERS OR OTHER CRITICAL HARDWARE, COMPLETE WITH UPS, AIR CONDITIONING, FIRE SUPPRESSION, SECURE DOOR ACCESS, RAISED FLOORING AND ELECTRICAL POWER DISTRIBUTION.



BENEFITS AND FEATURES

- The design and construction methods are tested in accordance with DIN4102 F90 to meet or surpass the requirements for fire integrity as set out in European standard EN 1047.
- Protection against fire, explosion, water, dust smoke and fumes.
- Self contained support systems to maintain the controlled environment and provide backup power and lighting in the event of an external failure.
- High physical security with steel skin facing to wall and door panels. Electronic access control can log entry and exit of personnel.
- Fully modular, with fast, clean build and fit-out. The construction system allows future expansion to meet your continuing growth.
- Data cable entry and exit by way of fire resistant transition boxes. Further cables can be added at any time.
- Excellent sound proofing qualities.
- Fully finished wipe clean surfaces, no further decorating required.
- Turnkey solution to ensure the security of your critical systems and data. Powerworks will manage the whole project from design, through to the installation of your equipment.

OUR SECURE ROOMS CAN BE BUILT QUICKLY AND CLEANLY TO ANY SIZE AND CAN BE RECONFIGURED, EXTENDED OR COMPLETELY RE-LOCATED AT ANY TIME. THE UNIQUE 'STEEL SANDWICH' MODULAR PANEL WALLS, CEILING AND (IF REQUIRED) FLOOR CAN BE CONSTRUCTED AS A FREESTANDING STRUCTURE WITHIN AN EXISTING INTERNAL SPACE OR AS A WEATHERPROOF EXTERNAL UNIT. THE INTERNAL PANELS PROVIDE A WIPE CLEAN, FULLY FINISHED SURFACE THAT REQUIRES NO FURTHER DECORATION.

We provide a complete turnkey solution to meet your data security requirements with the fit-out including all electrical services, backup power and lighting, close control air conditioning as well as automatic fire protection and secure access systems. Furthermore we can also handle your structured data cabling needs if you so require.

TURNKEY INSTALLATION

- Room construction
- UPS System
- Electrical distribution
- Raised floor
- Air conditioning
- Lighting
- Generator
- Fire suppression



STANDARDS FOR COMPUTING ENVIRONMENTS

The European standard EN 1047 recommends maximum temperature levels of 55°C for magnetic media and 70°C for hardware components – with a maximum humidity level of 85% in both cases – when tested in accordance with DIN 4102 F90.

Traditional F90 (90 minute) methods of construction – fire retardant panels or concrete/brick walls – are only designed to keep flames at bay for the 90 minutes. They do not guarantee internal temperature/humidity levels in the event of a fire external to the 'protected space'.

(A concrete walled enclosure will lead to an internal temperature of 200°C and humidity levels of 100% when tested in accordance with DIN 4102 after 90 minutes). Once the external skin is breached, internal fire suppression systems become totally ineffective. Hence most computer room environments are designed to contain or suppress a fire within the protected space but not protect against a fire outside the protected space. In addition, points of access (personnel, cables or other services) are areas of weakness in the event of an external fire – allowing ingress the fire, acrid gases and fire fighting water.

PROTECTION AND OPERATIONAL STANDARDS



The standards provided depend on which final room version is chosen. The 'Powerworks Ultimate Security room' which is a complete 6 sided unit (walls, ceiling and floor) will protect to an internal temperature/humidity of 40°C/60% under EN4107/ DIN4102. The 'Powerworks Modular IT Room', which consists of steel sandwich panel walls and ceiling only – built on an existing concrete slab – protects to a temperature

humidity of 55°C/65% when tested under BS476 pt. 22. Both versions have fully tested secure/ firesafe door systems and provide fully protected cable transition boxes to allow protected entry of cables and other services.

With our track record of successful partnerships with air conditioning, flooring and fire suppression contractors, we can design and build your whole project from the ground up. We can provide a complete turnkey solution with all electrical work carried out by our own NIC EIC approved electrical engineers..

The 'Powerworks Modular IT Room' system also provides the ideal solution for secure, insulated and fireproof enclosures for

archival storage, food storage and manufacture or clean rooms for pharmaceutical research and development.

The fact that the panels can be demounted and relocated is especially worth considering if you are located in leased or listed premises and can also mean that a 25% writing down allowance can be claimed. In addition, some small to medium sized businesses may benefit further by a 40% first year initial allowance.

In any case, this is an investment that must be considered to ensure the survival of your organisation in the event of a major incident.

SUMMARY OF ADVANTAGES OVER CONVENTIONAL CONSTRUCTION

'POWERWORKS MODULAR IT ROOM'

- 1 Fully water resistant
- 2 Steel skin less likely to damage
- 3 Heat resistance very good Approved standard class 0 surface spread of flame
- 4 Assembles very quickly
- 5 Minimal dust produced during construction
- 6 Excellent soundproofing qualities
- 7 Over 80% panels reusable
- 8 Surface is wipe clean pre-finished to customer specification.
- 9 Ceiling panels able to tolerate high loads (building collapse, etc)
- 10 Panels will remain intact during a fire
- 11 Steel shell provide a high level of physical security
- 12 Powerworks system designed to stop internal and external spread of flame

CONVENTIONAL F90 ROOM

- 1 Not water resistant
- 2 Susceptible to damage
- 3 Heat resistant minimal designed to halt the progress of flame rather than heat
- 4 Long build time
- 5 Dirty in construction
- 6 Poor soundproofing qualities
- 7 Not reusable once installed
- 8 Requires surface decoration
- 9 Ceiling can support little structural loading
- 10 Panels can detach during a fire
- 11 Poor physical security
- 12 Designed to stop spread of flame from only a room

POWERWORKS MODULAR IT ROOM COMPONENT SPECIFICATION

1. Wall Panels

Thickness: 100mm

Core: Pyro-foam Core

Fire Properties: Non combustible core with Class 1 Surface Spread of Flame Fire Rated to BS476/22 One Hour Insulation and Integrity

Insulation Value: u value of 0.39 W/sq.m.k

Physical Properties: In accordance with BS 3837

Panels are laid into a galvanised U channel bolted and sealed to the site floor.

2. Ceiling Design

Thickness: 100mm

Core: Pyro-foam Core

Fire Properties: Non combustible core with Class 1 Surface Spread of Flame Fire Rated to BS476/22 One Hour Insulation & and Integrity

Insulation Value: u value of 0.39 W/sq.m.k

Physical Properties: In accordance with BS 3837

Walls and partitions will support the ceiling panels. For spans above 7.5m, additional structural steel supports are included in the specification/costing. All insulated ceilings (unless otherwise stated) are designed as "walk on" structures.

3. Panel Facing

Internal: 0.55 thick hot dipped galvanised mild steel substrate with a white Stelvatite Laminat.

External & Unexposed: Self colour primer coat on a galvanised substrate.

4. Joint Detail

Fire rated panels: Each panel face interlocks with its neighbour ensuring no exposure of the core can occur. These are then secured using a structural steel angle. Joints are then finished with a white silicone sealant on completion. Joints can be broken for reconfiguration/extension without damage to adjacent panels.

5. Cable/Service Entry

Cable transition boxes provide sealed protected entry to the room. Additional blocks/cables can be added at any time. Alternatively, heat protective sealant material can be used directly to protect any openings around points of entry.

ADDITIONAL SERVICES

UPS

A full range of UPS systems from 1kVA to 300kVA and above, configured to meet your needs.

Generators

Diesel Generators provide extended backup time for both the UPS and other critical systems.

Modular IT Rooms

Custom built and fully fitted out high integrity computer rooms offering excellent protection against fire, flood and other environmental risks.

Electrical Installation

Complete end to end installation service to the highest standards.

Maintenance and Emergency Service

24 hours a day x 7 days a week engineering support.

Remote Monitoring and Software

Complete range of network ready monitoring and automatic service shutdown software.

6. Door Sets

Leaf Construction: Zintec coated sheet steel faces enclose a 40mm inert insulated core with suitable 2mm steel stiffeners.

Total leaf thickness: 43mm.

On single leaf door sets the leaf is fitted with an Assa single spring lever/latch system.

On double leaf door sets, the active leaf is fitted as above with the inactive leaf top fitted with a spring action shoot bolt.

Frame Construction: Each door leaf is pre hung by 3 pairs of McGill heavy duty hinges screwed to leaf and welded to the 2.5mm Glavafroind coated pre-formed steel frame. The 10mm x 75mm bottom sill member is designed for flush mounting within the floor.

Self Closing: Available if required by hydraulic overhead closers or totally enclosed rising hinges. On double leaf door sets, a Dorma SR390 leaf selector is fitted to ensure closure in correct sequence.

7. Flooring

Full access computer room flooring, raised to accommodate the height of the under-floor for air-conditioning ducts. Medium duty flooring tile with anti-static fully bonded vinyl floor covering, generally in grey.

Tests

Independently tested at the Warrington Fire Research Centre to BS 476 Part 8: 1972 and achieved the following results:

Stability: 240 minutes (test discontinued at this point)

Integrity: 148 minutes

Insulation: 20 minutes

Certificate No: WRSCI 33487

Maximum tested structural opening size: 2132mm wide x 2164 mm high

Larger door sets can be provided with approval gained from the appropriate authorities.

Optional 2 hour tested vision panels can be provided in doors or wall panels.

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