

## Executive Summary

City Hospital – Phase I is the first phase of a multiphase development. The entire project will eventually result in the construction of approximately one million square feet of research space, one million square feet of ambulatory care and clinical office space, and one million square feet of parking and support services.

The 117,383 square feet, three-level sub-grade Research Facility is a part of City Hospital – Phase I construction. LEED certification and ASHRAE Standard 90.1 – 2004 compliance are used as basis of evaluation on the Research Facility.

City Hospital Campus Development has the ability to attain 34 point using LEED-NC Version 2.2 Checklist. The project achieves LEED Silver Certification (33 – 38 points) as intended.

Analysis of the Research Facility’s building material, equipment efficiency, and lighting power density results in one category failed to comply with the standard.

	Building Envelope		HVAC Equipment			Lighting
	Wall	Roof	Chiller	Heat Rejection	Boiler	Lighting
<b>Std 90.1 Compliance</b>	Yes	Yes	Yes	No	Yes	Yes

Major mechanical equipments supporting the Research Facility are located in the Central Utility Plant that services the entire campus. Therefore, only space occupied by ventilation distribution system is accounted for lost rentable space. Even so, the distribution system alone occupied 22% of floor space of the research Facility. The first cost for the mechanical system is approximately \$15 million, or \$86 per square foot.

Trane Trace 700 was utilized to perform energy analysis and simulate the cost to operate the building. The ventilation rate and cooling load of the computer simulation reports 70% of the design document. The difference can be accounted by an additional 30% of the airflow rate exhausted by fume hoods which was not included by the program. Based on the design document, Trace calculated the annual cost of energy approximately \$3.7 million or \$21 per square foot for the Research Facility alone.