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**Structural Committee | Faculty Advisor****Slide I: Intro**

- A. Background on Largo Medical Office Building (LMOB)
  - 1. General building purpose and current use
  - 2. Size, cost, and location
  - 3. Design and construction
    - a) Project delivery method and contract
    - b) Duration of each phase

**Slide II: Define project intents and scope**

- A. Present opportunities
  - 1. Torsion irregularity and potential systems to solve it
- B. Breath
  - 1. Construction Management (Logistics and Cost)
  - 2. Façade redesign and effects of change

**Slide III to VIII: Depth Details**

- A. Torsional Irregularity Solution
  - 1. Repositioning existing shear walls (Slide III to V)
    - a) Initial reason (Slide III)
    - b) Design (Slide III, IV)
      - 1) Assumptions and design choices
        - => Includes codes used
      - 2) Typical structural details
  - 2. Exterior Tilt-Up Shear Walls (Slide VI to XI)
    - a) Initial reason (Slide VI)
    - b) Design (Slide VI, VII, VIII)
      - 1) Assumptions and design choices
        - => Includes codes used
      - 2) Typical structural details
        - => Includes general impact of bracing on decisions

**Slide IX to XI: Breadth Details**

- A. Construction Management
  - 1. Project controls (Slide IX, X)
    - a) Roads and Infrastructure (Slide IX)
      - => Effects on maximum component dimensions
      - => Construction traffic
    - b) Stormwater management (Slide X)
  - 2. Site Logistics (Slide XI to XII)
    - a) Construction phasing (Slide XI to XII)

**Slide XV: Conclusion****Slide XVI: Q/A . . .****Note:**

- [1] Appendix will be present in the presentation – for clarification only – thus not included in the total number of slides.
- [2] The presentation outline is a general representation of the finalized presentation; as a result, the finalized presentation may be different from the presentation outline and shall not be judge strictly on adherence to the presentation outline.

# Largo Medical Office Building

Presented by Thaison Nguyen

# General

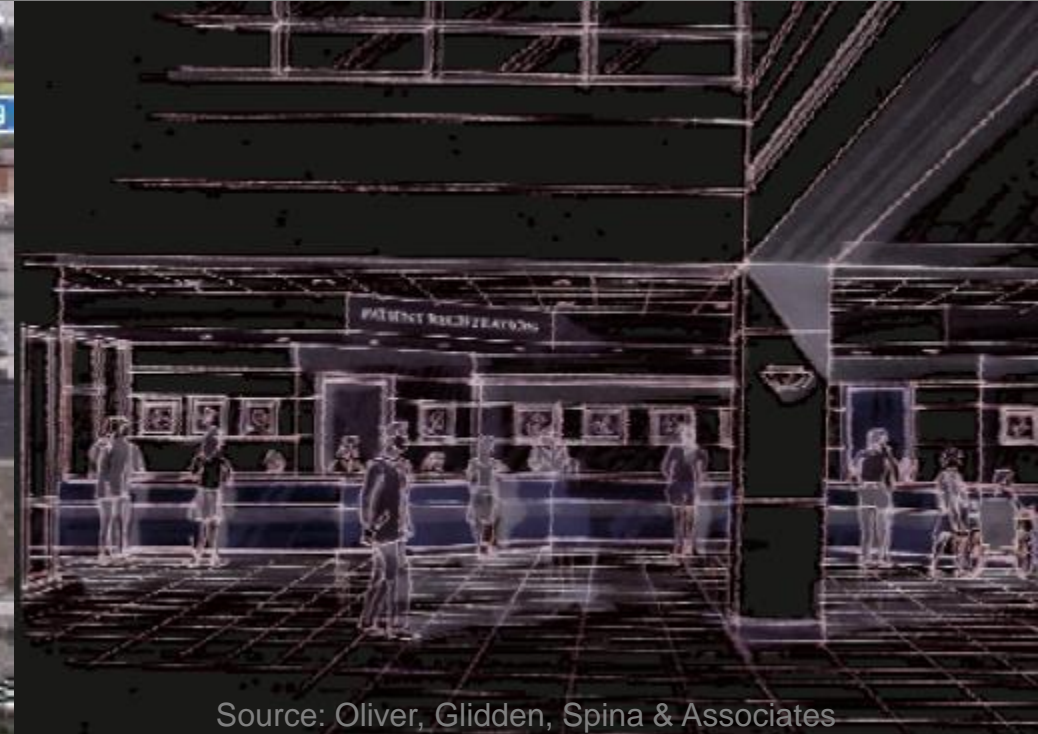
Gross Area: 154,240 sq. ft.  
As-Built Cost: \$12.6 Million (not including equipment)  
Dates of Construction: August 2008 — November 2009  
Project Delivery Method: Design-Bid-Build

# MEP Systems

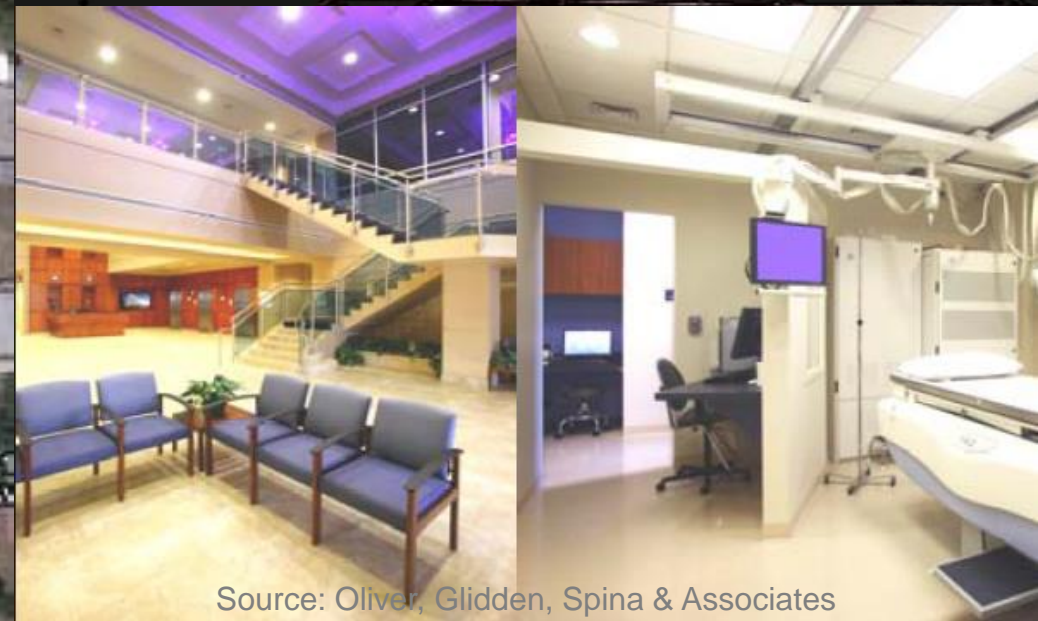
Primary Cooling: DX with (2) Cooling Towers  
Heating: Resistant Heating Elements located at each floor  
Electrical: 480/277V 3 phase - High Voltage  
              208/120V 3 phase - Low Voltage  
Lighting: LED and Fluorescent Lighting with occupancy and photo-sensors



Source: Oliver, Glidden, Spina & Associates



Source: Oliver, Glidden, Spina & Associates



Source: Oliver, Glidden, Spina & Associates

Table P1.12, Thermal and Moisture Resistance of Retrofit and Original		
Wall System	Total R-Value (h-ft <sup>2</sup> -°F/Btu)	Total R <sub>v</sub> -Value
Original	1.2	88.9
Retrofit	6.2	114.2

Table P1.13, Average Relative Humidity Across Retrofit Wall Assembly										
Layer Interface	R <sub>i</sub> /R	R <sub>vi</sub> /R <sub>v</sub>	Normal Conditions (%)				100% Exterior RH (%)			
			Winter		Summer		Winter		Summer	
			High	Low	High	Low	High	Low	High	Low
1			59.0	86.0	75.0	90.0	100.0	100.0	100.0	100.0
2	0.235	0.892	53.9	95.9	36.7	55.7	58.2	97.1	39.8	56.7
3	0.042	0.000	53.7	92.2	37.7	55.6	58.0	93.3	40.9	56.6
4	0.000	0.018	53.6	92.7	36.6	54.9	57.2	93.7	39.3	55.8
5	0.011	0.078	53.2	94.0	32.4	52.0	53.7	94.1	32.8	52.1
6	0.709	0.000	50.1	49.9	51.0	50.5	50.5	50.0	51.6	50.6
7	0.003	0.012	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

Table P1.14, Average Relative Humidity Across Original Wall Assembly										
Layer Interface	R <sub>i</sub> /R	R <sub>vi</sub> /R <sub>v</sub>	Normal Conditions (%)				100% Exterior RH (%)			
			Winter		Summer		Winter		Summer	
			High	Low	High	Low	High	Low	High	Low
1			59.0	86.0	75.0	90.0	100.0	100.0	100.0	100.0
2	0.082	0.043	58.4	81.0	76.6	88.1	97.3	93.3	101.7	97.6
3	0.000	0.000	58.4	81.0	76.6	88.1	97.3	93.3	101.7	97.6
4	0.000	0.000	58.4	81.0	76.6	88.0	97.3	93.4	101.7	97.6
5	0.442	0.953	52.1	75.9	36.9	51.1	52.2	75.9	37.1	51.2
6	0.002	0.000	52.1	75.7	37.0	51.1	52.2	75.8	37.1	51.2
7	0.474	0.004	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

Table P1.15, Average Relative Humidity Across Retrofit Wall Assembly										
Layer Interface	R <sub>i</sub> /R	R <sub>vi</sub> /R <sub>v</sub>	Normal Conditions (%)				100% Exterior RH (%)			
			Winter		Summer		Winter		Summer	
			High	Low	High	Low	High	Low	High	Low
1			59.0	86.0	75.0	90.0	100.0	100.0	100.0	100.0
2	0.016	0.034	58.8	86.0	74.1	88.7	98.3	99.3	98.5	98.3
3	0.710	0.222	54.4	48.9	98.3	77.9	83.0	54.2	127.6	85.1
4	0.098	0.000	53.9	44.9	104.8	77.6	82.3	49.7	135.9	84.8
5	0.000	0.000	53.9	44.9	104.8	77.6	82.3	49.7	135.9	84.8
6	0.085	0.741	50.4	54.0	47.3	50.3	50.5	54.1	47.4	50.3
7	0.000	0.000	50.4	54.0	47.3	50.3	50.5	54.0	47.4	50.3
8	0.091	0.003	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0