1.0 Executive Summary

Part I of this report focuses on The M Resort's compliance with Section 5 of ASHRAE Standard 62.1. This standard outlines general requirements for the design of a mechanical system. Part II uses the Ventilation Rate Procedure described in Section 6 of ASHRAE Standard 62.1.2007 to determine the outdoor air required for each space in the building. Part III explores The M Resort in terms of ASHRAE Standard 90.1.2007, which deals with the energy efficiency of buildings.

The building is comprised of two main areas the first is a low-rise portion that includes the casino, restaurants, kitchens, entertainment, bars, ballroom, spa and health club, meeting rooms and other various accommodations. These areas are served by air handling units and make up air units located on the low rise roof that are supplied with hot and chilled water from the central utility plant.

The guest tower is the other portion of the building, which includes standard guest suites as well as larger suites and a restaurant that is located on the top floor of the tower. The guest rooms are served by vertical fan coil units that are supplied with outdoor air from integrated wall mullions. They are supplied with chilled water and each have electric heat. A more detailed description of these different systems can be found in Section 3.0.

Twenty five of the twenty eight air handling units comply with the ASHRAE Standard. The other systems all met the outside air with some having significantly larger quantities of outside air supplied. One of the discrepancies found to exist in all of the varying outside air quantities was the differing codes used. The International Mechanical Code 2006 was used for the design of The M Resort, which upon review lists stricter requirements for the spaces listed. The space classification also varied between the codes.

The ASHRAE Standard 90.1.2007 analysis of this building has not led to any significant conclusions about the energy efficiency of the building as a whole. The compliance of the various systems that were examined under the prescriptive requirements of the standard had mixed results. A further analysis of the various systems as a whole is necessary to attain a more detailed conclusion concerning the energy efficiency of the building. A summary of this information is available in Sections 7.0, 8.0, and 9.0.