

Tempest Shielding



European EMC Products



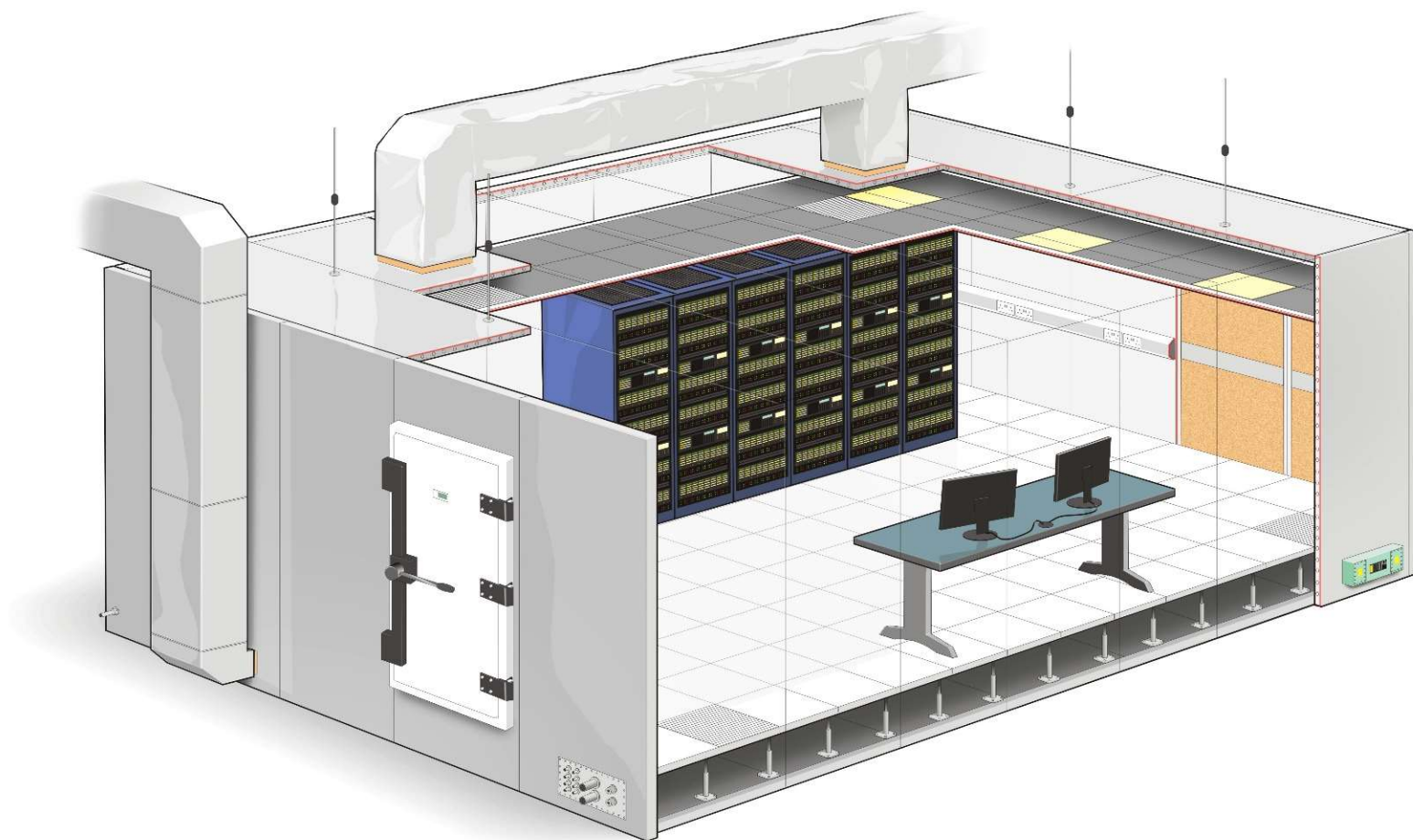
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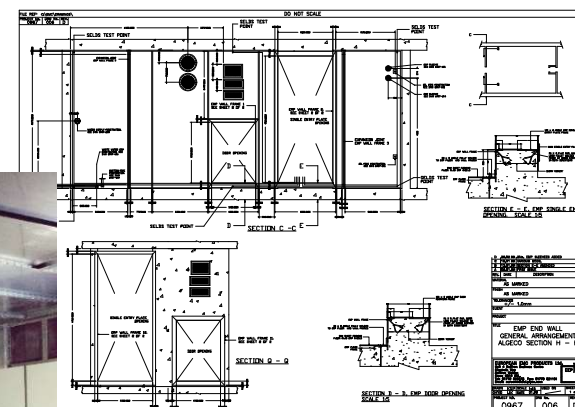
MED/TEM/GEN 6032 08/21 V1





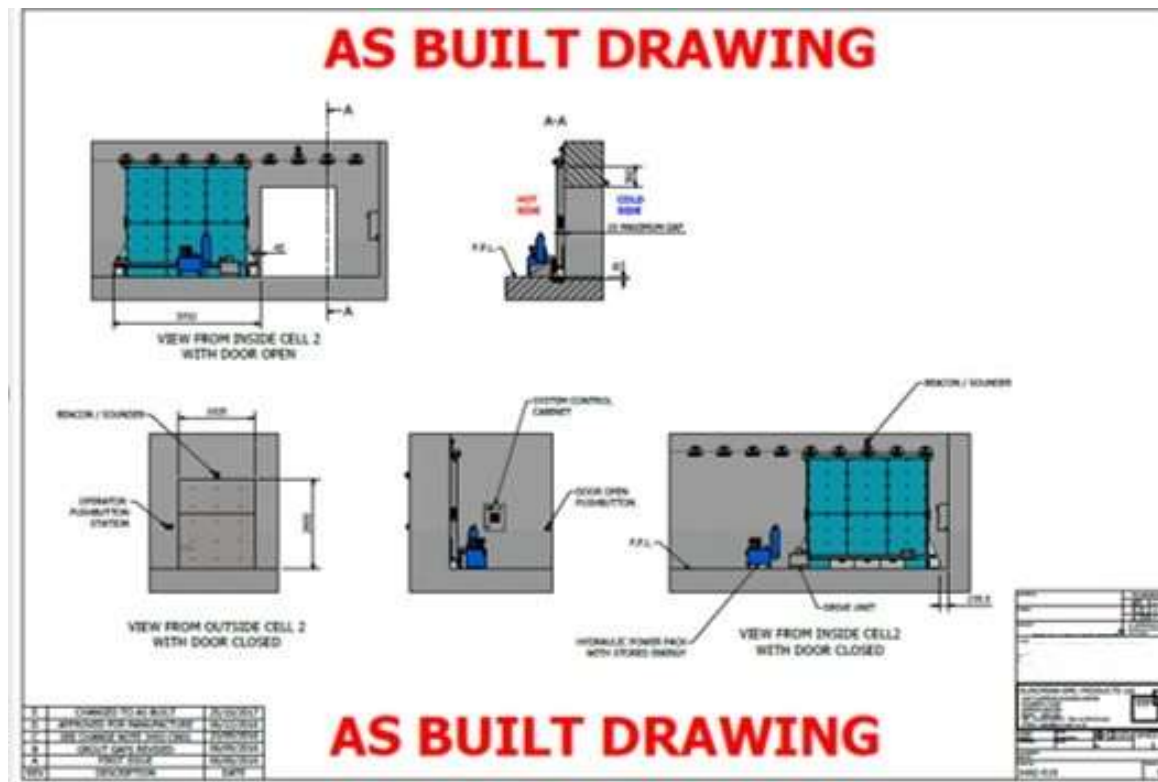
What Services Do We Offer?

- Full Design, Consultancy and Advice Service Regarding Tempest, RF & EMP Protection.
- The Supply of Specialist Shielding Components.
- Full Installation, or Supervised Installation Service, of Shielded Enclosures.
- Comprehensive Testing Services of Shielding Installations.





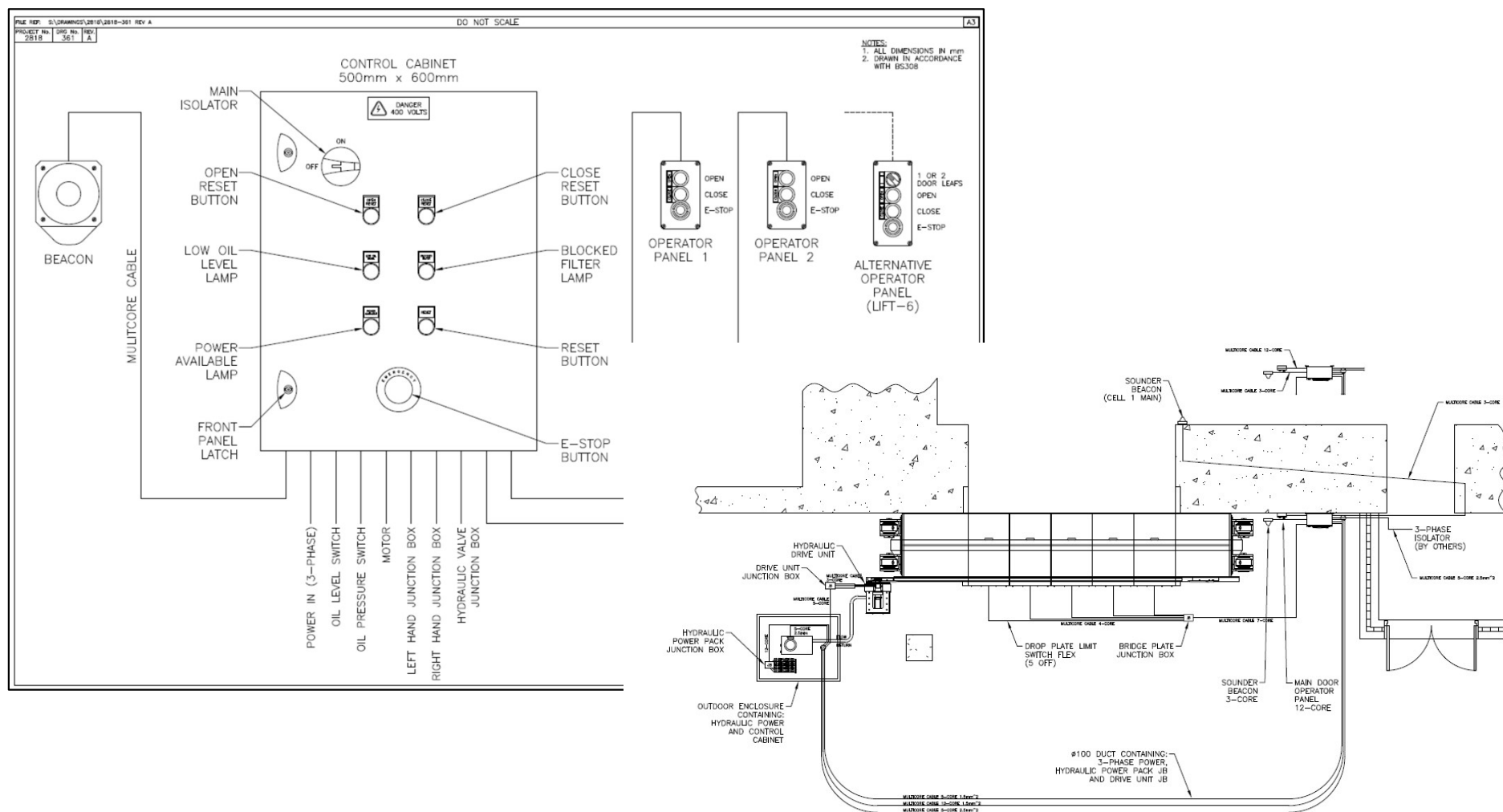
Mechanical Design



EEP will supply full detailed 3D design to manufacturing drawings using AutoCAD Inventor. Drawings are produced after a detailed site survey has been completed, and in collaboration with the selected building construction company to ensure full integration to the host building.



Control Mechanism



Full Concept Schematic for Control Mechanisms



Manufacturing

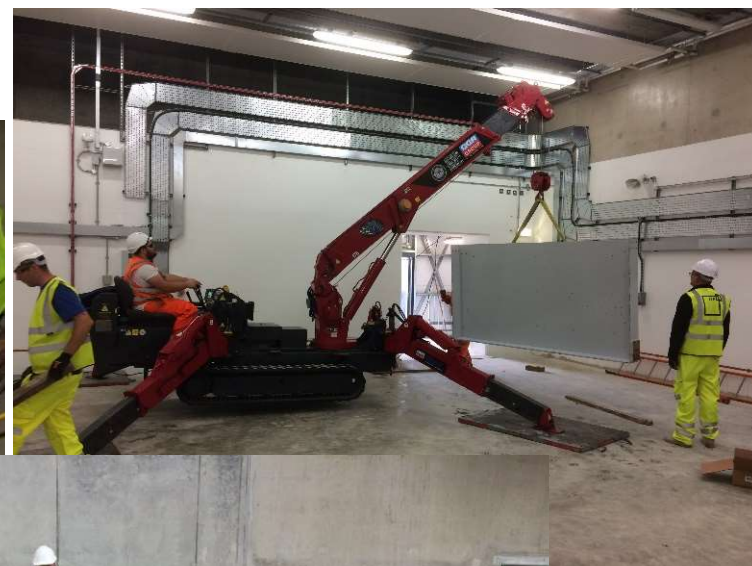
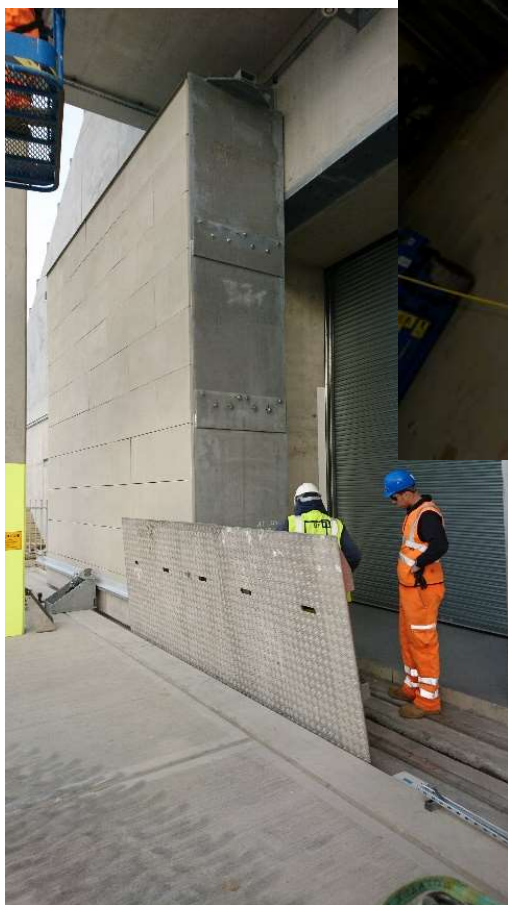
- Our own UK manufacturing
- Quality Assurance Assistance, including local Quality Assurance Audits





Installation & Commissioning

EEP Installation Assistance, Supervision & Commissioning





What is Tempest Shielding?



TEMPEST Shielding creates an area that is protected from the emissions of electromagnetic signals; one in which communications – data or voice - can remain secure. This primarily consists of creating an electromagnetic clean zone in the form of a Faraday Cage.



The Phases of Building a Modular Tempest Facility:

Phase 1: Defining Your Requirements

Phase 2: Designing The MODULAR TEMPEST FACILITY

Phase 3: Manufacturing

Phase 4: Installing The Modular Tempest Facility

Phase 5: Testing The Modular Tempest Shield

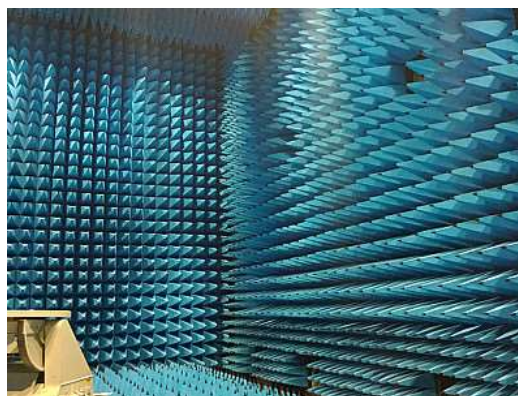


Defining Your Requirements...

What are your critical facilities or buildings?



What must survive to allow you to carry on?

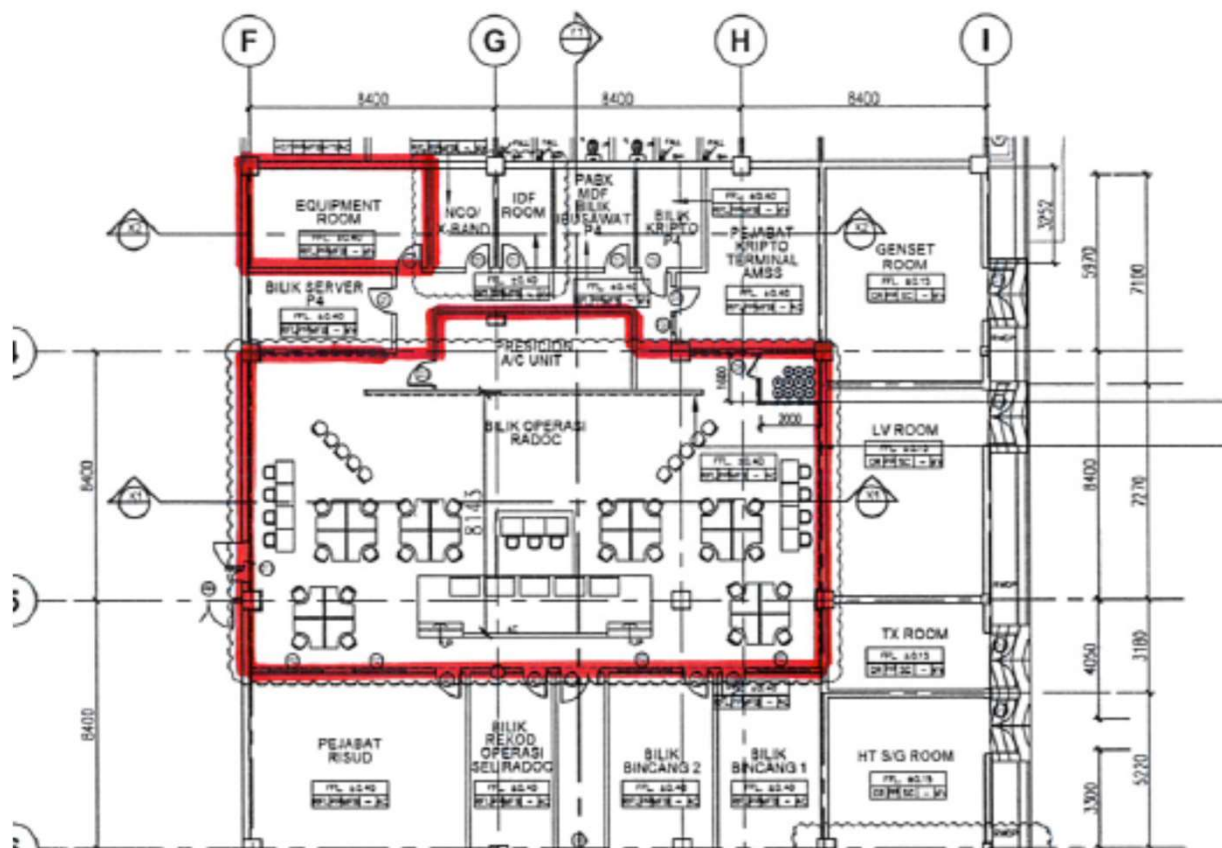


Who and what must you protect?



Designing the Tempest Protected Facility

EEP will assess and survey the host facilities fabric and services in advance of the Design process.





Major Components of a Tempest Protected Shielded Room

- Modular Shield
- Doors
- Waveguides for Ventilation
- Tempest Power Filters
- Fibre Optic Pipe Penetrations
- Other Pipe Penetrations
- Earthing



Designing The Tempest Protected Shield

The Tempest Shield is typically a galvanised modular system using preformed 2mm panels bolted together with RF gasket and M8 bolts.

Rooms can be adjoined to further rooms. Sluice door systems for continuous protection and allowances can be made for existing structural beams or structures.

Raised access floors, ceilings and wall linings can also form part of the design.

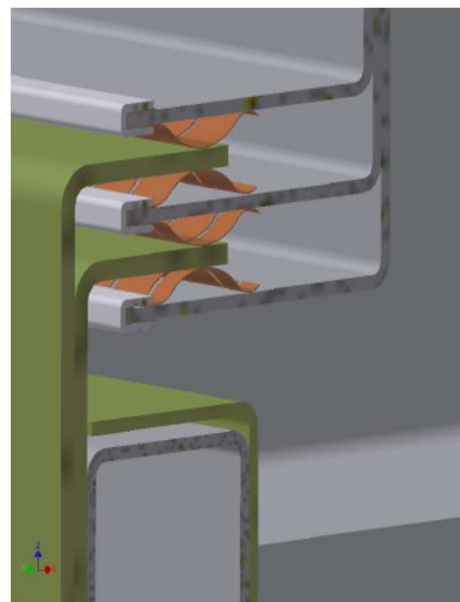




Tempest Shielded Doors

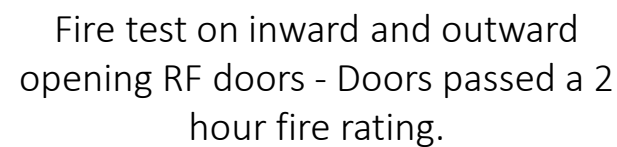


- Doors can facilitate pedestrian and large equipment access.
- Pairs of doors (sluice doors) add unbroken protection.





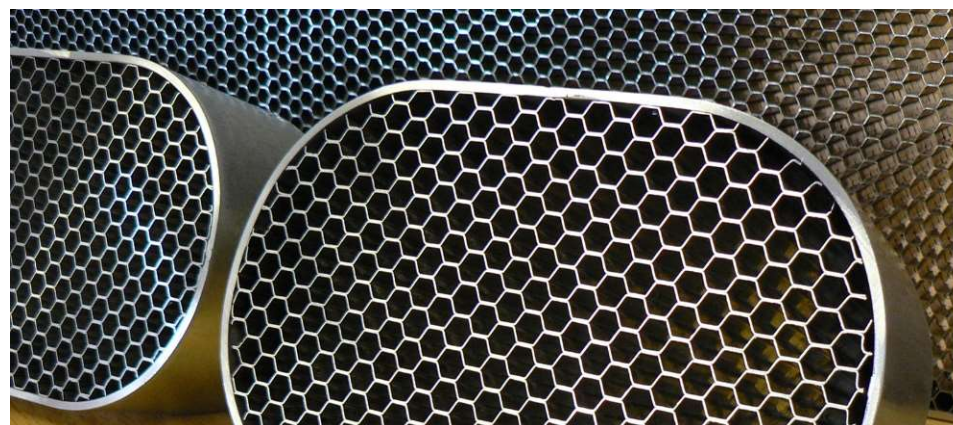
Tempest Shielded Doors

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Waveguides for Ventilation

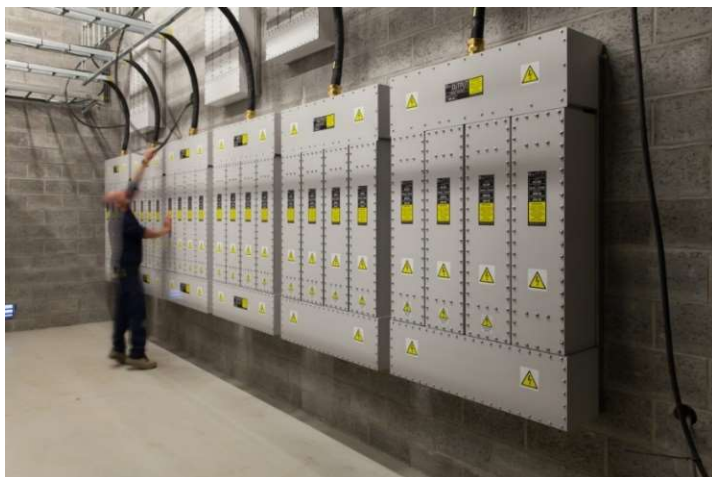
- Frequency Range: Performance 100 dB up to 10 GHz.
- EEP manufactured matrix steel vents 10 mm x 50mm matrix.
- Bolted onto the shield using RF TCS (Tin coated steel) gasket.
- External waveguides would also be painted for greater corrosion protection.





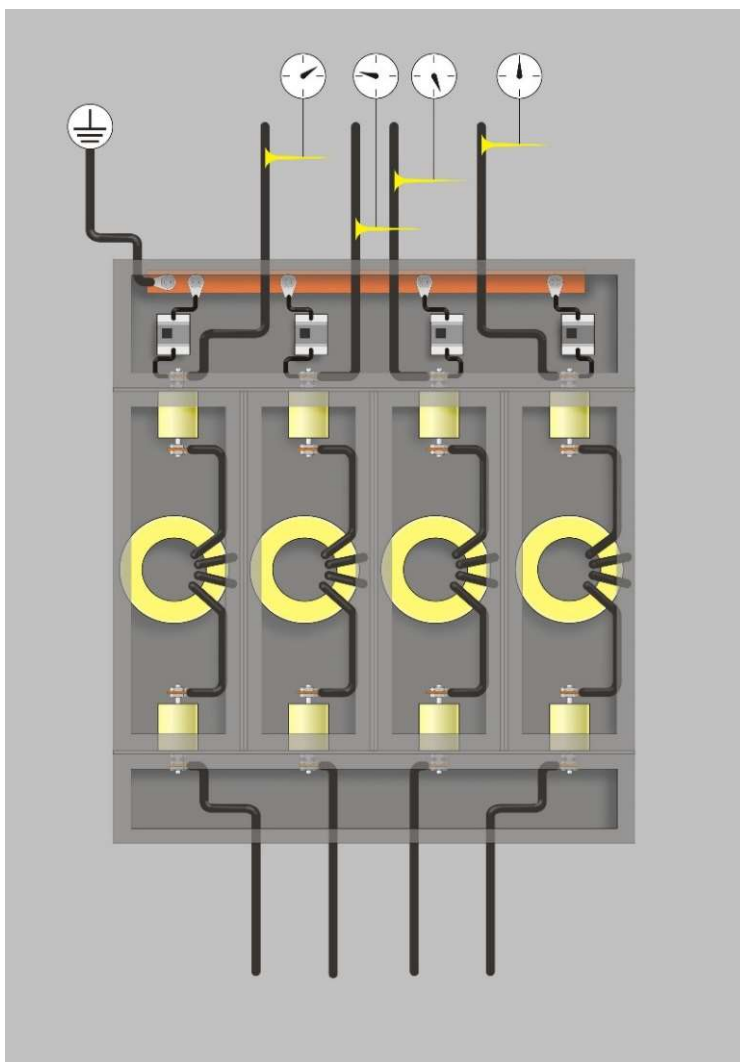
EMP Filters

All electrical PoE (Points of Entry) **MUST** be fitted with EMP Filters **AND** EMP Surge Suppression.

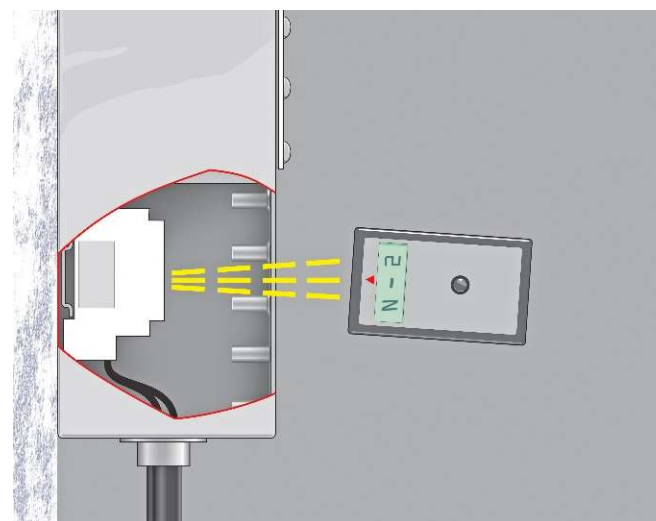




Tempest Filters



All EMP Power Filters can be fitted with MOV (Metal Oxide Varistor) Monitoring (MMOV).

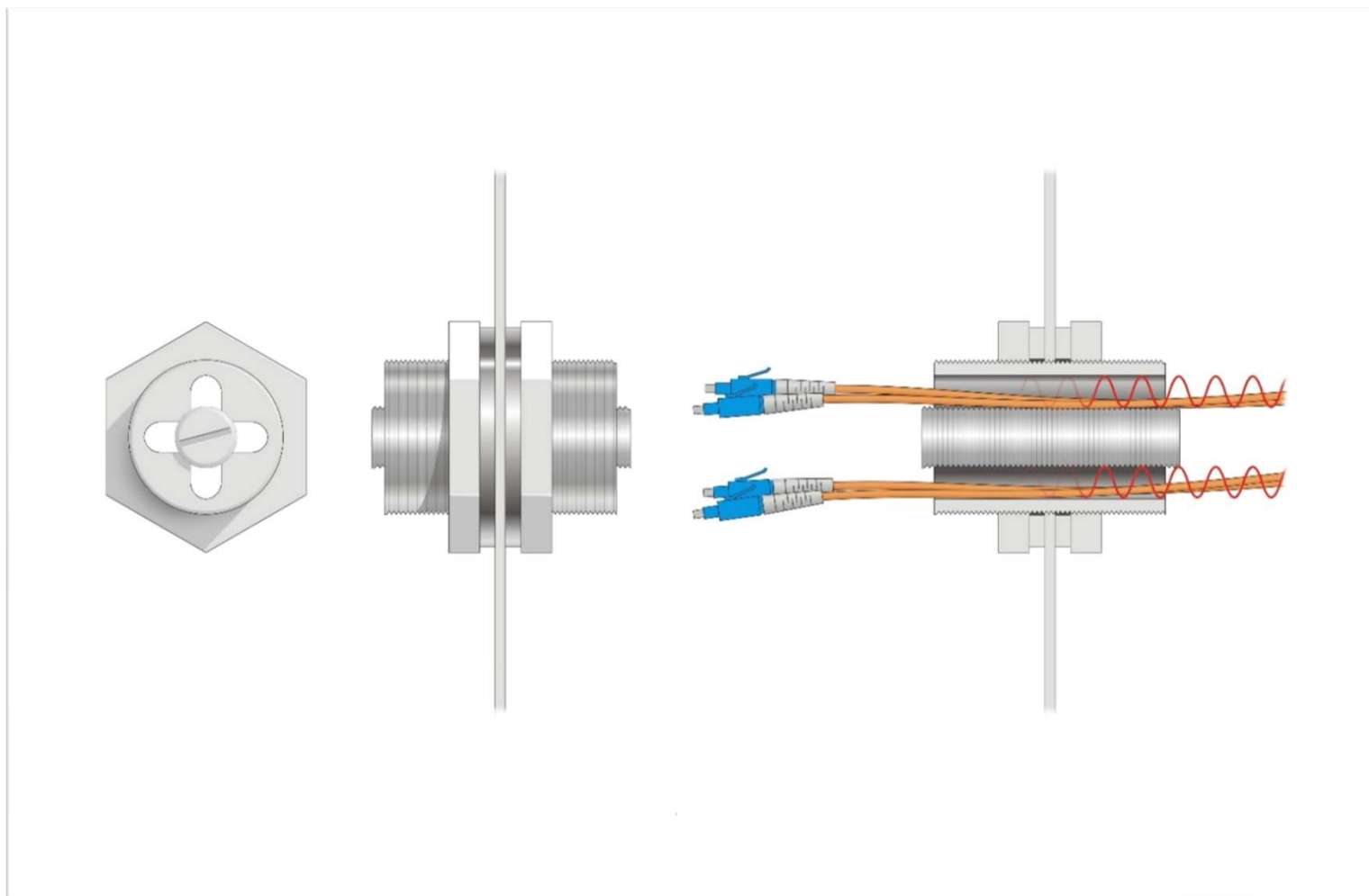


This allows constant monitoring of the life left in the MOV. Indication can be from a simple light signal to remote electronic sensing.



Fibre Optic Penetrations

Fibre Optic Data lines can safely pass through our waveguide tubes.





Other Penetrations

Coolant Water, Compressed Air and other Ventilation Systems require Wavetubes to stop RF from entering the Facility.





Our Manufacturing Capabilities

EEP can manufacture all elements:





Installation

EEP site installers will work alongside the client throughout the installation of the EMP Shield.





Installation Sequence of a Modular Tempest Shielded Room



Phase 1: Damp-proof membrane on floor and floor panels laid down



Phase 2: Wall panels installed



Phase 3: Ceiling panels installed

Phase 4: Decorative wall lining panels installed





Phase 5: Power Filters installed onto the shielded rooms walls



Phase 6: Fibre Optic Cable Penetrations installed onto the shielded rooms walls



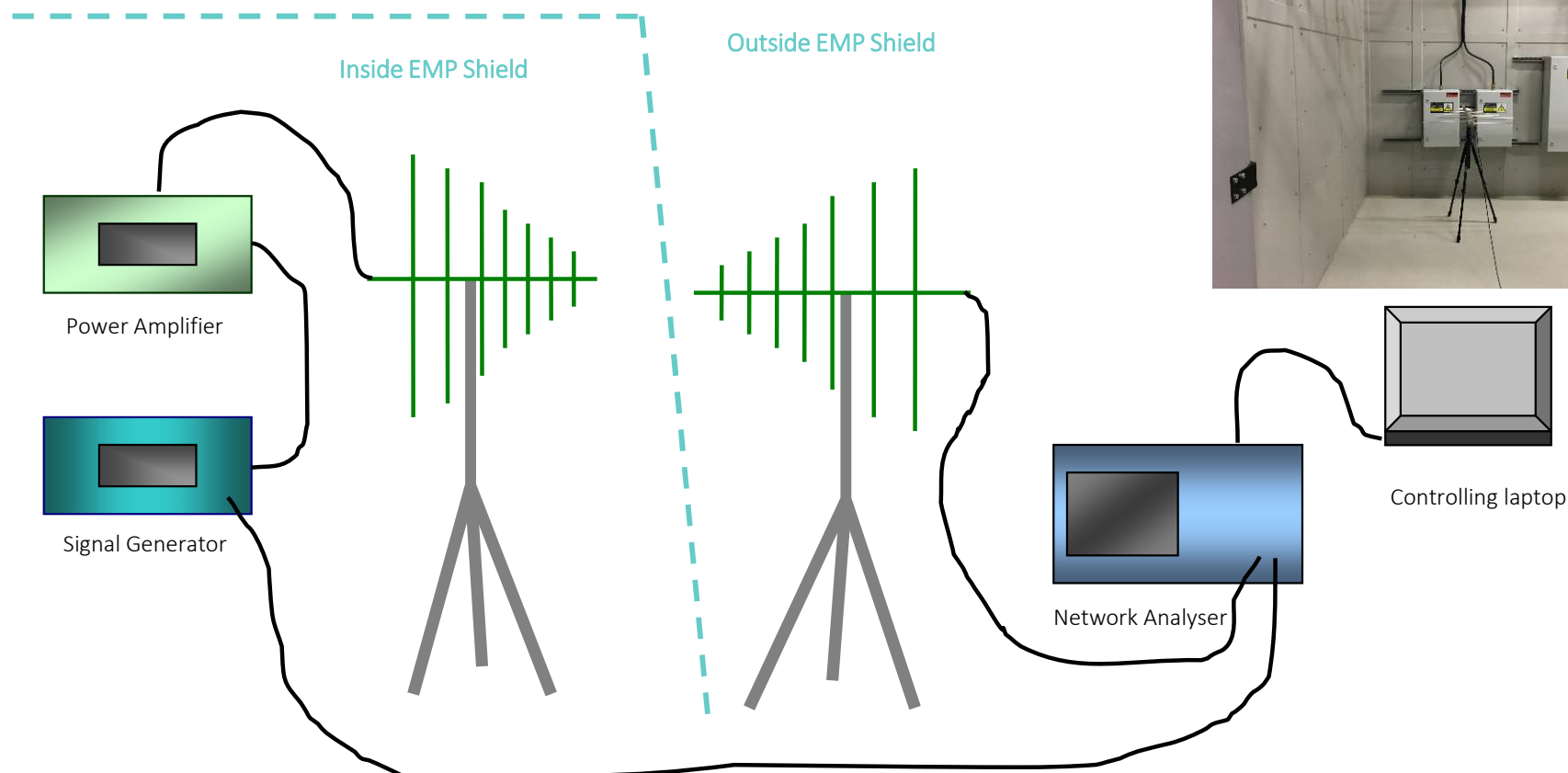
Phase 7: Low level ventilation vents installed in the wall panels



Phase 8: RF gasket prepared on the ventilation vents

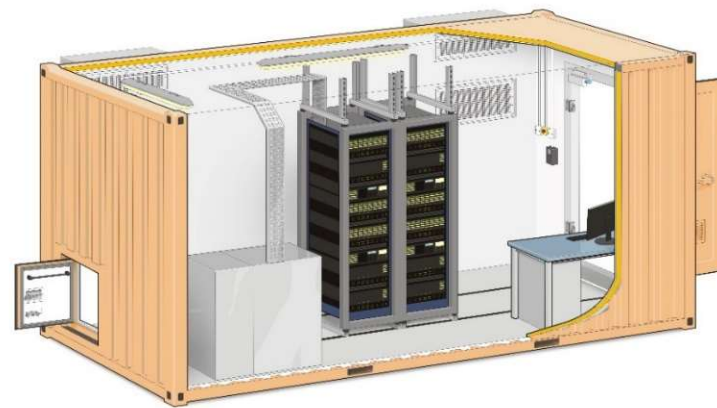


Testing The Tempest Shield Shielding Effectiveness (SE)





Shielded Containers





Shielded Cabinets

- EEP can supply any size and configuration of Shielded Cabinet that is required.
- All design requirements such as shock mounts or wheels can be accommodated.
- All cabinets can contain a 19 in rack for mounting of internal equipment.





Case Study of Tempest Protection for Shielded Cabinets within a Data Centre

Client: Global Internet Service supplier
Requirement: To offer specific Tempest protection to racks within their datacentre.
Solution: EEP supplied steel shielded cabinets within existing data centre facility





Quality Standards

Quality

European EMC Products Ltd are registered to BS EN ISO 9001:2015.
Certificate number: FS38901

Registered Activities:

The design, assembly, installation, servicing and testing of RF Shielded Structures and equipment including EMI Shielding, Blast Doors, Gas Tight Doors and specialised mobile Electromagnetic Pulse Protection (EMPP) containers.

Radio Frequency, Magnetic Shielding and Quench systems for MRI (Magnetic Resonance Imaging) scanners.

The design, assembly and installation of Ionising Radiation Protection facilities.

The design, manufacture and installation of LED lighting systems for medical applications.

EEP Filters Limited are registered to BS EN ISO 9001:2015, Certificate Number FS38901.

Registered Scope: The design, manufacture, management of installation and testing of high-performance EMC and EMP Power and Data Line Filters.



Quality Policy

European EMC Products Limited specialises in the design, assembly, installation, servicing and testing of R.F. shielded structures and equipment including EMI shielding, gas tight doors and specialised mobile electromagnetic pulse protection (E.M.P.P.) containers. Radio Frequency, magnetic shielding and quench systems for MRI (Magnetic Resonance Imaging) scanners. The design, assembly and installation of ionising radiation protection facilities. The design, assembly and installation of dimmable LED lighting systems.

Our objective is to fully satisfy our customers' requirements by supplying high quality products and services which are delivered on time at competitive and profitable prices, and which conform to all current relevant statutory standards.

All Company personnel will strive to increase business volume on an on-going annual basis by responding comprehensively to all potential customer stated requirements, by conducting continuous customer dialogue at all technical and commercial levels, by ensuring that all projects installed and commissioned fully satisfy customers' operational needs and intentions. Individual customer projects will be managed and monitored during all phases and dialogue maintained with customers during these phases to satisfactory conclusions.

It is the policy of European EMC Products Limited to establish, maintain and develop an effective and efficient Quality Management System that both contributes to the above objectives and conforms to the total requirements defined in ISO 9001 - 2015

The Quality Management System manual and associated documented procedures outlines the activities required of all Company personnel to maintain and develop the system to conform to the above.

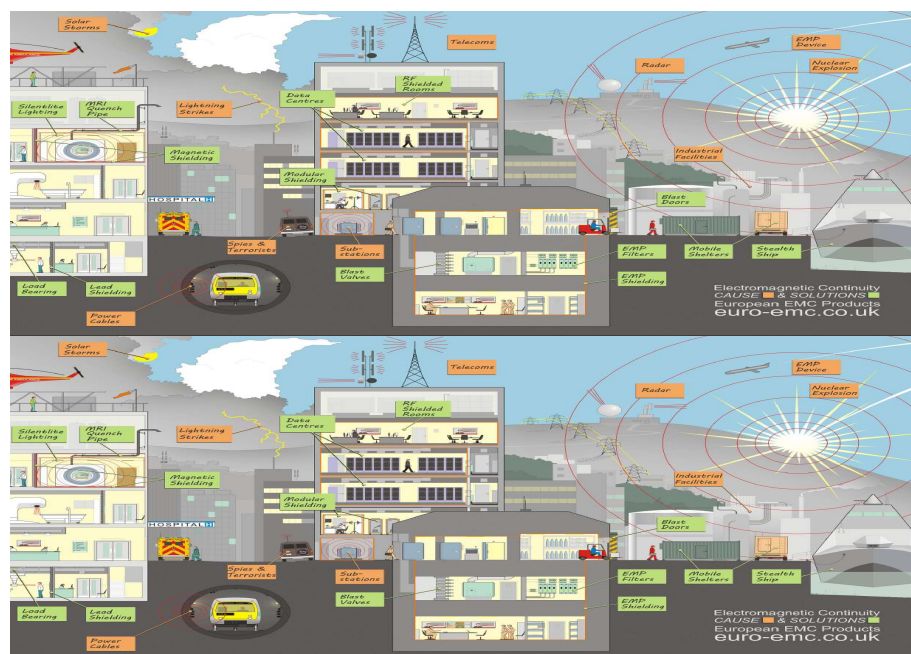
All staff are required to:

- Be completely familiar with all procedures related to their activities within the Company
- Follow and comply with requirements of all above relevant procedures and objectives
- Continually seek to improve both the effectiveness of the Company's focus on customer satisfaction and seek to improve effectiveness of the QM System.

This Quality Policy statement has been adopted by European EMC Products Limited and supersedes all previous policy statements.



Shielding Solution Specialists



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