IBM 323 Annex Fabrication Facility
East Fishkill, NY

Low-vibration & low-noise design

Client
IBM 323 Annex
Fabrication Facility

Completion
2003

Work Scopes
Noise Control
Vibration Design &
Measurement

Architect/Engineer
IDC-CH2M

Project Design Goals
VC-D for photolithograhy
VC-B for non-photo areas

IBM constructed an annex to Building 323 at the East Fishkill campus in East Fishkill, New York. The new Building 323 Annex consists of about 50,000 square feet of cleanroom space and is dedicated to 300mm foundry manufacturing using 0.12micron technology. The fab floor consists of photolithography, metrology and Reticle inspection equipment. According to Semiconductor International, IBM Building 323 was awarded the Top Fab of the Year in 2005.

IBM requested that we assist them in the vibration and noise design of the annex facility. Our duties included ambient vibration measurement, vibration design of fab floors and mitigation control design of various noise/vibration sources.

For vibration design, we worked with IDC and IBM to determine concept design for structural and foundation systems. We performed calculations to determine the size of floor bays, waffle configurations, columns, shearwalls, and structural isolation breaks along with other key structural elements. We also developed project-specific vibration isolation specification for all MEP systems.

In addition to vibration control, we assisted the noise design of the facility by recommending mitigation measures for prominent noise sources such HVAC fans and fan filter units.