



Memorial Hermann Medical Plaza – Houston, TX

Subject: The owner and developer were committed to Hunton Trane's early involvement in the project. Trane's *upfront* integration ensured that the end result exceeded the needs and goals of the owner.



Memorial Hermann Medical Plaza

1. Introduction. Hunton Trane coordinated with the owner, consultant, and construction management team to develop a fully integrated automation and HVAC system producing maximum energy efficiency within the budget constraints of this 30-story complex structure.

2. Project Background. Memorial Hermann Medical Plaza was developed for Memorial Hermann Healthcare System as the major tenant by one of Houston's leading healthcare developers, Mischer Healthcare Services.

This is a premier facility created by experts who understand today's medical needs. It is in a prime location – at the gateway to the Texas Medical Center.

The facility is comprised of 500,000 square feet of clinical, office and commercial space plus a 2400-space parking garage. A major, onsite Ambulatory Care Center occupies 100,000 square feet on two of the project's thirty levels, and contains eight surgical suites, four endoscopy suites and a full-modality imaging center. DE Harvey served as construction manager and general contractor; and Wylie Associates was the MEP designer. The total facility is 1,000,000 square feet.

3. Key Deliverables.

- a. A building automation system delivering full integration to the key critical and non-critical systems of the facility including: medical gas, oxygen, emergency power, diesel fuel system monitoring, water softener brine solution monitoring, backflow prevention alarms, sump and fire pump systems, fire alarm system critical system alarm, carbon monoxide monitoring and exhaust control, heat trace, stairwell pressure, water heater temperature and other monitoring and control functions.
- b. Chillers selected to deliver less than 0.54 KW/ton at 42° F. leaving water.
- c. Variable evaporator flow to reduce transition issues when adding or subtracting chillers.
- d. Air handler efficiency to meet design requirement without calling for custom units.
- e. Delivery of all major HVAC equipment with factory-integrated and verified controls to reduce site start-up time and guarantee integrity of equipment/control integration.
- f. Automated 24/7 application with monthly reporting to highlight areas causing energy loss or potential comfort risk.

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4. Critical Elements of Project Success.

- Early involvement and coordination among the entire team: Hunton Trane, Mischer Healthcare Services, DE Harvey and Wylie and Associates
- Guaranteed chiller performance on tonnage and energy consumption with a \$1000/ton and \$1000/KW penalty, if a 100% factory chiller test failed to meet the specified requirements of performance.
- Project technical quality and price evaluation by the developer in close coordination with the general contractor/construction manager.
- Pre-evaluation of all equipment and automation via factory visits and demonstrations to Mischer Healthcare Services prior to bid. (The owner witnessed the quality and configuration of equipment and controls needed for the job.)

5. Benefits to Memorial Hermann Medical Plaza

- First cost savings of \$172,000 were achieved as a direct cost reduction after a competitive bid process without value engineering achieved through the efficiency of utilizing an integrated system in lieu of a site constructed control installation overlaying purchased equipment.
- The ability of the building management team to operate the facility with minimal interaction through the facility management and commissioning effectiveness of Hunton Smart Services.
- Additional first cost reduction via rebate from Center Point due to the higher efficiency of the total chiller plan operation as garnered from the higher efficiency chillers and the chiller plan optimization system.

“...We have all Trane equipment here at MHMP. This includes chillers, air handling units, fan powered terminal units and controls.

I have found their controls easy to use and robust enough to provide me with the operational control and monitoring we need.

“...very affordable and extremely useful service program for BAS called Hunton SMART Services that provides remote real-time trending and troubleshooting for all equipment connected to the control system. They see issues before I see them, call me to let me know what they have found and expedite service calls when warranted in order to get critical issues resolved. In addition, they produce a monthly report showing persistent problem areas that need to be addressed in order to cut down on wasted energy or ones that might point toward equipment problems that we cannot readily detect.”

*Robin Harrison
Property Manager
Memorial Hermann Medical Plaza*