## (1.0) Executive Summary

The New Braunfels Regional Rehabilitation Hospital (NBRRH) is a 40-bed, acute-care hospital and physical rehabilitation clinic located approximately 30 miles northeast of San Antonio, Texas. Managed by Ernest Health, Inc., the nearly 50,000 square foot facility is located on a several hundred thousand square foot tract of land that previously held a country club. Several similar acute-care hospitals exist around the nation and are managed by Ernest Health, Inc.

Three rooftop air handling units are used to supply conditioned air to most of the facility. One large rooftop unit serves the entire north wing of the facility, which houses all patient rooms and several other clinical functions. Two smaller units serve the more public dining/administration and therapy/exam areas of the building, which are located in the south portion of the building. Additionally used to provide thermal comfort and ventilation are a dehumidification unit serving the therapy pool and a 100% makeup air unit serving the dining and kitchen areas. Supply air reheat and hydronic water heating is facilitated through the use of hot water boilers. Cooling and dehumidification of supply air is done through direct expansion within each rooftop unit; there is no chilled water being used in the mechanical system. This report includes schematic flow diagrams of the air handling units, heating hot water system, pool dehumidification process, and major components of the plumbing system.

The first cost of the mechanical system, which includes material raw costs and labor estimates, is $1.3 million, which equates to $26.29 per square foot. An annual operating cost cannot be accurately determined because the facility has only been in use for about 6 months. Utility rate structure is known, however, and an annual energy analysis was performed in Technical Report 2. This information has been included in an appendix of this report, but is likely a low estimate of actual energy usage and system operating cost.

NBRRH was designed and constructed in an accelerated process and on a limited budget, so a LEED certification was not attempted for this project. However, several aspects of the mechanical system were designed with the environment in mind. A LEED analysis was performed to determine the number of points the facility could receive from the Energy and Atmosphere (EA) and Indoor Environmental Quality (EQ) categories of the LEED Version 2.2 checklist.

The straightforward system that is being used in the facility allows for a wide range of possible changes or modifications, some of which are mentioned in the conclusion of this report based on the findings of this analysis of systems.