Technical Considerations for High-Rise Cold Storage Facilities

Michael D. Jones, AIA, President, Primus Design Services, LLC
Erik Gunderson, Executive Vice President, Primus Builders, Inc.
AGENDA

• Planning
• Design
• Construction
• Q & A
PLANNING

- Does it make sense?
  - Quantity of pallets
  - High Density Storage Capacity
  - Site Size
  - Location (Market)
  - Flexibility

- Select ASRS Vendor

- Design & Construction Team Collaboration
HIGH-RISE AS/RS
CONSTRUCTION
Design

- Code Considerations
  - Building Code
  - Fire Code
  - Insurance Underwriter Requirements
• Local Ordinances

• Site Specifics
  • Setbacks
  • Fire Department Access
  • Proximity to Airport
  • Lightning Protection
  • Rail Access
• Loading Considerations
  • Foundation Systems
  • Seismic
  • Wind
  • Uplift

• Slab Options
  • Steel fiber reinforced concrete
  • Increased slab depth
  • Piles integrated into the design

• Coordination of Slab Reinforcement
  • Reinforcing Steel
  • Seismic Requirements
CONSTRUCTION

- Pad Development
  - Subgrade
  - Temporary storm water management
  - Sump

- Underfloor Systems

- Slab Placement

- Structure

- Building Envelope

- Material Handling Doors
1. Fire Protection
2. Refrigeration
3. Electrical
SITE MANAGEMENT

- Tremendous amount of material
- Close coordination between ASRS vendor and Design-Build
- Laydown Areas
- Site Conveyance
  - Hydraulic wheeled cranes
  - Tower Crane
  - Personnel
- Power to Tower Crane
- Overhead Safety
QUESTIONS & ANSWERS
THANK YOU!