IN THE KNOW

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THE KNOWLEDGE YOU NEED DIRECT FROM THE MINDS OF MEP ENGINEERS

Design Assist: What Does it Mean?

Project delivery methods continue to evolve, and with them comes a growing list of terminology. While most AEC professionals are familiar with Design-Bid-Build and Design-Build, the Design Assist approach often falls into a gray area. It's a term that's frequently misused so it's worth clarifying what it is and what it isn't, especially as it pertains to MEP engineering:

Design-Bid-Build: The traditional approach. The design team completes construction documents, then contractors competitively bid the finished drawings. Pricing is typically based on a 100% completed design.

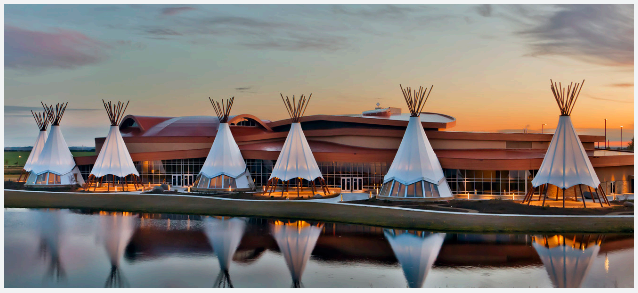
Design-Build: The contractor assumes responsibility for delivering both the design and construction. An engineering firm like EP might (might!) establish a basis of design, but responsibility for completing the full design is handled by subcontractors.

Design Assist: Falls somewhere in the middle. The architect and engineer are the design team and engineer of record throughout the project, but a contractor is brought on board before the design is complete to provide input on pricing, constructability, scheduling, lead times, and installation strategies.

[Note: Construction Manager at-Risk (CMAR) and Construction Manager as Advisor (CMa) are also common project delivery approaches. Because they describe the construction manager's role rather than the relationship between design and construction, we're going to set those aside for the moment.]

How the Design Assist Process Works

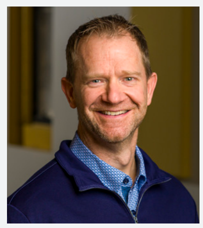
In a typical Design Assist project, the design team develops the project to a Design Development (DD) level (or a little beyond)—roughly 40–70% complete—before issuing a package to multiple contractors for pricing. Based on the responses, a contractor is selected and a Guaranteed Maximum Price (GMP) is established. The contractor then joins the team as the design continues toward completed construction documents.



EP provided MEP engineering services for the Shakopee Mdewakanton Sioux Community *Hocokata Ti* Cultural Center in Shakopee, Minn. It's an example of a project completed with a design-assist approach.

One advantage to the design assist process is that pricing and constructability discussions happen while the design is still flexible enough to respond. But clear communication between teams and mutual respect for each party's expertise is absolutely key.

Design Assist isn't the right fit for every project. (Design-Bid-Build remains the preferred approach for many public projects and organizations with strict procurement requirements, for example). But when schedule, complexity, or budget certainty are priorities, Design Assist can be an effective tool for bringing designers and builders together earlier in the process.



On the mind of ***Scott Vander Heiden, PE, LEED AP BD+C***
Mechanical Engineer and Managing Partner

Do I Need a Lighting Designer? 5 Questions Answered

Lighting affects far more than visibility. It influences comfort, productivity, aesthetics, energy use, and even how people experience a space. Yet many owners and architects have questions:

1. What does a lighting designer actually do?

Lighting designers focus on the visual experience of a space. They work closely with architects, interior designers, and owners to develop lighting concepts, select fixtures, and create layered environments that combine task lighting, ambient lighting, and decorative elements.

Their expertise is often most valuable when lighting is intended to be part of the design statement rather than simply a building system.

The renovated Playwrights' Center project in St. Paul, Minn., an example of a project that utilized an outside lighting designer.

2. What does the electrical engineer do?

The electrical engineer turns the vision into a functioning system.

That includes verifying illumination levels, ensuring energy code compliance, designing controls, coordinating power requirements, documenting the design for bidding, and confirming that selected products meet technical and regulatory requirements.

3. Does every project need a lighting designer?

No. Many projects across industries are successfully designed by the electrical engineering team, often in close coordination with the architect and interior designer. In these cases, the lighting goals are generally well understood and do not require extensive aesthetic exploration.

4. When is a lighting designer most valuable?

Lighting designers are often most beneficial in projects where lighting plays a major role in the user experience.

Examples include hospitality, retail, restaurants, high-end workplace environments, customer experience centers, signature lobbies, theater settings, and other spaces where creating a memorable impression is a priority. These projects often benefit from the additional creative exploration and fixture selection expertise a lighting designer brings.

5. What are the keys to success?

Clear roles and collaboration.

The best outcomes occur when each team member focuses on their area of expertise. Lighting designers help shape the vision. Architects and interior designers guide the overall experience. Engineers ensure the solution performs as intended, complies with code, and can be successfully constructed.

The goal isn't deciding who owns the lighting. The goal is delivering the right lighting solution for the project.

On the mind of
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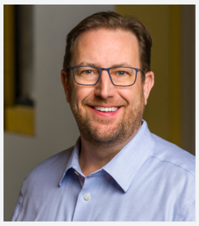
Electrical Engineer and Partner



MEP Considerations for Ice Arena Design

At first glance, an ice arena can seem deceptively simple: a big cold space, some seating, and a slab of ice at the center. In reality, ice arenas are among the most technically demanding building types from an MEP perspective. Ice quality, occupant comfort, energy performance, and long-term operability are all shaped by decisions made very early in design—often before systems are even sketched.

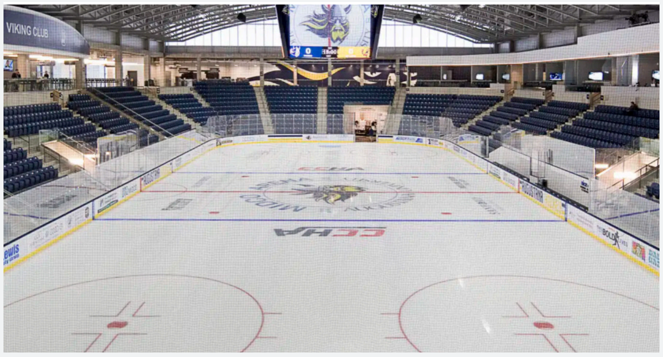
There are several MEP considerations worth addressing early, before a design gets too far down the road.

1. Outside Air and Humidity Control Drive Everything

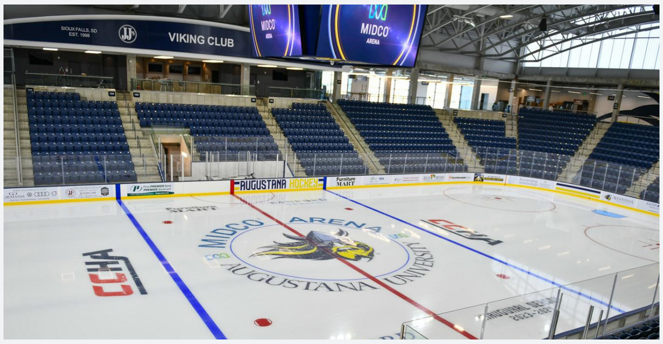
Humidity control is foundational to a successful ice arena. Too much moisture in the space can lead to fog, condensation, and degraded ice quality—issues that are difficult and expensive to correct after the fact.

Dedicated dehumidification systems (often desiccant-based units designed specifically for ice arenas) are frequently required to manage moisture levels in the bowl, and they must be sized with a clear understanding of outside air needs. That includes not only the ice surface itself, but also the number of people expected in the building and how air moves through adjacent spaces.

Early questions like *How many spectators are we designing for?* and *Where does outside air enter the building?* have a direct impact on equipment sizing and performance. When those questions are answered late, systems are often forced to compensate in ways they were never intended to.



EP provided MEP engineering services for Midco Arena at Augustana University in Sioux Falls, S.D.



2. What's Open to the Ice Matters

Open concourses, suites, grand staircases, restrooms, and circulation areas all interact with the ice bowl when there's no physical separation. These architectural decisions affect airflow, temperature control, and humidity in ways that can be difficult to predict if they're not discussed early.

Mechanical systems can help manage these interactions, but they can't fully overcome certain design choices. Understanding the MEP implications of openness early allows the design team to balance architectural goals with long-term performance and comfort.

3. Air Distribution Can Help (or Hurt) Ice Quality

In ice arenas, how air is delivered matters just as much as how *much* air is delivered.

Air should never be blown directly onto the ice surface, as it can affect ice quality and increase energy use. Poor air distribution can also create comfort issues for spectators.

Ceiling heights, roof geometry, diffuser placement, and return air locations all play a role in maintaining stable ice conditions while keeping spectators comfortable.

4. Refrigeration Systems Demand Ongoing Coordination

Ice refrigeration systems are typically designed by specialty consultants or vendors, but they have significant implications for the rest of the building's MEP systems.

Refrigerant choice alone can dramatically affect ventilation requirements, safety systems, and equipment room sizing. Some refrigerants (such as ammonia) trigger substantial code-mandated airflow rates, while others are more manageable—but those impacts need to be understood early.

In addition, refrigeration systems often present opportunities for heat recovery. Waste heat can be reused for ice melt pits, zamboni water, snow melt systems, or even building heating.

5. Sunlight and Space / Location Decisions

Direct sunlight on the ice surface can degrade ice quality, making glazing placement, orientation, and material selection critical. And large mechanical systems often require significant space, making sloped roofs or limited roof area for equipment placement a challenge.

Addressing these issues early helps avoid costly compromises later and ensures that mechanical systems can be integrated cleanly into the building.

FINAL THOUGHTS

Each of the items above is important from an MEP standpoint. **But just as important is how those systems show up in the building.** We consistently hear from architects that thoughtful MEP integration matters — that mechanical, electrical, and plumbing systems shouldn't feel "applied" after the fact, but **intentionally woven into the overall design.** Preserving architectural intent while meeting demanding technical requirements takes early coordination, flexibility, and trust across the team.

In ice arena design, good performance doesn't start at the first puck drop. It starts with asking the right MEP questions early, and carrying those answers forward in a way that supports both performance and design.

On the mind of ***Brian Ringsven***
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