Invitrogen / Molecular Probes
Eugene, OR

Structural vibration design

Client
Invitrogen/ Molecular Probes

Completion
2005

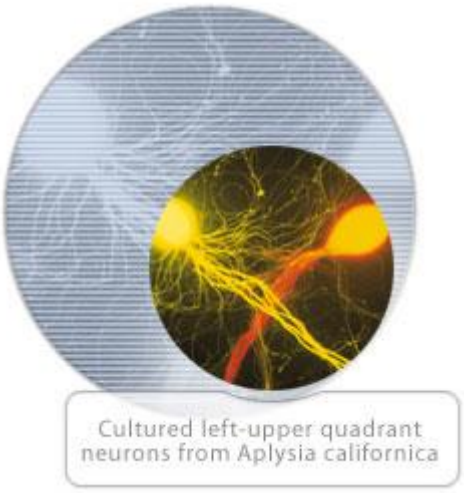
Work Scopes
Structural Vibration Design

Invitrogen Corporation is a major vendor of products and services to academic, government, and private research groups worldwide. The company's research and development efforts are focused on technologies in all major areas of biological discovery, including functional genomics, proteomics, bioinformatics, and cell biology.

Based in Eugene, Oregon, Molecular Probes was recently acquired by Invitrogen. Molecular Probes provides novel fluorescent reagents and detection solutions for use in cutting-edge research.

Invitrogen's new facility in Eugene presented significant challenges in structural vibration design. The conceptual design included numerous space designations, including laboratory, conference, office, and library spaces. With varying planning needs for each of these spaces, the structural concept for the facility included many different bay sizes, orientations, and even odd-shaped bays.

Because the owner requested that much of the vibration-sensitive uses be located on upper floors, our goal was to accommodate the vibration needs of these areas without compromising space planning on the ground level.



Cultured left-upper quadrant neurons from Aplysia californica

For example, in requesting very large bays (48' in one dimension) to accommodate a first floor conference space, meeting vibration performance goals at the upper level required deep girders.

In total, nine different bay types were addressed. In our design, we streamlined the structural configuration by reducing the number of steel sections used. Refinement of the design produced options for reducing overall steel tonnage by balancing beam, girder, and concrete floor depth. We also produced alternative designs for the large bays, so that the deep girders would not add excessive height to the building.

With our involvement, the team was able to arrive at a design that protected vibration-sensitive work at the upper level without interfering with ground level uses. The team was able to reduce overall building height by six inches, and cost savings were realized through optimization of steel tonnage and the reduction of the number of steel sections used.