



Turn-Key G-MAX Delivery

All developments are structured within a **G-MAX** (Guaranteed MAXimum) project delivery cost and schedule. Each customer engagement is Master Planned to maximize capabilities, utilization and resources.

The Master Plan is then honed through a comprehensive multi-layer value engineering model to minimize capital and long-term operating costs of the development.

World-Class Greenfield EMP Facilities

Max Resilient Infrastructure

EMP GRID Greenfield solution uses best-of-breed technologies to furnish enterprises with an **EMP/HEMP/IEMI and Solar Flare** hardened shell that delivers a 360° **Max Resilient Infrastructure**. Each facility delivers:

- 360° tested and certified, resilient Tier 3+ data center shell (5 survivable platforms)
 - Micro data center (50kW)
 - Mid-enterprise data center (100kW)
 - Enterprise data center (250kW)
 - Large enterprise data center (500kW)
 - Global enterprise data center (1MW+)
- All primary MEP/FP (electrical, mechanical and fire protection) contained within protected shell
- Co-primary power generation contained within protected shell and stand-alone onsite / on campus fuel supply
- Emergency generation (diesel /natural gas) onsite with extended and uninterrupted operations
- 30 Day combined "A & B" on-site of uninterrupted power generation
- Complete telecom infrastructure contained within protected shell with mobile rollout deployment
- Fully managed **Protected Cloud-as-a-Service** for mirrored resilient operations

Service Portfolio

Professional services are available individually or in any combination, depending upon scope of project:

Technology Master Planning

- Risk and Threat Assessment
- Facility Layout, Needs Analysis and Future Proof Master Planning
- Data Center Facilities Design /Build /Test and Operate Services
- Technology Asset Management (map "as-is" to "to-be" rack and floor layout)
- Building, Campus and Metro Fiber Optic-Based WAN Deployment
- Mission Critical Infrastructure Master Plan Development, Optimization and Integration
- Multiple and 100% Diverse Power Infrastructure Design / Build Solutions (N+1 to 3N Power)
- Cost / Benefit Analysis, Budget Development and ROI Planning
- "Bottleneck" Analysis & Capacity Planning

EMP Greenfield Facility Design Options:

- Protected Colocation
- Micro-Data Center
- Town House
- Stand-Alone

Move Migration and Transformation Services:

- Create Actionable Roadmaps for Transformation
- Leverage Disciplined Approach to Design Processes
- Implement Risk Mitigated and Success Driven Transformation

Contract Documents

- Scope of Work development and review
- RFI, RFQ, RFP development
- Bid Solicitations and Review
- Contract award analysis and recommendation

Design Team Coordination

- Tier 3 / Tier 4 data center design / build project management and owner's representation
- Vendor sourcing, selection and management
- Technology infrastructure procurement planning, negotiation and construction management
- Level 7 diverse fiber optic network design/build/test
- MEP / FP and utility services coordination

Move Migration and Transformation

- Comprehensive current hardware and software inventory
- Detailed mapping of system and application interdependencies
- Flexible migration strategies based on risk and downtime tolerance
- Short term equipment leases for temporary infrastructure
- Warranty compliance through hardware recertification
- Comprehensive transit insurance against theft, damage, or loss
- Auditable chain of custody

Facility Design Options

The EMP GRID (N) Critical Load

Infrastructure provides a world class customizable and scalable **EMP/HEMP/IEMI** and **Solar Flare** protected data center / colocation facilities solution.

Protected Colocation

- Blade-ready, high density capable colocation facility that supports 1/4 to 20 rack solutions

Micro-Data Center

- Fully demised and secure data center facilities from 150 SQ.FT. (4 racks) to 10,000 SQ. FT. within a shared raised floor infrastructure
- Significant economies of scale, operations and power resources provided to support 100%+ growth capability

Town House

- Customized data center facilities with no shared under floor infrastructure
- "**Blast-Wall**" demised offers significant savings and economies of scale, footprint, maintenance and upgrades

Stand-Alone

- Customized data center facilities with specific access requirements and zero shared infrastructure
- Master Planned to provide best in class value engineering and economies of scale, footprint, maintenance and upgrades

Ultra-Resilient EMP Greenfield Facility

- A 360° certified, resilient Tier 3+ Data Center shell - 5 survivable platforms
- MEP/FP (electrical, mechanical and fire protection)
- Primary power generation (gas generator, fuel cell)
- Emergency diesel generation with storage containment and protected fuel distribution
- Complete telecom infrastructure contained and protected with mobile rollout
- Mirrored, fully managed EMP/Solar Flare protected Cloud recovery facilities
- Highest compliance level- PCI, HIPAA, HI-TRUST, ISO, SSAE 16 SOC 1 and SOC 2
- Six-tiered security perimeters, fully monitored 24x7x365

EMP GRID Services is uniquely positioned to offer clients state-of-the-art, environmentally friendly and LEED compliant, **Greenfield EMP** facilities. Built from the ground up and backed with enhanced (2N) Tier 3 standards and onsite per generation capabilities in excess of 30 days, **EMP GRID Services** solutions provide ultra-resilient infrastructures to clients whose mission-critical systems require survivability from catastrophic events that may impact local, regional and potentially national failure of the electrical power grid.

EMP GRID Services employs a highly disciplined engineering process for **EMP Greenfield** facilities. Customized to suit basic and comprehensive designs, our facilities feature:

Electrical Infrastructure

- 2(N) electrical distribution matrix supported by two (2) 100% diverse and independent power generation sources
- 2(N) 100% redundant "A" / "B" electrical distribution to the rack

Emergency Generation Systems

- Diesel / natural gas generation systems provide primary (N) emergency power for each "A" side electrical system
- Fuel Cell "B" side system within EMP containment shell provides co-primary emergency power for each "B" side system
- Each electrical system is supported by independent ATS and TVSS systems
- Minimum 15 day on-site fuel capacity per system; 30 day minimum utilization, altering single side generation

UPS Systems

- 2(N) UPS capacity with a minimum 15 minutes of run-time at 70% load on each "A" / "B" system.
- "B" Side UPS upgraded to filter solar flare-based magnetic disruption to protect against wave dissipation and harmonic destruction

Cooling Systems

- N+2 stand-alone ducted and high density capable systems provide redundant cooling distribution path to each rack row.
- In-Row point cooling - "**Cold Box**" infrastructure supports high density rack requirements.
- N Cooling infrastructure contained within EMP/HEMP/IEME and Solar Flare protected shell

Emergency Notification

In the event of an emergency, strictly defined **Emergency Notification Protocol** is **immediately initiated** by the **EMP GRID Services** Network Operations Center (NOC). Emergency Protocol includes immediate notification to all clients impacted by the event. The NOC provides ongoing status and related action reports until the event is declared closed.

We offer 24 hour **On-site Facility Services** that clients can access via independently monitored keypad and biometric security systems. Our **Video Surveillance Systems and Electronic Motion Sensors** provide continuous and comprehensive observation. We detect and record accessibility and ensure unparalleled protection against tampering.

Secure EMP Greenfield Facilities

- Furnished with all entry access points and controlled by multi-protocol card-swipe / access code and/or biometric access systems.
- Constructed with a multi-tier physical security perimeter.
- All internal and external areas are monitored 24 x 7 x 365 by on campus NOC with security video stored online for a minimum of 90 days.

Fire Suppression

- A facility-wide, multi-zone/ FM-25 (non-toxic gas) system (dry pipe, double interlock pre-action fire sprinkler) as defined by the National Fire Protection Agency (NFPA) is installed throughout the data center facilities
- All data center facilities are supported by a state-of-the-art 24x7x365 VESPA detection system

EMP GRID Services has built a **Network Access Point (NAP)**, complete with NOC support and monitoring of MEP/FP/Security and Network infrastructure on a 24x7x365 basis. The NAP supports multiple 10 GbE and OC192+ fiber rings with 100% diverse carrier cross-connection and transport. It is designed to support both metro and "long haul" WAN connectivity that is scalable from 10 mbps to 10 / 40 Gb optical transport. It also provides a minimum 35% of IP transport external to the near metro core.

The **Meet-Me Room/Tier 1 Carrier Fiber Access** features a carrier-neutral architecture that provides access to a large number of Tier 1 carriers local Internet, long-haul, wireless and next-gen telecom providers to meet all connectivity needs. It is comprised of:

- Multiple / Route Diverse Tier 1 Carrier Fiber Rings support 10GbE and /or OC192 SONET distribution
- ATT Designated LEVEL 7 (100%) Network Route Diverse compliant

Customer Support Services and On-site Managed Services

EMP GRID Services Team provides:

- Equipment receipt (dock acceptance) and bar code placement
- Equipment inventory and set up
- Equipment commissioning (server, disk storage, tape)
- Equipment monitoring and maintenance (server, disk storage, tape)
- Tape changes, storage and 3rd party remote storage
- Network design, procurement, commissioning, maintenance & monitoring

Secure Storage

EMP GRID Services supports a fully secure and monitored storage area for client packages, deliveries and related storage. Access to EMP GRID Services Secure Storage is available 24 x 7 x 365 via the NOC.

Package Delivery

The NOC can receive (or prep for pickup) packages ranging in size from postal mail, Carrier envelopes and Backup Tapes / Disks to multiple equipment pallets on a 24 x 7 x 365 basis.

Client Notification

The NOC provides a constant communication point for all client and related facility activities on a 24 x 7 x 365 basis. It is accessible directly by land line, cell phone, email, SMS and fax.

EMP GRID Services Team Mission

We are flexible, responsive and dedicated to designing, building and operating client facilities specifically planned to ensure full operational recovery—despite disasters, emergencies or crises. We're dedicated to assist clients to quickly recover from facility emergencies, local / regional disasters, critical network failures, electrical / mechanical and core telecommunications outages.

Dedicated Customer Suites

EMP GRID Services ensures a complete recovery platform. This includes the core data center (server, storage, data, backup/archive/ restore), network, telecommunications and voice systems. It is accessible by certified employees of a fully-functional, professional and compliant workplace. Our suites are specifically designed to support the instantaneous recovery of:

- Mission critical corporate workplace
- Back-of-the-house operations
- Financial trading floors
- Call center applications

On- Net Dedicated Desktop Systems & 24/7 Tech Support

- 100 MB / 10 Gb burstable, multiple Tier 1 Carrier internet connectivity
- 10 Gb fiber connectivity to adjacent Tier 3+ Colocation center
- Redundant analog voice services
- Dedicated VOIP desktop system
- Pre-built customer images pre-loaded or USB stored in-suite secure storage
- Dell OptiPLEX desktop systems (customized to client specifications)
- Dedicated power outlet at the desk supported with UPS and emergency generator

Managed Technical Services

- 24/7 onsite management by certified professionals (Level 1, Level 2, CCIE)
- 10 - 600 professional, configured and wired workstations
- Direct integration with a 15,000 sf Tier 3+ enterprise data center and Colocation facility
- Industry-leading computing and telecommunications equipment
- Support and compatibility for major hardware and software platforms
- Bundled, mobile, quick-ship options for expanded on-site recovery
- Primary data storage, data vault and remote "On-net" data backup / archive. Hosted PBX and Call Redirection
- Fully managed Emergency Notification and Communications Operations Command Center