

# The Millennium Project

## Gennum Corporation

Gennum is a Canadian high-technology company that designs, manufactures and markets electronic components, primarily silicon integrated circuits and thick-film hybrid circuits for the hearing aid, video and broadcast industries.

The Millennium Project involved the expansion of Gennum's facilities in Burlington, Ontario, which included a new 95,000-square-foot building with production clean rooms, laboratory, office, finished goods storage, chemical storage and building support services. Most of the facility's space was for specialized production areas to provide suitable environmental and containment conditions for the manufacturing processes. The production areas consisted of Class 100 and Class 1,000 clean room spaces, and Class 100,000 laboratory space. The layout was designed to separate these critical areas with architectural features, areas for personnel and material product flow, and HVAC.

Production was to take place in several isolated suites. Personnel flow and gowning requirements were established to ensure the purity and integrity of the product. Multiple HVAC systems allowed for individualized suite control, and suitable levels of filtration and pressurization.

Directional airflows isolated contaminants to guarantee cleanliness in critical areas. Air locks were used to maintain required levels of pressurization for the segregation of operating areas, and for the gowning of personnel. In the clean rooms, the air supply was introduced through HEPA terminal diffusers at 90 fpm, and return-air provision was made low on the wall or through perforated flooring. The rooms were to be kept at

a higher level of pressurization (approximately +0.5" WG) than the adjacent corridor areas.

As Gennum was uncertain about its potential business needs, building systems were designed to accommodate all types of changes in the future. Great care was taken in the detailed design phase to balance construction costs with redundancy and flexibility requirements.

Project Value: \$23M CDN

### Overview

#### Industry:

Consumer Products

#### Focus:

A new 95,000-square-foot facility with production clean rooms, laboratory, office, finished goods storage, chemical storage and building support services

#### Country:

Canada

