

MUSEUM OF GLASS

Tacoma, WA

SQUARE FEET

75,000

COST

\$25,000,000

COMPLETED

2002

OWNER

Museum of Glass

ARCHITECT

Arthur Erickson / Nick
Milkovich Architects –
Vancouver, B.C. Canada

AWARD

2003 Gold Award,
American Council of
Engineering Companies,
Washington

ADDED VALUE

One of the primary challenges was to design environmental systems capable of handling an industrial glass blowing shop in a public viewing arena, while at the same time, meet environmentally sensitive requirements for the museum where air quality, temperature, and humidity control need to be tightly controlled.

“Notkin’s design of a multi-tiered air supply system and the application of cooling with air movement, rather than costly air conditioning, helped to reduce both construction costs and long-term operational costs.”

Laurie Haag, Deputy Director
Museum of Glass



SCOPE

Shell and core design for a 75,000 sq. ft. glass art museum inspired by the works of Tacoma native artist, Dale Chihuly. The building includes four stories of glass walls and a concrete structure counterbalanced by a 90-foot steel cone that houses the hot shop furnaces for glass blowing and sculpting demonstrations. The cone is a key architectural element of the building.

ENERGY CONSERVATION FEATURES

- No mechanical cooling is required in the hot shop area. Part of the experience is to “feel the heat.” An environmental monitoring system controls extreme emissions and heat from the kiln. Visitors will feel a breeze when entering the amphitheater that surrounds the hot shop due to convective cooling and high air change rates, but will not feel uncomfortable. Even though it may be 90 degrees in the room, it will feel like 75 degrees due to a “wind chill” effect with air constantly circulated around the audience.
- Heat recovery from the exhaust/combustion air above the furnaces is used to heat domestic water and other building areas.
- Sensitive air quality controls were designed to reduce outside quantities below code levels, while also maintaining indoor air quality.
- Variable air volume systems reduce air flow in galleries while also tracking the space loads.
- Airflow in the hot shop is modulated to minimum levels to satisfy both combustion and temperature in the space.
- Because there is no insulation in the cone, heat is radiated from the cone in lieu of trapping it within the occupied environment, which would have required higher air flows and increased energy to remove.