

AC ELF Magnetic Shield Project – First Floor Office Area, NYC, NY

Vitatech recorded mapped 60 Hz magnetic flux density data with a FieldStar 1000 gaussmeter and survey wheel in an unshielded First Floor Office Area located above energized network protector vaults, secondary feeders and switchgears. A peak of 198 mG RMS was recorded in the corner office above the network protector bus with levels exceeding 612 mG measured on the floor as shown below in Diagram #1.

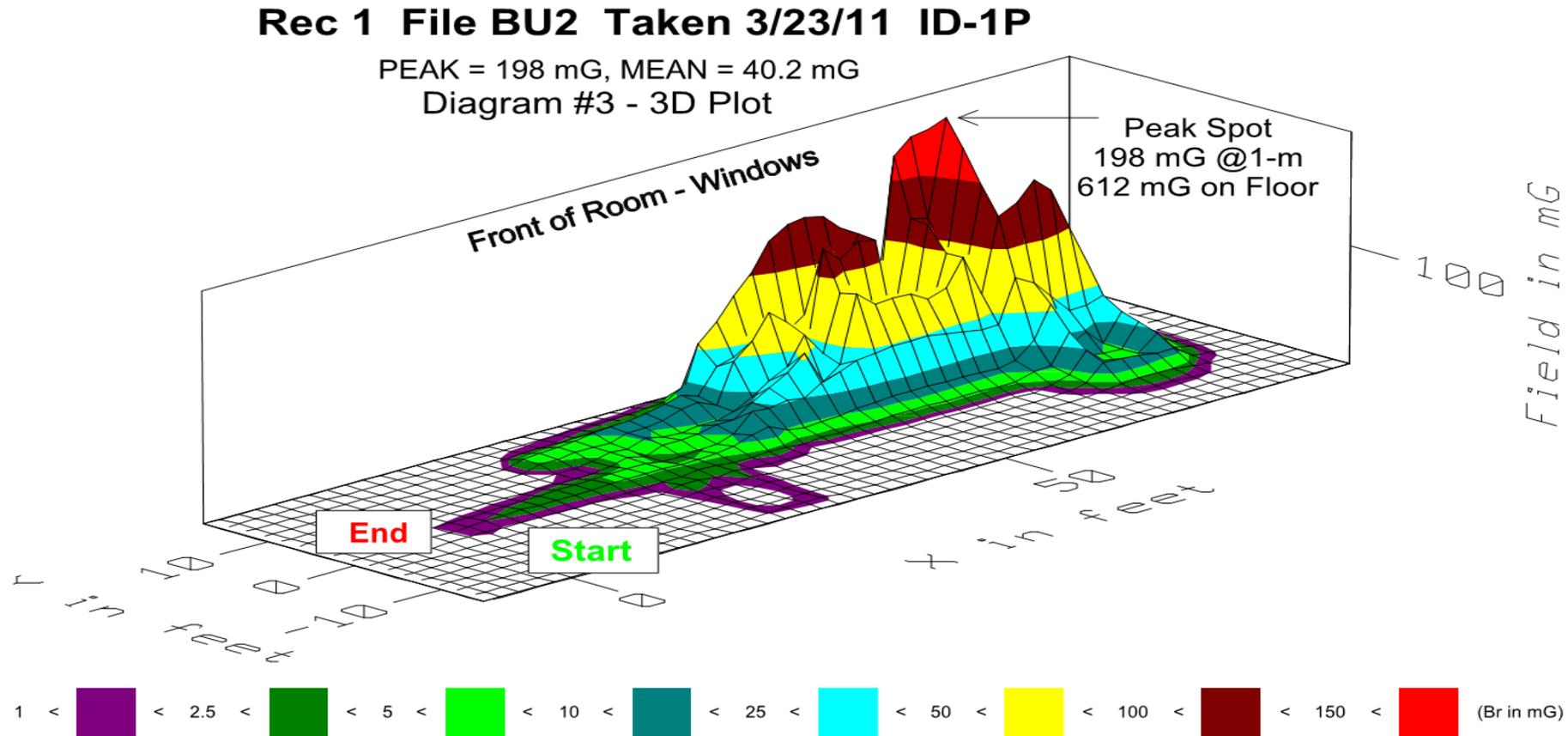


Diagram #1, Actual 60 Hz Magnetic Field Level – First Floor Office Area

Vititech generated a 3-D Finite Element Model (FEM) simulation of the energized network protectors, secondary feeders and switchgears below the First Floor Office Area. The FEM 2-D sliced three (3) cross-section simulations shown in Diagram #2 below were very similar to the actual recorded levels in Diagram #1 verifying the accuracy of our simulated model.

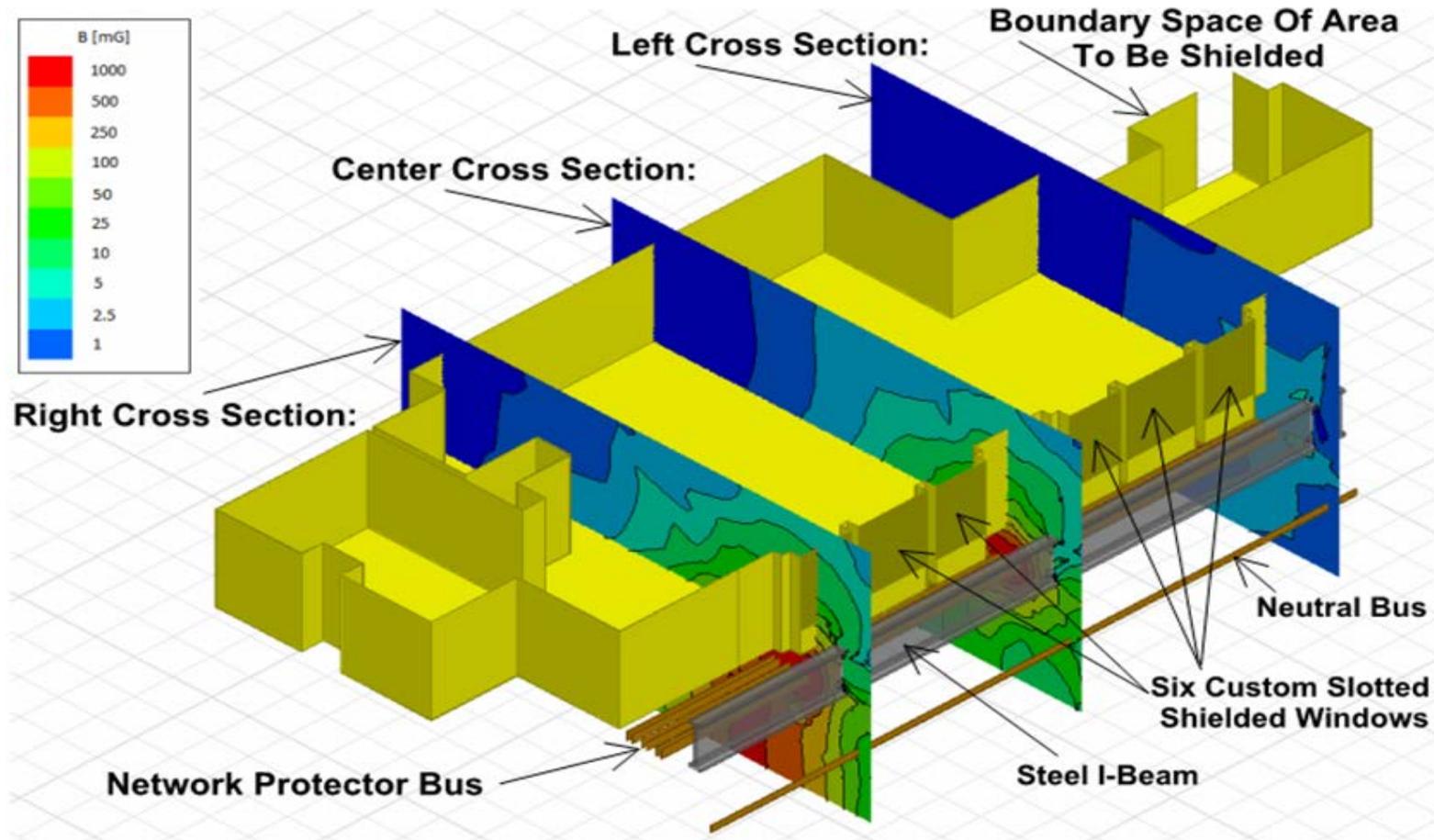


Diagram #2, 3-D FEM Model Unshielded Simulation Slices Showing Predicted Levels

Vitatech designed a dual-substrate AC ELF floor with window shielding system in the 3-D FEM model, and the 60 Hz magnetic field shielding performance was simulated. All areas in the shielded First Floor Office Area complied with the Owners 5 mG RMS and less requirement shown in Diagram #3 below and the next slide:

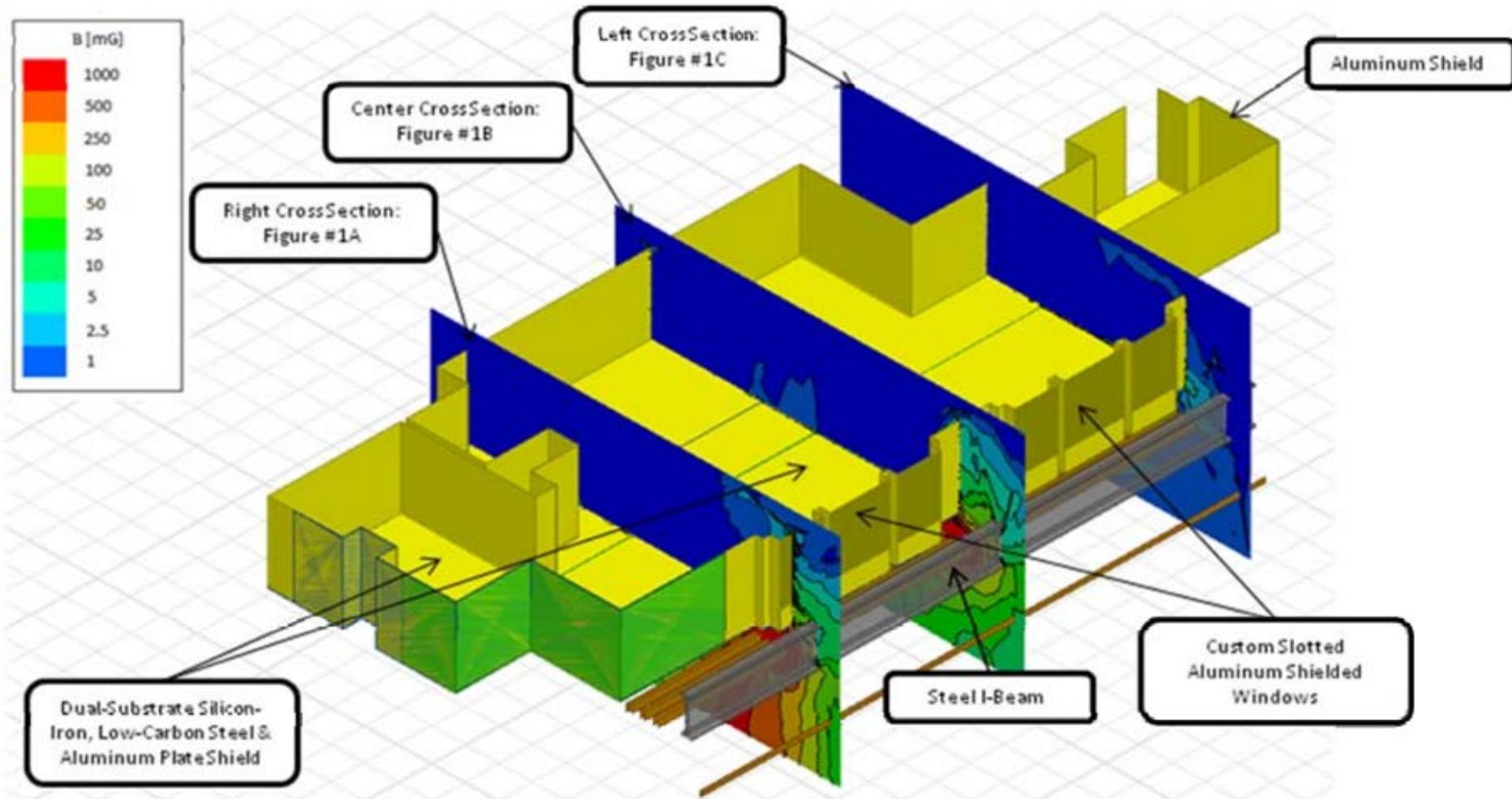


Diagram #3, 3-D FEM Model Shielded Simulation Slices Showing Predicted Levels

Diagram #4 below shows 5 mG RMS and less in the Right Cross-Section Figure #1A slice where the unshielded levels previously peaked at 198 mG at 1m after installation of our dual-substrate AC ELF magnetic floor and window shielding system. Diagram #5 in the next slide shows the final recorded 60 Hz magnetic flux density levels in the elevated and high window area after the shield was installed.

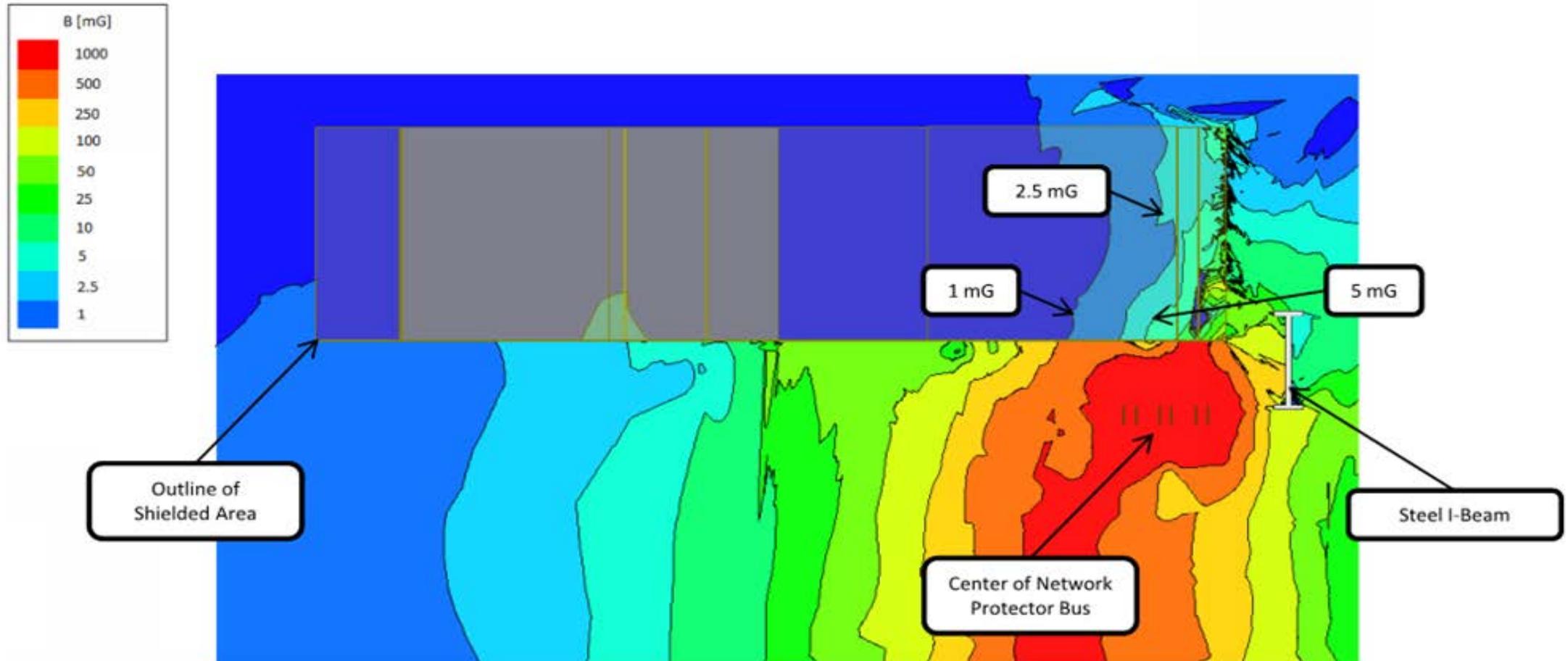


Diagram #4, Right Cross-Section Figure #1A, Shielded Room Less Than 5 mG RMS @ 1m

Final Performance Testing: Vitatech recorded the 60 Hz magnetic flux density levels at 1-m in the First Floor Shielded Office Area which originally had peak levels of 198 mG at 1m. The average was 3.1 mG RMS with a single peak of 6.12 mG RMS at the corner of the window frame. All floor area levels were less than 5 mG RMS and fully complied with the performance guarantee.

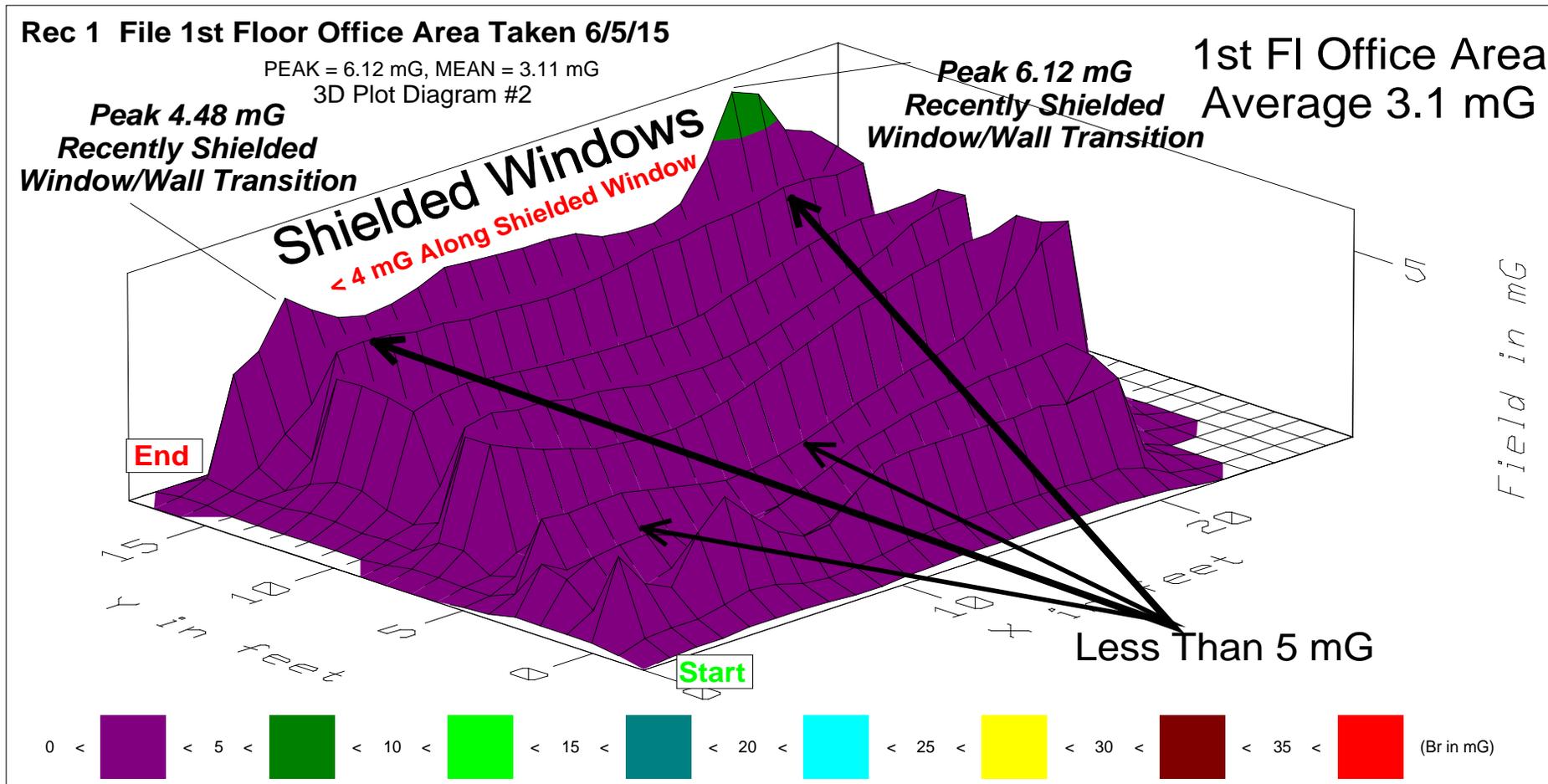


Diagram #5, Final Window Area AC ELF Magnetic Shield Site Achieve 5 mG RMS @1m

Vititech utilizes *state-of-the-art* EFC-400PS low-frequency electric and magnetic field, ANSYS Maxwell FEM and EFC-400TC RF simulation software packages to generate sophisticated AC ELF and DC simulations. These simulations demonstrate the efficacy and final attenuation of proposed shield designs so Vititech can *guarantee the final performance of AC ELF, DC and RF shielding designs.*

We are a technical team of Engineers, Specification Writers, Physics / Mathematics graduates and CAD technicians (AEC – Revit, Navisworks, Inventor) who have the requisite expertise and qualifications to meet all **EMI/RFI project** requirements.