

## **Post Occupancy Thermal Comfort Corrective Action Plan**

<Insert Date>:

<Insert Project # and Name>

<Insert Building# and Name>

### **IEQc7.2 Thermal Comfort, Verification**

In complying with the LEED-NC v3.0 IEQc7.2 Thermal Comfort, Verification, the Architecture, Engineering, and Construction (AEC) Sustainability Team will administer occupant surveys between 6-18 months after occupancy. The survey results will be provided to the project Commissioner; issues resulting from the survey responses will be addressed in conjunction with the Enhanced Commissioning efforts of the project.

### **Thermal Comfort Survey**

AEC will provide building occupants with an anonymous web-based survey based on the requirements of the LEED Reference Guide for Green Building Design and Construction and in accordance with ASHRAE Standard 55-2004 (with errata but without amendments). The survey will address areas of thermal comfort including temperature, airspeed, humidity, clothing, and activity. AEC and appropriate university personnel will review the results of the survey and identify any areas of concern. Please see the file named 'UM PostOccupancyThermalComfortSurvey.docx' for a copy of the survey instructions and questions.

### **Thermal Comfort Corrective Action Plan**

Upon reviewing the responses of the thermal comfort survey, the project Commissioner, in conjunction with the design and construction and facilities maintenance teams, will identify the cause of the discomfort and will decide on the appropriate actions for addressing the occupant concerns. The results of the survey will also be compared to the Basis of Design thermal comfort design criteria established for the project.

Examples of corrective action may include adjustments to thermal controls (temperature set-points, schedules, operating modes) and diffuser airflow adjustments. If corrective action is necessary, a follow-up survey will be conducted as well as continued monitoring to ensure the thermal comfort issues have been fully addressed.

### **Permanent Monitoring System**

A Direct Digital Control (DDC) system is included in the building to ensure that building performance meets the desired comfort criteria as determined by IEQc7.1 Thermal Comfort, Design. This system provides control and monitoring at both the room and building level. In turn, the DDC system is networked back to the University's Building Automation Services (BAS) department, which monitors DDC control points campus wide, and is staffed 24/7. Additional information can be found on the BAS website: <http://www.plantops.umich.edu/maintenance/shops/BAS/>. The DDC system has extensive capability to monitor room environmental performance. A typical space is served by a DDC controlled terminal unit, utilizing electronic sensors that measure room environmental conditions. These sensors are directly accessible by the DDC system for trend logging, point alarming, and troubleshooting purposes. This capability is used during commissioning as well as after occupancy to assure thermal comfort conditions are being maintained. Building environmental systems are similarly DDC controlled and monitored.