Executive Summary

This report analyzes the Suburban Wellness Center to determine the number of expected LEED points generated and compliance with ASHRAE Standard 90.1-2004. An analysis of the lost rentable space by the mechanical systems is also performed.

The Suburban Wellness Center was not designed to attain a LEED certification but there were some areas where it did gains points and could easily gain more. Despite none of the prerequisites being met, with better planning in the future, a LEED rating could be achieved.

Overall, Suburban Wellness Center did meet several of the requirements of ASHRAE Standard 90.1-2004. The vertical fenestration percentage and insulation values of the walls were both met. The Prescriptive Building Envelope Option method was conducted to check for compliance based on building location. Another area that had to be met for the standard is lighting. A lighting power density criterion was given in the standard to provide a gauge to how much power must be used to light a space. The two methods used were the Building Area Method and Space by Space Method. The Suburban Wellness Center did not meet either of these methods and so an older version of the standard was used to analyze compliance. The SWC proved to comply with the Building Area Method of ASHRAE Standard 90.1-1999. This was probably due to the building being designed before the standard was revised in 2004.

A building system energy analysis was also performed and showed that the majority of the heat generated from the building is from the occupants. Most of the space in the building is used as exercise space so this makes sense since many of the occupants are giving off a lot of heat because of their workout. It also showed that during the winter months, most of the heat lost to the atmosphere was due to the windows. This was most likely from the U value of the windows being higher than that of the walls.