FIRM PROFILE 1993 – 2018 (25 Years)

EMI / RFI / EMF Measurement, EMC & Human Exposure Assessment, Magnetic/RF Shield Design, Installation & Testing

Vitatech Electromagnetics, LLC offers full-spectrum EMI/RFI professional engineering services for nanotech, science, research, engineering, medical and hospital projects that include: EMI/RFI assessment, placement and mitigation of high-resolution Imaging tools (i.e., SEMs, TEMs, STEMs, AFMs, FIBs, E-Beams, NMRs, etc.), electrophysiology instruments and diagnostic medical imaging tools (i.e., MRIs, MEGs, CTs, etc.). Scope of services include: EMI/RFI Site Survey, Simulations, EMI Building Assessment & Final Commissioning.

EMF Surveys & Measurements: DC EMI Sources (subways, trolleys, MRIs, NMRs, MAGLEVs, elevators, vehicles), AC Power EMI Sources (transmission/distribution lines, substations, transformers, switchgears, busways, conduits, trains), RF Sources (RFID, AM/ FM, TV/ACTV, marine, mobile, cellular, WiFi), Microwave/Radar & EMP
EMI/RFI Detection, Control & Reduction for scientific and medical high resolution imaging tools including SEMs, TEMs, FIBs, AFMs, STEMs, MRIs, NMRs, EEGs, EKGs, EMGs, MEGs, PET/CTs, CATs, Stereotaxis, and many other sensitive tools.
EMF Scientific Shielding (DC & AC ELF Magnetically Shielded Rooms & MRIs, etc.)
RF Shielded Enclosures (Biomedical Research, MRIs, SCIFs, TEMPEST/ EMSEC, etc.)
EMF Simulations (DC, AC ELF, HVDC, RF & HEMP/EMP) & Mitigation Strategies
Nanotechnology, Research & Medical Building Site Planning & Facilities Assessment (over 100 projects to date)
HEMP & EMP shielding designs, installation and testing (classified projects)

Recent Business Activities & Company Clients

Vitatech performs the most comprehensive EMF measurements and site surveys in the industry and provides our clients clearly written, well-documented final reports with practical and cost- effective EMF mitigation solutions. We have extensive experience recording and analyzing EMF/RF emissions from MRIs and NMRs, subways and electric trains, transmission and distribution lines, transformers, secondary feeders, switchgear rooms, substations, research and medical facilities, industrial processing facilities, server farms plus RF antenna, microwave and radar sources. When EMF levels exceed acceptable EMI/RFI equipment susceptibility and/or emission levels (EC Directive) or exceeds acceptable human exposure thresholds and standards, Vitatech recommends, designs and installs state-of-the-art DC magnetic, AC ELF magnetic, RF electric field shielding systems which attenuate (reduce) the EMF source to acceptable levels within a controlled environment. Vitatech provides a written performance guarantee with all of our installed DC, AC ELF and RF shielding systems.

Our senior technical manager, Louis Vitale B.S.E.E., has more than 38 years of hands-on engineering and management experience in several technical disciplines including 25 years

in EMI/RFI. Jan Heindel, B.S.E.E., Engineering Manager of FEM simulations, EMI/RFI measurements, shielding and ACS projects. Pengcheng Zhang ,B.S. in physics/mathematics responsible for simulation modeling, EMI/RFI measurements, and ACS installations. Christina Vitale. B.A. is an experienced EMF site survey technician and Stephanie Carpenter, B.A. is the PM of Engineering. We also have two (2) former employees who are Vitatech EMF consultants, Levi Mecham, B.S.E.E., M.S.E.E., P.E. and Greg Slonka, B.S.E.E. (May 2018).

Relevant Projects

Advanced Measurement Laboratory - National Institute of Standards & Technologies (NIST)
Advanced Metrology Laboratory at the National Physical Laboratory
Ames National Laboratory - Sensitive Instrument Facility (SIF) 2014
Arizona State University – ISTB-IV Research Center (Laboratory of the Year Award 2006)
Arizona State University Interdisciplinary Science and Technology Building 6
Arizona State University, Tempe, AZ – AZ Biodesign I & II, APS Energy, LSW
Berkeley National Labs, California – Molecular Foundry Building
Berkeley National Labs, California – Molecular Foundry Building
Brookhaven National Labs, NY – Center for Functional Nanomaterials
Caltech Chen Neurosciences Research Building
CALTECH Nanotechnology - Kavli Nanotechnology Institute
Central Michigan University Biosciences Building
Columbia University – Mind Brain Building (MBB) Manhattanville Project
Cornell University, Ithaca, NY – Duffield Hall Nanotech Center
Drexel University Bossone Building
Duke University, Durham, NC–CIEMAS & French Science Center
Florida Advanced Manufacturing and Research Center
Florida State University Interdisciplinary Research Building
Francis Crick Institute – New Medical Research Facility in London, UK
George Washington University, EEG Laboratory & New NanoTechnology Center
Georgia Institute of Technology, GA – NanoTechnology Research Center Building
Harvard Medical Center Seeley Mudd
Harvard University - Harvard Allston
Harvard University - Northwest Science Building

Relevant Projects

Harvard University – Center for Nanoscale Systems (LISE)
IBM -TJ Watson Research Center, Yorktown, NY – IDC TEM EMI Project
Johns Hopkins University, MD. – Advance Physics Laboratory (APL)
King Abdullah University of Sciences and Technology (KAUST) - $26 Billion Dollar Project
Lawrence Livermore National Laboratories, Livermore, CA – Nano-Research Lab
McGill University - Hitachi FE-SEM with ELLS ACS
McMasters University, Canada – Nanotechnology Research Center
MIT, Boston, MA – MIT.nano (new state of the art research facility)
NASA Cleveland, Glenn Research Center, SEM Laboratory
Naval Research Laboratory (NRL) - NanoScience Research Laboratory in Washington, D.C.
Naval Research Laboratory (NRL), Washington, DC – NanoScience Research Lab
New York University (NYU) School of Medicine – Smilow Research Center
Oakridge National Laboratory Leadership Imaging Facility
Penn State – Millennium Science Complex
Princeton University – Neurosciences Research Center & Andlinger Center
Purdue University, IN -- Birck NanoTechnology Center
Sandia National Labs, NM – Center for Integrated Nanotechnologies
Sandvic Coromat R&D Materials TEM Lab, Stockholm, Sweden
SLAC National Accelerator Lab Photon Science Laboratory Building
Stanford University ChEM H&SN1 Building
Swinburne University of Technology– Advanced Technologies Center (ATC)
Texas A&M University Giesecke Electron Microscope
Thomas Jefferson National Accelerator Facility, Newport News, VA
Trinity College, Dublin, Ireland – CRANN & New Nanotech Research Facility
UCLA, Los Angeles, CA – California Nano Systems Institute (CNIS)
University at Notre Dame - Multidisciplinary Engineering Teaching & Research Center
University of Alberta, Edmonton, Canada – NINT Building, CCIS I&II
University of Arkansas at Little Rock - Nanotechnology Center
University of California at Riverside -Material Sciences & Engineering Building
University of California Berkeley, San Francisco, CA. – CITRIS project

Relevant Projects

University of California Irvine CTEM (Nion & TEMS) Facility
University of California Riverside, Riverside, CA – Nanotechnology Research Project
University of Copenhagen - Neils Bohr Science Park Research Facility
University of Cork, Cork, Ireland – Nanofabrication Facility Project
University of Delaware Interdisciplinary Science and Engineering Building
University of Florida, Gainesville, FL – Nanoscience Institute (NIMET)
University of Glasgow Research HUB
University of Illinois at Chicago College of Engineering Modular Building
University of Maryland, College Park, MD – Laboratory for Physical Sciences
University of New Mexico Physics & Astronomy Interdisciplinary Sciences
University of New Mexico, Logan Hall – EEG Laboratory
University of New South Wales – Material Sciences & Engineering Building (MSEB)
University of North Carolina
University of Oklahoma Physics and Astronomy Building
University of Oslo - Department of Physics TEM Facility
University of Ottawa Light Rail Study
University of Pennsylvania – Health Sciences Center Complex
University of Southern California Michelson Center for Convergent Bioscience
University of Sydney – Australian Institute for Nanoscale Science and Technology (AINST)
University of Utah Crocker Science Center
University of Virginia, Charlottesville, VA – MSENT Building
Yale University School of Medicine, CT. -P.E.T. Facility

Partial List AC ELF/DC Magnetic Shielding Projects for TEM, SEM, FIB, E-Beam, EEG, EKG, NMR, MRI, MEG & Ramping Magnet Labs

2000-2003 National Institute of Standards & Technologies (NIST), Advance Metrological Laboratory (AML), Bethesda, MD
2003-2007 Center for Functional Nanomaterials (CFN), Brookhaven National Laboratory, Upton, NY
2003-2005 Birck Nanotechnology Center, Purdue University, West Lafayette, Indiana
2005-2006 University of Waterloo, Quantum – NanoCenter, Ontario, Canada
2007-2009 Interdisciplinary Science and Technology Building (ISTB) IV Project, Arizona State University (ASU), Tempe, AZ
2008-2011 University of Arkansas Nanoscale Science & Engineering Building (NSEB), Fayetteville, AR
2012-2016 Nano-Materials, Structures, and Systems Facility (nMaSS), Massachusetts Institute of Technology (MIT), Boston, MA
Plus 5 additional Nanotech/Research projects with HDR since 2000

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HDR Architecture, Inc. 1101 King Street, Suite 400, Alexandria, VA 22314
Key staff involved: Lou Vitale, Engineer of Record and Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations. CFN Project Cost: $350,000

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms and TEM/SEM rooms. Final Test Result: less than 0.1 mG RMS measured 3 meters from shielded switchgear /electrical room under average and peak loads. Shielded TEM/SEM rooms 0.1 mGp-p AC ELF / DC quasi-static at tool columns.

- 2003-2005 Harvard LISE, Harvard University, Cambridge, MA. Note: Vitatech was the Engineer of Record, Designed all AC ELF & DC Magnetic Shielding listed in specifications. Shielding installed by Contractor.
- 2004-2005 Harvard Northwest Labs, Harvard University, Cambridge, MA
- 2003-2004 Harvard Cruft Labs, Harvard University, Cambridge, MA
- 2010-2012 University of Pittsburgh- Mid Campus Renovation, Pittsburgh, PA
- 2012-2016 MIT.nano, Massachusetts of Technology (MIT), Cambridge, MA
- Plus 4 additional Nanotech/Research projects with Wilson Architects

Architect: Wilson Architects, Congress St., Boston, MA.
University of Pittsburg Project General Contractor: Mascaro Constrution, 3400 Forbes Avenue, Pittsburgh, PA 15240. Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Jeremy Geffert, Site Manager, and Debra Vitale – Project Manager – Shielding Installation. University of Pittsburg Nano Project Cost: $300,380

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms and TEM/SEM rooms. Final Test Result: less than 0.1 mG RMS measured 3 meters from shielded switchgear /electrical room under average and peak loads. Shielded TEM/SEM rooms 0.1 mGp-p AC ELF / DC quasi-static at tool columns.

- 2004-2010 Electrical Research Building / Marcus Nanotechnology Building (NRCB), Georgia Tech, Atlanta, GA
- 2004-2008 Nanoscience Institute of Medical & Engineering Technologies (NIMET) Nanoscale Research Facility (NRF), University of Florida, Gainesville, FL
- 2006-2010 Krishna P. Singh Center for Nanotechnology, University of Pennsylvania, Philadelphia, PA
- 2007-2010 Global Foundries Fab 2, Malta, New York
- Plus 4 additional Nanotech/Research projects with M+W since 2004

Argonne National Laboratory.
Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, and Debra Vitale Project Manager – Shielding Installation. Georgia Tech Marcus Nanotechnology Project Cost: $298,241

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms and TEM/SEM rooms. Final Test Result: less than 0.1 mG RMS measured 3 meters from shielded switchgear /electrical room under average and peak loads. Shielded TEM/SEM rooms 0.1 mGp-p AC ELF / DC quasi-static at tool columns.

2007-2010 King Abdullah University of Science & Technology (KAUST)

Thuwal, Saudi Arabia
World's Largest Shielded SEM/TEM Research Facility – 12 FEI SEM/TEM Tools Project HOK Architects, OGER International, ARAMCO CM, & Saudi OGER Key staff involved: Lou Vitale, Engineer of Record, Robert Welling, Site Manager and Debra Vitale – Project Manager – Shielding Installation. Cost: $ 3,500,000 USD (Vitatech Consultation/PM Fee: $500,000)

EMI/RFI Site Assessment & Simulation including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested twelve (12) TEM/SEM AC ELF magnetic shielding systems: Titan 80-300s, Tecnai T12, Titan Krios, Titan CyroTwin, Nova NanoSEM 630, Quanta 200 FEG, Magellan, Quanta 600 FEG, Helios NanoLab 400S and Quanta 3D. After shield levels less than 0.10 mGp-p in the Bx, By and Bz axis in all TEM/SEM rooms at 1-m.

2012-2013 MASDAR Institute of Science and Technology

Masdar City, Khalifa City A, Abu Dhabi - United Arab Emirates
Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Jeremy Geffert, Site Manager and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $800,000 USD

Based upon our EMI site testing and assessment (ground currents from nearby substation and switchgear room traveling in rebar beneath floor, Vitatech designed, installed and

tested a 7.858 sq. ft. (780 sq. m) multiple TEM/SEM microscopy shielded room (largest TEM/SEM shielding room in the world) that achieved 10 nTp-p in the Bx, By and Bz axes at 1-m for the following FEI tools: Nova Nano SEM 650, Quanta 3D FEG, Tecnai G2, Quanta FEG 250, Helios NanoLab 650 and Titan Cubed.

2006-2007 University of Arkansas at Little Rock, Little Rock, Arkansas

SEM/TEM AC ELF Magnetic Shielded Rooms Nanotechnology Center
Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $145,000

Underground primary feeder below future TEM room with ground/net currents. Vitatech designed and installed high performance AC ELF magnetic shield with ¼" thick seam welded aluminum plate and multiple layers of silicon-iron steel sheets. Reduced ambient 2 mG RMS (6 mGp-p) to less than 0.04 mG RMS (0.01 mG p-p) at the tool columns in the Bx, By and Bz axes measured at 1-meter in TEM/SEM AC ELF Shielded Room.

2005-2007 Duke University Center for Interdisciplinary Engineering, Medicine & Applied Sciences (CIEMAS), Durham, North Carolina

SEM/TEM AC ELF Magnetic Shielded Rooms Nanotechnology Center
Architect: Abbie Gregg, Inc., 1130 East University Drive, Tempe, Arizona. General Contractor: AdvanceTec, 11300 Business Center, Richmond, VA. Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician and Debra Vitale – Project Manager – Shielding Install. Project Cost: $175,000

Simulated and ambient AC ELF and quasi-static DC magnetic fields were recorded. Vitatech recommended TEM and SEM room AC ELF magnetic shields. Vitatech installed and tested the shielded TEM and SEM rooms achieving 0.04 mG RMS (0.1 mGp-p) in the Bx, By and Bz axis at 1-meter elevation at the tool columns.

2004-2009 University of Florida TEM Room Shield, Gainesville, Florida

TEM AC ELF Magnetic Shielded Room
Nanoscience Institute for Medical & Engineering Technologies (NIMET) Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations and Jessica Vitale, Site Manger and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $175,000
Underground CATV cable, electrical feeder generated ground current magnetic fields including nearby electrical room of 0.68 mG RMS Br resultant in future unshielded TEM room. Vitatech installed and tested AC ELF magnetic shield. Tested levels were less than 0.04 mG RMS (0.1 mGp-p) in Bx, By & Bz axis at 1-meter at the tool column.

2007-2008 Uniformed Services University of the Health Sciences, Bethesda, MD

High Performance - AC ELF/RF Shielded EEG Room - Medical Research Facility
Room Project Cost: $125,000

Transformer / electrical panels adjacent to future EEG research room with elevated levels. Vitatech designed and installed EEG Patient & Instrument AC ELF/RF Shielded Rooms achieving very low 0.1 mGp-p magnetic fields and low RF electric field strength levels.

2009-2010 CIC biomaGUNE, San Sebastian, Spain

SEM & TEM AC ELF Magnetic Shielded Rooms
Corrected electrical wiring problems (induced currents) & designed/installed AC ELF magnetic shields:
Lou Vitale, Engineer of Record, Joshua Welling, Director of Operations and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $250,000 USD

Ground/Net currents due to electromagnetic induction on electrical distribution feeders required remediation and TEM/SEM shielding. Unshielded TEM room levels reduce from 20 mG p-p to less than 0.1 mGp-p in the Bx, By and Bz axis at 1-meter in shielded TEM room

2009-2012 British Petroleum (BP), Naperville, IL

Two TEM & SEM AC ELF Shielded Rooms
Key staff involved: Lou Vitale, Engineer of Record, Joshua Welling, Director of Operations, Jeremy Geffert, Site Manager, Robert Welling, Site Manager and Debra Vitale – Project Manager – Shielding Installation. Project Costs: $350,000.

FEI Nova NanoSEM / JEOL SEM JSM-840A Two (2) AC ELF Magnetic Shielded TEM Rooms reduced elevated ambient levels to 0.1 mGp-p in the Bx, By and Bz axis at 1-meter.

2007-2014 Princeton University Neuroscience, Princeton, NJ

Architect: Davis Brody Bond
Princeton Facilities
General Construction: Barr & Barr
Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations, Site Managers Robert Welling and Jeremy Geffert, and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $2,111,130

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms, TEM/SEM rooms and AC ELF/RF shielded EEG rooms. Final Test Result: less than 0.1 mG RMS measured 3 meters from shielded switchgear /electrical room under average and peak loads. Shielded TEM/SEM rooms 0.1 mGp-p AC ELF / DC quasi-static at tool columns with Active Compensation System (ACS) technology.

2008-2011 University of Virginia, Life Sciences Annex, Charlottesville, VA

Architect: Perkins + Will
General Contractor: Crenshaw Construction Company

Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $ 259,000

Elevated AC ELF and quasi-static DC magnetic field levels emanated from nearby power sources and moving vehicles in parking lot above future FEI Titan TEM rooms. Vitatech designed, installed and tested dual-substrate AC ELF/DC shield constructed with ¼" seam welded aluminum plate and multiple layers of oriented silicon-iron steel sheets with Active Compensation System (ACS). Achieved 0.1 mGp-p in the Bx, By and Bz axis at 1- and 2-meters with AC shield and ACS technology as cars moved above shielded TEM rooms.

2006-2012 University of Massachusetts, Lowell, MA

Architect: CUH2A
General Contractor: Doug Neuschafer
Design, Fabrication & Installation of AC ELF Magnetic Shielding Systems Project. Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $191,000

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms and TEM/SEM rooms. Vitatech installed and tested AC ELF magnetic shielding. Tested TEM/SEM room levels were less than 0.04 mG RMS (0.1 mGp-p) in Bx, By & Bz axis at 1-meter at the tool column

2007-2010 University of Pennsylvania, DC Gantry Fisher Translational Research Center, Philadelphia, PA

Architect: Rafael Vinoly Architects
General Contractor: LF Driscoll
Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Jan Heindel, EMF Engineer, Joshua Welling, Director of Operations, and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $577,100

Performed a comprehensive EMI/RFI site survey to record magnetic and RF emissions from electrified Amtrak train yard (12.5 kV @ 25 Hz), Amtrak utility substation (230 kV transmission lines & transformers) and Proton Facility. Project included NMRs, MRIs (i.e., 3T, 9T, 11.7T, etc.), CTs, Proton Radiation Therapy Facility, Electrophysiology (i.e. EEGs, EMGs, EKGs, etc.), mammography and other medical diagnostic tools. VitaTech designed, installed and tested AC ELF and DC magnetic shielding for the Proton Facility, MRIs (3T, 9T and 11.7 T) and MRI areas (1.5T, 3T, 5T, etc.).

2007-2010 East River Science Park, New York City, NY

Assessed and verified EMF shielding requirements and installed AC ELF magnetic shield.
General Contractor: Turner Construction
Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $455,000

Reviewed existing EMI assessment and verified recommended mitigation. Installed AC ELF magnetic shield and achieved 10 mG RMS at 1-meter above shielded network protector / transformers vaults and switchgear room.

2006-2010 University of Notre Dame, Stinson Remick Hall, South Bend, Indiana

Architect: BSA Life Structures
General Contractor: Pepper Construction
Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations, and Debra Vitale – Project Manager – Shielding Installation. Project Cost: $467,775

EMI/RFI Site Assessment including SD, DD, CD and Final Commissioning. Vitatech designed, installed and tested AC ELF magnetic shielding systems for the main switchgear room, electrical rooms and AC ELF/RF shielded cryo room. Final Test Result: less than 0.1 mG RMS measured 3 meters from shielded switchgear /electrical room under average and peak loads. Shielded TEM/SEM rooms 0.1 mGp-p AC ELF / DC quasi-static at tool columns.

Partial List of Hospital, Medical & Clinical Projects

2007-2016 Francis Crick Institute (FCI), London, UK

Architect: HOK, 90 Whitfield Street London, W1T 4EZ, UK
Key staff involved in the project: Lou Vitale Engineer of Record & Jan Heindel EMF Engineer. Project Cost: $5,000,000 (Vitatech consultation work $350,000)

Vitatech performed three (3) EMI/RFI site surveys, simulated magnetic field emissions from power sources and designed AC ELF/DC magnetic & RF shielding systems for eight (8) Electron Microscopes (SEMs, TEMs,) four (4) NMRs (700 MHz, 800 MHz & 950 MHz) and two (2) MRIs (11.7T & 9.4T). FCI site is adjacent to St. Pancreas Train Station/EuroStar with electrified trains, London Subways (750 VDC), underground trains and busy roads.

2007-2016 Columbia University Mind Brain Building (MBB), New York City, NY

Architect: DBB Architects
Columbia University
Key staff involved in the project: Lou Vitale Engineer of Record, Levi Mecham Director of Engineering & Jan Heindel, EMF Engineer. Project Cost: $4,500,000
Vitatech performed comprehensive EMI/RFI site survey, simulated magnetic field emissions from adjacent Central Electrical Plant (75 MW 13.8 kV substation), designed AC ELF (extremely low frequency)/DC magnetic & RF shielding systems for two (2) 3T MRIs, one (1) 7T MRI, one (1) 9.4T MRI, one (1) 11.7T MRI, (1) MEG (magnetic encephalogram) and various research tools. MMB building site is adjacent to electrified 600 VDC NYC trains (IRT Line), Amtrak Trains (12.5 kV 25Hz), & busy roads. MRI RF/DC shield designs, installations and PM: Siemens 3T, Siemens 7T, Bruker 9.4T & Bruker 11.7T ($60 million)

2011-2012 St. Joseph's Health Center, Paterson, NJ (650 Bed)

Architect: Francis Cauffman, 2120 Arch Street, Philadelphia, PA 19103 Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $250,000
Vitatech performed EMI/RFI site survey, simulated magnetic field emissions from dual 4000 amp low-voltage switchgears and six (6) electrical closets below and adjacent to examination rooms, three (3) surgical rooms, CT scanners and other EMI sensitive diagnostic equipment. Vitatech designed and installed AC ELF (extremely low-frequency) magnetic shielding above the main switchgear room, emergency generators, and six (6) electrical closets

2007-2008 LA Childrens Hospital, Los Angeles, CA (300 Bed)

General Contractor: Rudolph & Sletten Inc, 4610 Maubert Ave, Los Angeles, CA 90027
Key Staff involved in the project: Lou Vitale Engineer of Record and Debra Vitale Project, Manager (AC ELF Magnetic Shielding). Project Cost: $760,000

Vitatech simulated magnetic fields emanating from main switchgear room and electric closets into adjacent patient areas. Assessed potential EMI impact and EMF human exposure issues, recommended and designed AC ELF magnetic shielding systems for the main switchgear room ceiling and four walls to protect a large patient and telemetry area. Managed / installed shielding and verified shielding performance after all shields installed.

2010-2012 New York University Langone Medical Center (1000+ Bed)

Architect Ennead Architects, 320 West, 13th Street New York, NY 10014
Key Staff involved in the project: Lou Vitale Engineer of Record and Gregg Slonka, EMI Simulation Technician. Project Cost $450,000

Simulated the AC ELF magnetic field emissions from the building electrical upgrade project and substation and recommended the appropriate AC ELF magnetic shielding throughout the hospital (i.e. substations, switchgears, busways, electric closets and other sources) on MRIs, research tools, CTs, cyclotron, electrophysiology tools (i.e., EEGs, EMGs. EKGs, etc.), electron beam imaging tools, etc.

2007-2012 University of Pennsylvania Medical Research & Hospital Project

Architect: Rafael Vinoly Architects 50 Vandam StreetNew York, NY 10013
Key staff involved in the project: Lou Vitale Engineer of Record and Jan Heindel, EMF Engineer. Project Value $750,000

Vitatech performed a comprehensive EMI/RFI site survey to record magnetic and RF emissions from a nearby electrified Amtrak train yard (12.5 kV @ 25 Hz) and Amtrak utility substation (230 kV transmission lines & transformers) and an existing Proton Facility at the University of Florida to predict the magnetic field emissions within the future hospital and potential EMI impact on all medical diagnostic instruments and research tools. Project included NMRs, MRIs (i.e., 3T, 9T, 11.7T, etc.), CTs, Proton Radiation Therapy Facility, Electrophysiology (i.e. EEGs, EMGs, EKGs, etc.), mammography and other medical diagnostic tools. Vitatech designed, installed and tested AC ELF and DC magnetic shielding for the Proton Facility, MRIs (3T, 9T and 11.7 T) and MRI areas (1.5T, 3T, 5T, etc.)

1999-2000 Sloan Kettering, New York, NY (500 Bed)

Milstern Properties 1271 Avenue of the Americas, suite 4200 New York, NY 10020
Key staff involved in the project: Lou Vitale Engineer of Record & Gregg Slonka, EMF Simulation Technician. Project Cost: $300,000

Vitatech Electromagnetics designed and installed magnetic shielding system for office and switchgear room below that lowered exposure levels to 3 mG RMS and less at 1-meter above shielded floor during peak building loads (Note: occupied office levels exceeded 500 mG RMS).

2000 Our Lady of Lourdes Medical Center Bala Synwyd, PA (250 Bed)

General Contractor: L.F. Driscoll Company 9 Presidential Blvd Bala Synwyd, PA 19004
Key staff involved in the project: Lou Vitale, Engineer of Record. Project Value: $150,000

Vitatech Electromagnetics simulated magnetic field emissions in telemetry areas, recommend 1 mG exposure levels and designed AC ELF magnetic shielding system to manage EMI threat. Installed AC ELF magnetic shield on wall and ceiling attenuating magnetic fields to less than 1 mG under all building loads.

2007 NYU Smilow Research Center & Hospital, New York, NY (1000+ Bed)

General Contractor: Turner Construction Company NYU School of Medicine Smilow Research Center 403 East 30th St. New York, NY 10016
Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $200,000

Vitatech Electromagnetics simulated magnetic field emissions from Con Edison transformers and network protector bus, secondary feeders, and switchgears below future auditorium. Designed and installed dual-substrate AC ELF magnetic shielding system in the main switchgear room and clinical rooms to guarantee 5 mG and less under all building loads. Installed and tested shielding system verifying final 5 mG performance at 1-meter above the shielded floor.

2006 Mount Sinai School of Medicine, New York City, NY

Medical Research Facility
EMI Assessment & Recommended AC ELF/DC & RF shielding of MRIs, NMRs, Electron Microscopes, CT, electrophysiology, etc. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $250,000

2003 Baylor Medical Center, Plano, TX (250 Bed)

112 Bed Acute Care Medical Research Facility
EMI Assessment, Transmission Line Simulations & Recommended AC ELF Magnetic Shielding. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $25,000

Partial List of Commercial EMI/EMF Shielding Projects

2007-2012 World Trade Center (WTC) 1, 2, 3 & 4, New York, City, NY

Architect: Jaros, Baun & Bolles
Owners: Port Authority of New York and New Jersey (PANYNJ) and Silverstein Properties.
General Contractor: Tishman Construction
Vitatech simulated and designed AC ELF magnetic shielding for WTC 1, 2, 3 & 4 that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings from substations and electrical rooms. Vitatech and EMS installed AC ELF magnetic shielding in WTC 2, 3 & 4. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welding, Director of Operations, and Debra Vitale / Jessica Vitale (Project Managers – Shielding Installation). Project Cost: $2,500,000

2005-2008 One Bryant Park, New York City, NY

Owner: Durst Properties. Architect: Cook & Fox Architects LLP/Adamson Associates
General Contractor: Tishman Construction
Simulations, Design, Fabrication & Installation of 130,000 sq. ft. AC ELF Magnetic Shielding that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings from substations and electrical rooms.. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, and Debra Vitale, Project Manager – Shielding Installation. Project Cost: $2,500,000

2008-2010 BP Bright Lights, Chicago, IL

Architect: Gensler Architecture, Design and Planning, P.C. 11 East Madison, Suite 300, Chicago, IL 60602
General Contractor: BOVIS Lend Lease, 10th Floor
Renovation Design, Fabrication & Installation of AC ELF Magnetic Shield that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welding, Director of Operations and Debra Vitale (Project Manager– Shielding Installation). Project Cost: $873,000

2006-2008 Goldman Sachs Site 26, New York City, NY

Architect: ADAMSON ASSOCIATES Architects
General Contractor: Tishman Construction
Design, Fabrication & Installation of AC ELF Magnetic Shielding (75,000 sq. ft.) that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings from substations and electrical rooms. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welding, Director of Operations, and Debra Vitale Project Manager – Shielding Installation. Project Cost: $1,048,000

2006-2007 Ropes & Gray, Fox News Building, New York City, NY

Vitatech designed/installed a 15,000 sq. ft. ceiling, wall and floor shielding system (first of the kind in the world) in the basement of FOX News Building that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded ceiling and walls. \Key staff involved: Lou Vitale, Engineer of Record and Debra Vitale Project Manager – Shielding Installation. Project Cost: $574,500

2006 Estee Lauder/ Macklowe Management/GM Building, New York City, NY

Owner: Macklowe Management
Design, Fabrication & Installation of ground/net current AC ELF Magnetic Shield that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded conduits, ceiling and walls from substations and electrical rooms. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $249,500

2006-2008 Royal Bank of Scotland, Stamford, CT

Architect: Jaros, Baum & Bolles
General Contractor: Turner Construction
Design, Fabrication & Installation of AC ELF Magnetic Shield that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings from substations and electrical rooms. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician, Joshua Welling, Director of Operations, and Debra Vitale Project Manager – Shielding Installation. Project Cost: $394,520

2002-2006 Seven (7) World Trade Center, New York City, NY

Architect: Skidmore, Owings & Merrill LLP
General Contractor: Tishman Construction
Design, Fabrication & Installation of AC ELF magnetic Shield that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded floors, walls and ceilings from substations and electrical rooms. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $150,000

2003-2004 750 East Pratt Street, Baltimore, MD

Architect: RTKL Associates, Inc.
General Contractor: The Whiting-Turner Contracting Company
Vitatech designed/installed a 15,000 sq. ft. AC ELF magnetic shield in the interstitial space between the main 13.8 kV city substation at 750 Pratt Street and a new high-rise office/ retail building constructed directly above the substation in the City of Baltimore that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded interstitial space. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $430,258

2004-2005 500 West Monroe, Chicago, IL

Owner: SRI Monroe Street Venture, LLC
Design, Fabrication & Installation of 5,000 sq. ft. AC ELF Magnetic Shield in 13.5 kV and secondary 480V/208V substation with transformers and collector bus that achieved less than

10 mG RMS Br resultant measured 1-meter from shielded walls and ceiling. Key staff involved: Lou Vitale, Engineer of Record. Project Cost: $275,000

2013-2013 80 Pine, New York City, NY

Architect: Jaros, Baun & Bolles, Contact: Julias Bogad.
General Contractor: Turner Construction.
Building Owner: Rudin Management
Commercial Building Renovation- EMI Design, Fabrication & Installation of AC ELF Magnetic Shielding Systems that achieved less than 10 mG RMS Br resultant measured 1-meter from shielded ceiling from substations and electrical gear.. Key staff involved: Lou Vitale, Engineer of Record, Greg Slonka, EMF Simulation Technician and Debra Vitale Project Manager – Shielding Installation. Project Cost: $500,000

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