

Washington Capitals Iceplex

Arlington, Virginia



Team Roster

- **Owners:** Lincoln Holdings, Arlington County
- **Architect:** Architecture, Inc.
- **Structural Engineer:** Rathgeber/Goss Associates
- **MEP Engineer:** KTA Group
- **Civil Engineer:** VIKA
- **Construction Manager:** Sigal Construction Corporation

The Stats

- **Project Cost:** \$42.7M
- **Size:** 137,000 SF
- **Levels:** 9
- **Construction Dates:** January 2005 - present
- **Delivery Method:** Design-Bid-Build

Architectural Line

- **Highest ice rink above street level in the United States**
- **Built on top of existing seven story parking garage**
- **Designed to be LEED Certified**
- **Two NHL regulation size rinks with training facility and corporate offices**

Structural Line

- **Parking Structure**
 - Five levels cast-in-place concrete
 - One level post-tensioned concrete
 - One level composite steel
- **Ice Rink/Training Facility**
 - Composite Steel
 - Deep long-span roof joists providing clear space for rinks

Mechanical Line

- **Desiccant based dehumidification system**
- **Refrigerant based cooling system**
- **Air space that contacts ice must remain 10-20 degrees above ice surface temperature**
- **CO2 sensors regulate required 8000 cfm of outside air to ice rinks**
- **Network of ammonia refrigerant piping runs under rink to create and maintain ice**

Electrical/Lighting Line

- **4000-ampere, 277/480 volt 3-phase, 4 wire switchboard located on garage level one**
- **Service extended to 8th and 9th level Iceplex to distribution switchboard via bus duct**
- **120/208 volt step-down transformer located in mechanical rooms if needed**
- **Lighting served at 277 volts**
- **Emergency power to support life safety systems and fire pump**

Fire Protection Line

- **Standard wet system complying with NFPA 13, 14, 24**
- **Meets requirements for high-rise building structures**
- **Fire pump maintains required 100 psi at top of standpipes**
- **Fully alarmed heat trace system**

Megan Kohut | Structural Option

<http://www.engr.psu.edu/ae/thesis/portfolios/2008/mkk157/>