

Executive Summary

The purpose of this report is to analyze the West Oaks location of LA Fitness located in Houston, Texas. This report reviews the first cost of the mechanical system, the lost rentable space as a result of the system, the building compliance with ASHRAE Standard 90.1-2004, the building's LEED credit points, and energy consumption.

The building's air handling system is comprised of 13 packaged rooftop air handling units. The first cost of the entire mechanical system including these units is \$551,000. That correlates to \$11.98/sf for the 46,000 sf building. The lost rentable space due to this system turned out to be negligible due to the small duct sizes and rooftop location of the units.

The two sections of ASHRAE 90.1-2004 that were checked were Section 5 on building envelope compliance and Section 9 for lighting compliance. After comparing the design documents with the standards requirements, it was found that the building did meet the building envelope standard, but failed to meet the lighting standard. This building was designed to satisfy the 2001 version of this standard and did not comply with the 2004 revisions which were more stringent on lighting power densities.

LA Fitness, West Oaks was not designed to meet the LEED criteria as can be seen by the results of that assessment. The building received 8 out of a possible 69 points.

Trane's energy simulation program TRACE was used to find the as-designed systems in the building. The results of this energy analysis showed that the building would use 1,676,874 kWh of energy each year. These results provided the lbm/yr data of building emissions that will be generated as found in the report.