



Essentia Health



McGough

Lessons Learned Building the Replacement St. Mary's Medical Center in Duluth, MN



PRESENTED BY:

Dan Cebelinski, Essentia Health

Jeff Dzurik, McGough

Presenters

Dan Cebelinski, Essentia Health

- Current Role: System Vice President – Facility Services
- Project Role: Project Lead/Director

Jeff Dzurik, McGough Construction

- Current Role: Executive Vice President, Construction Services
- Project Role: Project Executive



Session Overview

Project Overview

Learning Objectives/Lessons Learned

- **Compliance:** Strategies to engage with the Authorities Having Jurisdiction (AHJs) early and often to gain alignment and avoid surprises
- **Operations:** Lessons learned post building activation to apply to your future projects
- **Design and Construction:** What worked well, and what didn't. New processes and technologies embedded into the Design and Construction and planning for these early in the project



Project Overview



Project Overview

St. Mary's Medical Center

- Complete Replacement Hospital
- \$900M Project Cost
 - Largest Private Investment in the City of Duluth's History
- 942,000 SF of new Construction
 - Connected to Existing DC-1 and DC-2 Buildings
 - 3-Story Overbuild above DC-1 (Fully Occupied Building)
 - 130,000 SF Shell Space
- Renovations
 - 140,000 SF Renovations



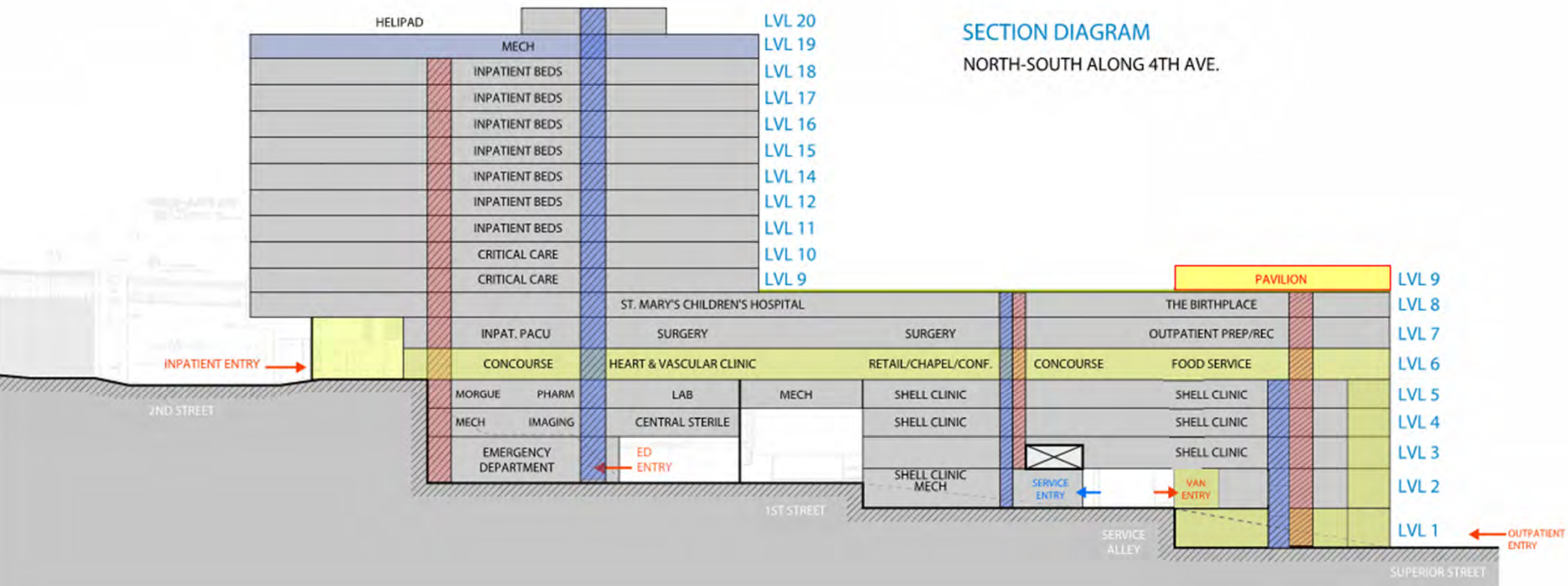
Project Overview

Timeline

- Vision and Planning
 - 2017 Vision and Early Planning
- Construction
 - Groundbreaking September 2019
 - Excavation and Foundations Begin January 2020
 - Topping Off November 2021
 - Substantial Completion February 2023
- Building Activation
 - Equipment and Furniture Move-in February 2023
 - Workflows and Training Q1 and Q2
 - First Patient July 30, 2023



Project Overview



Project Overview

Surgery Summary			
Level	Program/Dept	Rooms	Rooms
Level 7 Surgery			
7	Surgery	Angio	2
7	Surgery	EP Lab	2
7	Surgery	Cath Lab	2
7	Surgery	Endo Procedural Room	1
7	Surgery	OR's - Hybrid - single plane	1
7	Surgery	OR's - Hybrid - Biplane	2
7	Surgery	OR's - Heart	2
7	Surgery	OR's - General	14
7	Surgery	OR's - General (Future)	3
7	Surgery	OR SUBTOTAL	29
Level 7 Prep & Recovery			
7	Prep Recovery	Prep Recovery Bay rms	43
7	Prep Recovery	Prep Recovery Open Bay rms	25
7	Prep Recovery	Prep Recovery Rms	17
7	Prep Recovery	Prep/Recovery Rooms SUBTOTAL	85
Other Procedure			
8	Birthplace	C-Section	2
8	Birthplace	Nursery Procedure	1

Imaging Summary			
Level	Program/Dept	Rooms	Rooms
3	Emergency	Xray	1
3	Emergency	CT Procedure (1 Future)	1
4	Imaging	NUC Meds	1
4	Imaging	CT Procedure	2
4	Imaging	Xray	2
4	Imaging	Flouro	1
4	Imaging	MRI	2
6	Heart & Vascular	Nuc Meds	1
7	Surgery	Angio	2
7	Surgery	EP Lab	2
7	Surgery	Cath Lab	2
7	Surgery	Endo Procedural Room	1
7	Surgery	OR's - Hybrid - single plane	1
7	Surgery	OR's - Hybrid - Biplane	2
Total			21

Project Overview

Patient Room Summary				
Level	Program/Dept	Rooms	Rooms	Beds
Level 8	Birthplace	NICU (2 twin)	18	20
Level 8	Birthplace	PEDS	9	9
Level 8	Birthplace	PICU	5	5
Level 8	Birthplace	Midwife	3	3
Level 8	Birthplace	Ante/Partum	6	6
Level 8	Birthplace	LDRP	13	13
Level 9 & 10	Inpatient	ICU Inpatient	64	64
Level 11-18	Inpatient	Inpatient	224	224
Total			342	344

Level 3 Emergency Department			
Level	Program/Dept	Rooms	Rooms
3	Emergency	Exam Room	22
3	Emergency	Exam Room (bay) 1-6	6
3	Emergency	Exam Room BH (Sec Hold)	4
3	Emergency	Exam Room BH (ED Swing)	4
3	Emergency	Trauma Room	4
3	Emergency	Xray	1
3	Emergency	CT Procedure (1 Future)	1
Total			42

Level 6 Heart & Vascular Clinic			
Level	Program/Dept	Rooms	Rooms
6	Heart & Vascular	Exam Room	17
6	Heart & Vascular	Nuc Meds	1
6	CV/Diagnostics Rehab	Procedure	2
Total			17

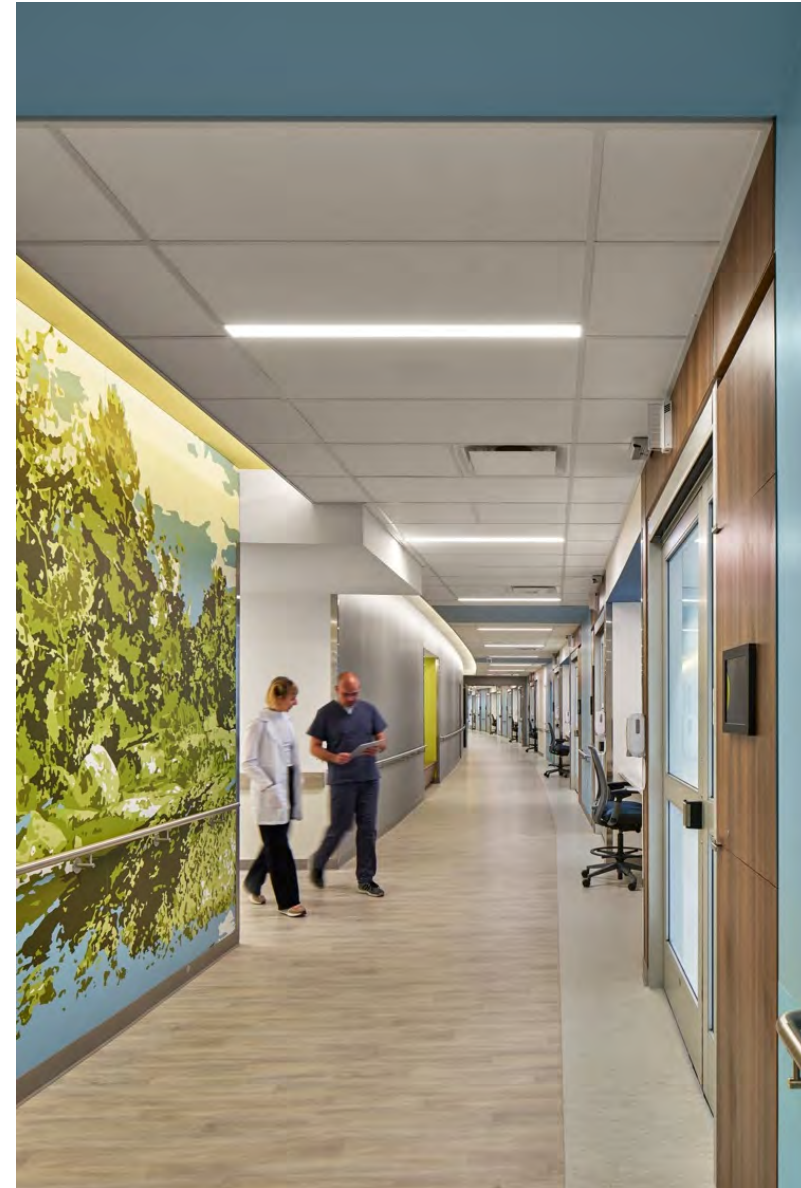
Lessons Learned: Compliance

- Local Code Officials
- State Code Officials (DOLI)
- Department of Health
- State Fire Marshal's Office
- Minnesota Department of Transportation (Helipad)
- Vizient (Mock Survey)
- Water Testing (Hygienics Water Testing)
- Factory Mutual



Lessons Learned: Patient Care Areas

- Efficiency of Med/Surg Floors
- Length of Travel
- Pass Through Cabinet Doors (Latching and Smoke Gasket)
- Patient Room Digital Monitors (Slips/Trips/Falls)
- # of Delayed Egress – Impact on ability to lock down a floor
- Patient Room Double Doors



Lessons Learned: Building Operations

- Valet
- Vertical Transportation
 - Destination Dispatch
 - Owner have own, independent vertical transportation consultant during design phase
- Glass/Heat Gain/Sun/Shades
- # of Delayed Egress – Impact on ability to lock down a floor
- Heat Recovery Chiller
- Steam Quality/District Energy/Sterilization Equipment



Lessons Learned: Helipad

- Helicopter Exhaust
 - Bipolar Ionization
 - Minimum Airflow
 - Helicopter Controlled
- Taxiway Widening
- Lightning Protection
- Fire Suppression Testing
 - PFAS
- Hydronic Heat/Tubing
 - Specifications
 - Snow melt rate



Lessons Learned: Robots

Use

- 26 Aethon Tugs Robots
- Primarily Meal Transport to Date

Statistics

- 70,000 trips in 2024

Construction Considerations

- Elevators
- Docking/Charging Stations
- Door/Access Control Coordination



Lessons Learned: Lobby Window System

System

- Custom Designed System
- Glass size: 11'-4" x 6'-6"

The Challenge

- Meeting "Design Intent"
- Design Temp. = -30 Degrees F

The Solution

- Each mullion is a diffuser
- System "hung" from above
- Heat from top, bottom and middle



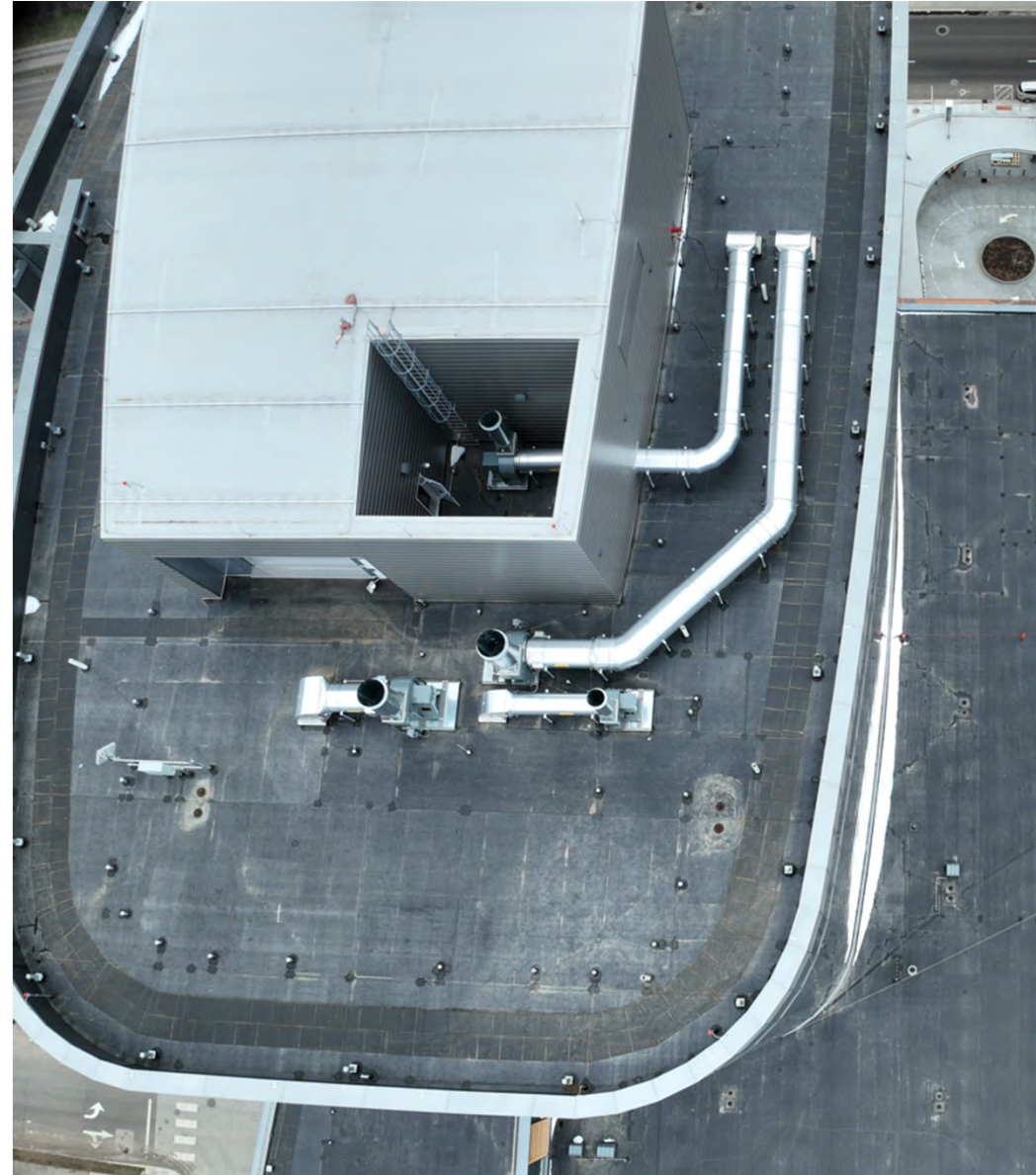
Lessons Learned: Pandemic Changes

Pandemic Exhaust

- Emergency Department
- (2) Patient Floors

Added “ICU Adaptable” Rooms

- Added 64 Rooms (2 Floors)
- Increased Air Changes
- Change out of AHU coils
- Upsize Medical Gas distribution
- Modified Headwalls



Lessons Learned: Product Issues

Nora Rubber Flooring

- nTx “Peel & Stick” product
- Floor Preparation

Rubber Base

- Cracking/Failures

Porcelanosa Exterior Tile Installation

- Product from Spain
- Shop Drawings/Installation Documentation from Spain
- Rain Screen
- Direct Adhered



Lessons Learned: Other

- Leadership Engagement in Design
 - Drain Pans/Water Sensors tied to BAS
 - Heat Recovery
- Full Time Building Engineer Engagement
- Single Source Firestopping (FM 4991, UL Qualified Contractor Program)
 - Head of Wall & Penetrations by one Contractor
- OpenSpace Application
- Drone Use



In Summary:

- Build Strong Relationships with your AHJs and Project Partners
- Never Stop Learning and Sharing
 - Both the Positive and Negative
- **TOGETHER**, we will provide better built environments for the communities we serve!
- Questions?

