Indoor Environmental Quality + Workplace Environment
South Central College-Faribault
(SCC-F)

May 2016, Minneapolis, MN
Sustainable Post-Occupancy Evaluation Survey (SPOES)
B3 Guidelines

Caren S. Martin, PhD (contact: cmartin@umn.edu)
Denise A. Guerin, PhD
Martin & Guerin Design Research, LLC

Abimbola Asojo, PhD (aasojo@umn.edu)
Suyeon Bae, MS
College of Design
University of Minnesota

1.0 Overview

The purpose of this report is to examine the connection between sustainable design criteria used in the design of the South Central College-Faribault (SCC-F) facility and occupants' satisfaction with their work environments located in the facility. This report communicates responses from employees about the overall facility and their workplace (WP). As the SCC-F consists of one building that houses both classrooms and offices, a separate survey was conducted for classrooms and a corresponding report has been written that addresses students' responses related to the classroom (CR) environment. The facility was designed using the B3 Guidelines (formerly known as the Minnesota Sustainable Building Guidelines or MSBG), which were in effect at the time that the renovation and addition were funded. It was completed for occupancy in August 2014. The B3 Guidelines track specific state-funded, B3 buildings as a means of demonstrating real outcomes aimed at the conservation of energy resources, creation and maintenance of healthy environments, and occupants' satisfaction with their work environments. The Sustainable Post-Occupancy Evaluation Survey (SPOES) was developed to assess human outcomes in workplace, classroom, and residence hall settings in compliance with the B3 Guidelines project tracking requirements. This is a report of occupants' (hereafter called employees) responses from the survey conducted in late-March through early-April, 2016.

This SPOES report focuses on employees' satisfaction with the physical environment as related to 26 indoor environmental quality (IEQ) criteria such as lighting, thermal, and acoustic conditions in their primary workspaces, i.e., offices. Employees' satisfaction with the facility (site, building, and interior) and the effect of the facility's physical environment on their perceptions of their work performance and health also are included. Finally, a brief look at employees' commuting and physical activities within the building are reported. The report provides descriptive information about employees' perceptions of the IEQ of their work environments. In addition, this information serves the broader development of knowledge regarding the influence of IEQ on employees.

2.0 Method

SPOES consists of a self-administered, Internet-based, questionnaire submitted to and completed by employees. The SPOES questionnaire has been tested for **validity** (measures what it is intended to measure) and **reliability** (repeatability or replicability of findings). Employees rate their level of satisfaction on a **Likert-type scale** (measurement scale) from 1 (very dissatisfied) to 7 (very satisfied) with IEQ of the facility and their primary workspaces. They also rate the influence of their physical environment on their perception of their work performance and health on a scale from 1 (hinders) to 7 (enhances).

The report provides a descriptive summary of the results stated as a **mean** (average of all responses), **standard deviations** (SD) (how different scores are from each other and the mean), and **number of responses** (N) for each question analyzed. The mean for a 7-point scale is 4.00. Lower or higher means reflect stronger tendencies towards dissatisfaction/satisfaction and hinders/enhances. Means that are close to the center of the scale (4) are considered to be neither dissatisfied/hinders or satisfied/enhances.

When interpreting **mean** responses, the following labels were used:

- 1.00 - 3.50 dissatisfied (or hinders)
- 3.51 - 4.50 neither dissatisfied (or hinders) nor satisfied (or enhances)
- 4.51 - 7.00 satisfied (or enhances)

An IEQ Score is also calculated for employees' satisfaction with IEQ criteria in their primary workspaces. This is a statistical combination of all category-level (explained below) IEQ scores, which results in a single IEQ score for all respondents and is reported in an IEQ Scorecard.

2.1 Description of the Questionnaire

Employees first rate their level of satisfaction with the facility (site, building, and interior) and the influence of their physical environment on their perception of their work performance and health. Then they respond to questions about their satisfaction with their primary workspaces in relation to IEQ criteria from the B3 Guidelines. Additionally, employees' demographic, physical activity, and commuting practice data are collected to provide context for the study.

In the SPOES questionnaire, the 26 IEQ criteria listed below are evaluated. There are two levels of criteria, categories and attributes. As shown in the list, the 'overall' criteria are boldfaced and called 'categories' or 'category level' criteria. A category is broader or more general such as Overall View Conditions or Overall Indoor Air Quality. Some categories have 'attributes' or 'attribute level' criteria and provide greater detail about the category. For example, Overall Thermal Conditions is a category level question, and there are four attribute level questions related to thermal conditions such as adjustability, air velocity (draft), humidity, and temperature. Overall Acoustic Conditions is a category with attributes of employees' ability to hear desired sounds and their ability to limit undesired sounds. There are 12 category-level and 14 attribute level questions. Means are calculated and reported for all category and attribute-level criteria.

An IEQ Satisfaction Score is also calculated for employees' satisfaction with IEQ in their primary workspaces. This is a statistical combination of the 12 category-level criteria only and results in a single, mean IEQ Satisfaction Score for all employees' satisfaction with the physical conditions of their primary workspaces. Attribute-level criteria are not included in the IEQ Score because unequal weight would be given to criteria that have both category and attribute-level questions.

In the following list, **category (boldface)** criteria are listed in alphabetical order. If a category has attributes, they are listed with the category.

Overall Acoustic Quality
- Ability to hear desired sounds
- Ability to limit undesired sounds

Overall Appearance (aesthetics)

Overall Cleaning and Maintenance

Overall Daylighting Conditions
- Amount of daylighting
- Adjustability of daylighting

Overall Electric Lighting Conditions
- Amount of electric lighting
- Adjustability of electric lighting
- Adjustability of task lighting

Overall Furnishings
- Function of furnishings
- Adjustability of furnishings

Overall Indoor Air Quality

Overall Privacy

Overall Technology
- Access to electric outlets

Overall Thermal Conditions
- Adjustability of thermal conditions
- Air velocity (drafty/stagnant)
- Humidity (dry or moist)
- Temperature (hot or cold)

Overall Vibration and Movement

Overall View Conditions

2.2 Limitations

Employees' participation is voluntary, and responses are self-reported. As is true with all survey research, the responses indicate employees' perceptions. There were no physical measurements, e.g., temperature, humidity, or lighting levels of the environment taken. This study is limited to employees' perceptions.

3.0 Sample Description

3.1 Description of Building

The SCC-F facility is located at 1225 Third Street, Faribault, MN. The building (see Figure 1) is a three-story 108,265 square foot building that includes classrooms and offices. The SCC-F consists of renovated space that includes classrooms, shops and labs, offices, conference space, IT, and other support and storage areas; the addition consists of meeting room, library, open computer lab, and other support spaces. The focus of this report is the 10,582 square foot renovated office space, which includes private offices, enclosed shared offices, and workstations for employees. Only the overall facility and primary workspaces were included in this study. The building serves as the facility that offers technical and professional programs that prepare students for a variety of careers and houses the staff that provides administrative and academic support to students.

Figure 1. SCC-F (Photo courtesy of SCC-F)

3.2 Description of Respondents

This survey was administered to 48 employees with workspace in the facility during late-March through early-April 2016. The response rate to the questionnaire was approximately 58%. Of those responding, 39% were male and 61% were female. The mean age of respondents was 52 years, with a range from 33-66 years of age.

The SCC-F was completed and ready for operation in August, 2014. Since that time, 35% of the respondents reported that they worked at the SCC-F facility for more than 2 years, 54% have worked at the facility for 1-2 years, and 12% of the respondents spent less than one year at this site. Relating to

hours worked during a typical week at SCC-F, 46% of the employees reported they spend 40+ hours a week in the facility, 23% spend 30-40 hours a week at SCC-F, 4% spend 20-29 hours at SCC-F, and 27% spend less than 20 hours at the facility.

Relating to the time employees spend per week in their primary workspace, 32% of the employees reported they spend more than 75% of their weekly time in their primary workspace; 40% spend 51-75% of their time in their primary workspace; 20% spend 25-50% of their time in their primary workspace; and 8% spend less than 25% of their time in their primary workspace. These responses indicate the amount of time employees are exposed to IEQ conditions in their workplace environment.

SCC-F is a workplace with private offices; enclosed shared offices; workstations (cubicles) with low partitions, high partitions, and both low and high partitions serving as primary workspaces. Employees indicated that 35% of their primary workspaces were located within 15 feet of an exterior window and 65% of the employees were not within 15 feet of an exterior window.

4.0 Findings and Discussion

4.1 SCC-F Facility (Site, Building, and Interior): Overall Satisfaction, Work Performance, and Health

Employees responded to questions concerning the SCC-F facility (site, building, and interior) and their overall satisfaction with the facility, overall perceptions of their work performance in relation to the facility, and their overall perception of their health in relation to the facility. Table 1 shows the means and standard deviations of their responses as well as how the responses are interpreted. Figure 2 is a graph that shows the mean for each question, which is identified with a blue mark. The standard deviation is shown by the green/red, vertical bar with green representing satisfied (or enhanced) and red representing dissatisfaction (or hindered). Gray represents the 'neither/nor' range of responses. In cases where there were no dissatisfied responses, the bar may be all green or gray and green. This graph is simply a visual image of the findings from Table 1.

Table 1 SCC-F facility - overall satisfaction, work performance, and health

Overall	Mean	SD	N	Interpretation
Satisfaction	5.86	1.03	28	Satisfied
Work Performance	5.32	1.34	28	Enhanced
Health	4.93	1.28	28	Enhanced

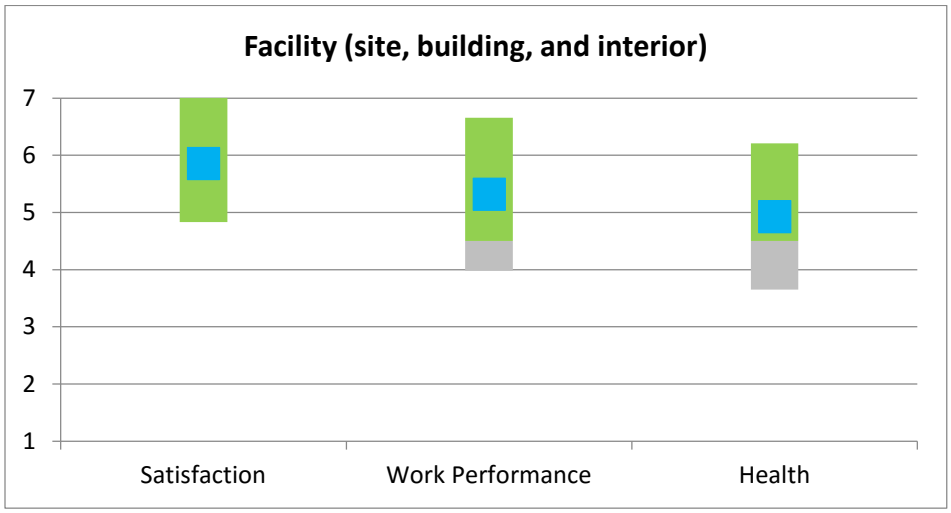

Figure 2. SCC-F facility - overall satisfaction, work performance, and health

Results indicate that employees were **satisfied** (**M = 5.86**) with the SCC-F physical environment of the facility (building, site, and interior) and reported that their overall work performance was **enhanced** (**M = 5.32**) by the facility. Employees reported that their overall health was **enhanced** (**M = 4.93**) by the facility.

4.2 Primary Workspace: Overall Satisfaction, Work Performance, and Health

Employees responded to questions concerning their overall satisfaction and overall perceptions of their work performance and health as related to their primary workspace (e.g., private office, workstation, or other primary workspace). Table 2 shows the means and standard deviations of their responses as well as how the responses are interpreted. Figure 3 is a visual image of the findings from Table 2; an explanation of the graph was given for Figure 2.

Table 2. SCC-F primary workspace – overall satisfaction, work performance and health

Overall	Mean	SD	N	Interpretation
Satisfaction	4.96	1.68	26	Satisfied
Work Performance	4.96	1.53	26	Enhanced
Health	4.92	1.14	26	Enhanced

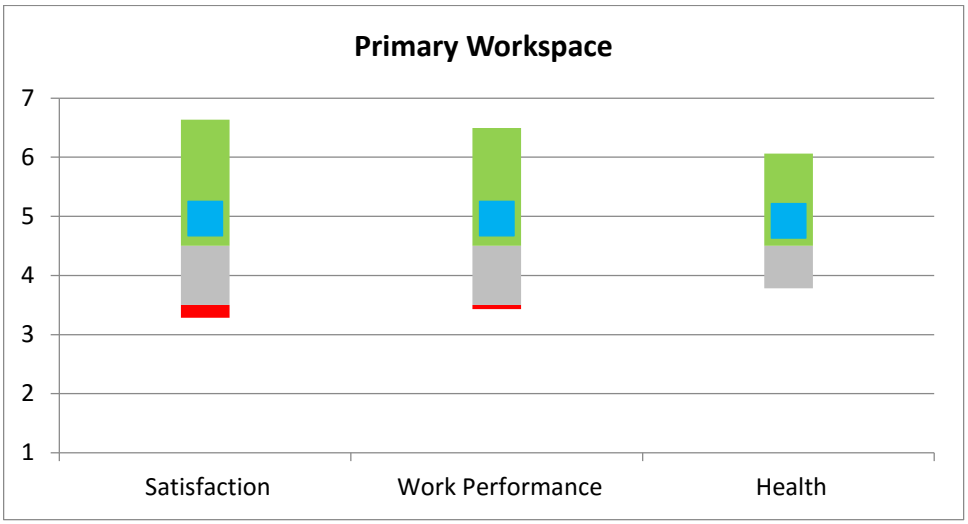

Figure 3. SCC-F primary workspace - overall satisfaction, work performance, and health

Results indicate that employees were **satisfied (M = 4.96**) with their primary workspace, their overall work performance was **enhanced (M = 4.96)** by their primary workspace, and their overall health was **enhanced (M = 4.92)** by their primary workspace.

4.3 Primary Workspace: Satisfaction with Indoor Environmental Quality (IEQ)

Employees responded to questions concerning their satisfaction with IEQ categories (thermal conditions, indoor air quality, acoustic conditions, etc.) related to their primary workspace (e.g., private office, workstation, or other primary workspace). Table 3 shows the means and standard deviations of their responses from highest to lowest mean, as well as how the responses are interpreted. Figure 4 is a visual image of the findings from Table 3; an explanation of the graph was given for Figure 2.

Table 3. SCC-F primary workspace - satisfaction with IEQ criteria

#	IEQ Criteria (1-26) (Category level criteria are bold face)	Mean	SD	N	Interpretation (D = Dissatisfied) (S = Satisfied)
1	**Overall appearance (aesthetics)**	**5.62**	**1.11**	**26**	**Satisfied**
2	Amount of electric light	5.46	1.12	26	Satisfied
3	**Overall vibration and movement**	**5.40**	**1.02**	**25**	**Satisfied**
4	**Overall electric lighting conditions**	**5.31**	**1.14**	**26**	**Satisfied**
5	**Overall cleaning and maintenance**	**5.31**	**1.64**	**26**	**Satisfied**
6	**Overall technology**	**5.27**	**1.77**	**26**	**Satisfied**
7	**Overall indoor air quality**	**5.23**	**1.31**	**26**	**Satisfied**
8	Function of furnishings	5.20	1.55	25	Satisfied
9	Humidity (dry or moist)	5.15	1.23	26	Satisfied
10	**Overall furnishings**	**5.15**	**1.68**	**26**	**Satisfied**
11	Air velocity (drafty or stagnant)	4.96	1.40	26	Satisfied
12	**Overall daylighting conditions**	**4.92**	**1.80**	**26**	**Satisfied**
13	Ability to hear desired sounds	4.81	1.54	26	Satisfied
14	Adjustability of task lighting	4.76	1.68	25	Satisfied
15	Adjustability of task lighting	4.73	1.68	26	Satisfied
16	Amount of daylighting	4.69	1.98	26	Satisfied
17	Adjustability of furnishings	4.69	1.66	26	Satisfied
18	Access to electric outlets	4.65	1.80	26	Satisfied
19	**Overall view conditions**	**4.62**	**2.10**	**26**	**Satisfied**
20	**Overall thermal conditions**	**4.38**	**1.73**	**26**	**Neither S or D**
21	Temperature (hot or cold)	4.38	1.62	26	Neither S or D
22	**Overall acoustic quality**	**4.38**	**1.88**	**26**	**Neither S or D**
23	Adjustability of daylighting	4.15	1.99	26	Neither S or D
24	**Overall privacy (sound and visual privacy)**	**4.08**	**1.52**	**26**	**Neither S or D**
25	Ability to limit undesired sounds	3.92	1.96	25	Neither S or D
26	Adjustability of thermal conditions	3.88	1.91	26	Neither S or D

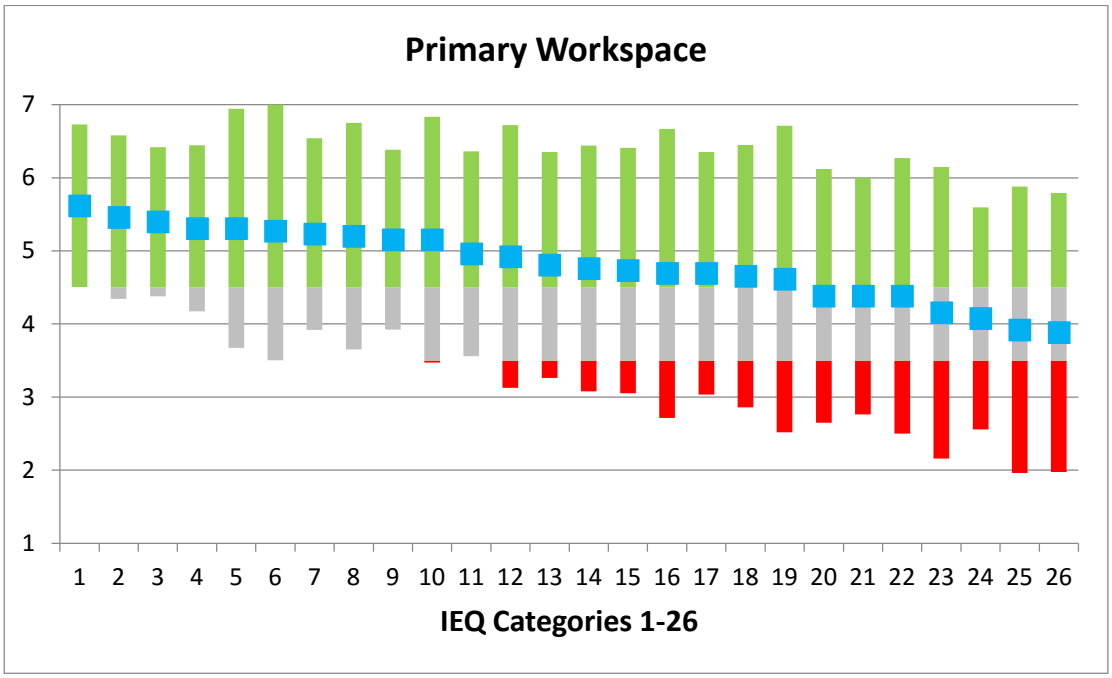

Figure 4. SCC-F primary workspace - satisfaction with IEQ criteria (IEQ 1-26 refer to Table 3)

Results indicate that employees were **satisfied** with 19 of the IEQ criteria in their primary workspaces, i.e., means at or above 4.50. Employees were **neither satisfied nor dissatisfied** with the remaining 7 IEQ criteria, ranging from a mean of 3.88 (adjustability of thermal conditions) to 4.38 (Overall thermal conditions). Those criteria in the 'neutral' satisfaction range should be reviewed and considered for change. Potential for change will be addressed in Section 6.2 Recommendations. Further explanation of these scores also can be found in Appendix A. Open-Ended Responses.

4.4 IEQ Satisfaction Scorecard

The IEQ Satisfaction Score is determined by calculating a mean of the 12 'Overall' category level IEQ criteria. At this time, criteria are weighted equally in this calculation as little evidence exists that provides rationale for weighting some criteria heavier than others. The IEQ mean is representative of a fair overall IEQ score and can serve as a benchmark of employees' satisfaction with the physical environment of their primary workspace. As shown in Figure 5, the **IEQ Satisfaction Score** for SCC-F is **4.97**, which falls at the moderately satisfied range. The large number of criteria with scores above the mean contribute to this moderately high IEQ Score**.**

Figure 5. SCC-F primary workspace - IEQ Satisfaction Score

As shown in Table 3, satisfaction with the Overall appearance (aesthetics), Overall vibration and movement, Overall electric lighting conditions, Overall cleaning and maintenance, Overall technology, and Overall indoor air quality were the categories with the highest satisfaction means (5.23 or higher) and pulled the IEQ Satisfaction Score in a positive direction. However, three mean scores below 4.5 out of 12 category-level criteria pulled the IEQ Score down. Please note that the IEQ Satisfaction Score only uses the category level criteria (those labeled 'Overall'; see section 2.1, paragraph 3 for explanation).

5.0 Physical Activity Engagement and Commuting Practices

In the final section of the survey, employees responded to questions regarding their overall physical activity while at SCC-F (site, building, and interior) and their commuting practices.

5.1 Physical Activity Engagement

Providing employees with opportunities for alternative paths of travel around the workplace, e.g., taking stairs as opposed to the elevator, provides opportunities to engage in additional types of physical activities. Engaging in physical travel throughout the work environment can be associated with healthier lifestyles.

Table 4. Overall physical activity (walking, stair use, etc.) affected by the SCC-F facility

SCC-F facility (site, building, and interior)	Mean	SD	N	Interpretation
Overall physical activity (walking, stair use, etc.)	5.56	1.12	25	Enhanced

Results indicate that employees felt that SCC-F **enhanced** (**M = 5.56**) their physical activities (walking, stair use, etc.).

5.2 Commuting Practices

SCC-F is located in the southwest quadrant of the city of Faribault, MN, less than one mile east of I-35W and south of Hwy 60. The building has parking available for employees.

Table 5 provides results on employees' primary mode of transportation; Table 6 summarizes commuting distances between home and the SCC-F facility; and Table 7 summarizes employees' ability to commute using alternative choices (walk, public transit, bike, van, or carpool, etc.). These results, although not related to IEQ, do offer insight into employees' commuting behaviors and opinions. These data can provide important information about commuting practices that can reduce transportation energy consumption.

Table 5. Commuting Practices – SCC-F Primary mode of transportation

Primary Mode of Transportation (N=26)	**Drive Alone (or w/children <16)**	**Van or Carpool**	**Telecommute**
Commuting to SCC-F	88%	8%	4%

Related to primary modes of transportation, 88% of employees drive alone (or with children under 16), 8% carpool or vanpool with others, and 4% telecommute.

Table 6. Commuting Practices – SCC-F Commuting distance traveled

Miles Traveled (N=26)	**0-5 miles**	**6-15 miles**	**16-30 miles**	**31-45 miles**	**46-60 miles**	**61+ miles**
Home-to-SCC-F (One-way)	35%	12%	12%	23%	12%	8%

Results indicate that 35% of employees commuted 0-5 miles one-way between home and the SCC-F, followed by 12% who commute 6-15 miles, 12% who commute 16-30 miles, 23% commute between 31-45 miles, 12% who commute 46-60 miles, and 8% who commute 61+- miles to the SCC-F facility. Note that results do not add up to 100% due to rounding error. All of these are one-way miles.

Table 7. Commuting practices – SCC-F location and alternative commuting behaviors

Alternative Commuting	**Mean**	**SD**	**N**
Ability to commute in alternative ways	4.17	2.2	24

Results indicate that location of the SCC-F **neither hinders nor enhances** (M = 4.17) employees' ability to commute to work in alternative ways, e.g., walk, bicycle, public transit, van or carpool, etc.

6.0 Conclusions

6.1 Summary

A post-occupancy evaluation was conducted of employees of SCC-F at approximately 19 months after it was first occupied. This SCC-F facility is used as the Faribault campus classroom and administrative building. This survey reports responses from employees and their satisfaction with the physical environment of the facility and their primary workspace. Results indicate that 68% of employees spend more than 30 hours per week in the SCC-F facility, and 72% of employees spend more than 50% of their time at SCC-F in their primary work space.

The survey included questions related to employees' satisfaction with the facility (site, building, and interior) and influence of the facility on their work performance and health. Employees were **satisfied**

with the facility (**M = 5.86)**; they found the facility **enhanced** their work performance (**M = 5.32)** and **enhanced** their health (**M = 4.93**). In addition, similar results were reported when employees were asked these same questions about their primary workspaces (private office, shared office, cubicles, etc.). They reported **satisfaction** (**M = 4.96**) with their primary workspaces, that their work performance was **enhanced** (**M = 4.96**), and their health was **enhanced** (**M = 4.92)** by their primary workspace. As the range of scores was from 1-7, scores showed a moderate level of satisfaction and enhancement.

Most of the survey questions related to employees' satisfaction with the IEQ criteria in their primary workspaces (private office, cubicles, etc.). Employees' responses showed they were **satisfied** with the 19 of the 26 IEQ criteria. The mean satisfaction scores ranged from **4.62** (Overall view conditions) to **5.62** (Overall appearance, aesthetics). Again, this shows a moderately positive level of **satisfaction**. Employees responded **neither dissatisfied nor satisfied** to 7 IEQ criteria. The mean satisfaction scores ranged from **3.38** (adjustability of thermal conditions) to **4.38** (Overall thermal conditions).

From employees' responses, an IEQ Score was developed and shows respondents' satisfaction with the IEQ of all category level criteria. For SCC-F, the IEQ Satisfaction Score was **4.97**. This score reflects the influence of the moderate satisfaction level with 9 of the 12 categories. Finally, employees reported that SCC-F **enhances (5.56)** their physical activity, which is one of the sustainable design criteria that influences occupant behavior.

It seems obvious that employees' satisfaction can be improved by addressing the categories that had 'neither dissatisfied nor satisfied' scores. However, the rest of the criteria would benefit from some attention as well. The following recommendations can help address change in these criteria to further improve employees' satisfaction. Exploring these areas in more detail and making adjustments may increase overall satisfaction at the primary workspace. It must be noted that the expense of building and operating a facility is second only to employee-related expenses over the life of the building. Therefore, maintaining or improving employees' satisfaction is a sound investment, which, in turn affects their performance and their health.

This study investigated employees' satisfaction with the facility and primary workspaces. IEQ satisfaction is individual, but the results of the survey show a central tendency of moderate satisfaction with the facility and most of the IEQ categories. The results can be used as a diagnostic tool to aid in improving IEQ conditions for employees and to set the benchmarks from which improvement can be measured in the future.

6.2 Recommendations

Several IEQ criteria satisfaction scores are in the positive direction, however, improvement on the 'neutral' criteria may be possible. For IEQ categories that can be physically measured (e.g., thermal, acoustic, and lighting), it is recommended that these measurements be taken in the primary workspaces. Specific recommendations for the most common areas of occupants' concern follow:

Acoustic Conditions

- Identify acoustic criteria for overall requirements.
- Determine if any task areas differ now from their original spatial layout/use (i.e., collaborative work spaces now located adjacent to focused work areas, individual workstations).

- Develop specialized acoustical performance requirements to support functional programming employees' tasks (e.g., sources of recurrent noise that need to be controlled, special user populations that may have distinct auditory performance limitations, or multiple uses of building spaces that may have different acoustic criteria). Identify and apply appropriate acoustics modeling software for the project.
- Measure acoustic performance onsite with full building systems (heating, ventilation, and air conditioning) running.
- Identify employees' privacy concerns via focus groups and/or log complaints relative to acoustical conditions for further evaluation.
- Consider employees' tasks within shared spaces to determine if spatial layout changes can be made for increased acoustic control.

Lighting Conditions

- Identify employees' lighting performance criteria that are to be met to achieve goals by conducting onsite measurements of existing illumination and compare them to standards for employees' tasks as identified by the Illuminating Engineering Society (IES).
- Determine if any task areas differ now from original intent to be sure illumination level and quality of lighting are not impeded by physical changes to the space (i.e., walls, ceilings, furnishings, fixtures, or equipment).
- Develop additional quality lighting criteria as needed for special facility (e.g., influence of daylight quality or quantity) or employee (e.g., age, task duration) issues.
- Log complaints related to lighting conditions for further evaluation.
- Identify poor lighting conditions in the workspace caused by a lack of control over daylighting, which can cause glare and eyestrain.

Personal Adjustability

- Determine what adjustability issues arise with temperature, lighting, or furnishings via a focus group.
- Identify personal, individual problem areas and relate them to other IEQ issues via a log of complaints relative to adjustability.
- Provide education to employees about any existing/achievable adjustment options, e.g., furnishings, air diffusers, lighting, temperature control, etc.

Privacy Conditions

- Identify employees' privacy concerns via focus groups or log complaints relative to privacy to determine if visual or audio privacy is most affected.
- Determine if any task areas or responsibilities differ from original intent and develop alternatives or modifications.
- Consider adding noise masking equipment and/or visual screening depending on the nature of the complaints.
- Document and compare acoustic privacy problem areas with acoustic measurements to pinpoint specific problem areas.

Thermal Conditions

- Measure thermal performance conditions on site.
- Log complaints related to thermal conditions for further evaluation.

- Determine special thermal comfort requirements or problems that may be encountered in the building due to physicality of work activities, duration of sitting, or design/layout considerations. Focus groups can be useful in identifying problem locations.
- Determine if any employees' task areas differ now from original layout to determine if air flow is meeting systems design intent.
- Review conditions that affect thermal comfort using ASHRAE Standard 55-2004 or *Human Factors Design Handbook* (see B3 Guidelines).

Appendix A. Open-Ended Responses

Employees had the opportunity to raise specific concerns on the overall facility and their primary workspaces. Important information can be gleaned from the open-ended survey responses. SCC-F employees raised specific concerns about the following themes: acoustics, cleaning and maintenance, daylighting, electrical outlets, privacy, thermal conditions, ventilation, and wayfinding. Though these qualitative responses overall appear as if the employees are dissatisfied; it does not mean they represent the overall sentiment from employees. However, the comments do give insight into specific issues that should be addressed by building management. The comments from the employees are provided below. A few comments were provided that refer to classroom space issues as some of these employees also work in classrooms. They are noted at the end of this segment so that they too can be considered.

Overall Positive/Negative

- It's a privilege to work on such a beautiful campus.
- Nice place to work.
- Great environment to work in.
- The campus is very nice but my work environment is like working in a closet.

Acoustics

- Can't hear intercom announcements such as during a lockdown-C106.

Cleaning and Maintenance

- The maintenance staff has always taken a high level of pride in the appearance of the facility.
- I hate the electric brush they use to clean the sidewalks in winter months. The brush sheds bristles, and they littler and pollute the college premises. I was happy to see a custodian outside picking up the bristles, but that is another example of us overworking the custodians and tying them up with mundane tasks. Also, the custodial team needs a scissor lift to be able to access the highest points of the college safely. Sorry to go on a rant about the janitors, but those guys work hard and are undervalued and ill-equipped. We should empower them to be able to take better care of the physical environment at SCC.
- The custodial team is understaffed, so I do not blame them for not being able to keep things as clean as I would like. I have asthma and vacuuming to keep dust down is important to me, unfortunately sometimes the carpets go a week or two without being cleaned. The janitorial staff needs at least 2 more full-time workers or 6-8 student workers/work study students. I don't understand for the life of me why there isn't an operations team composed of students that help out with cleaning windows, vacuuming, cleaning the terrazzo floors, and setting up the furniture in the main conference center. A group of 6-8 students would be needed in an operations team in order to be fully staffed throughout the day since work schedules would have to work around student schedules. At my own college our OPS team kept the place tidy, comfortable, and pleasant for students, staff, and faculty. Their efforts cost the college next to nothing because most of the OPS team was federal work-study eligible.

Daylighting

- Lack of windows is a bit depressing.

Electric Outlets

- Electrical outlets not always well thought out for spaces.

Privacy

- My office space is shared, which makes privacy and concentration a real issue.
- My cubicle is very small and cramped. I can hear every conversation that goes on. At times I will work from home so I can concentrate on my work.
- The respect of student - instructor privacy needs to be enhanced.
- Shared faculty office spaces are problematic because there is no physical/noise separation between work stations. Thus, when other instructors or students are present and talking, it makes it very difficult to concentrate. And there is no privacy, which is probably a real concern given today's data privacy laws.
- Old door does not keep out noise from the large student space it is adjacent to.

Thermal

- My office space is sweltering hot at all times with no way to control the temperature.

Ventilation

- Noisy fans throughout; too much air flow; usually cold.
- Very cold, noisy blowing fans for heat.

Wayfinding

- Would like to have more way finding and computer monitors.

Miscellaneous Comments Related to Classroom Space

- The motion controlled lighting does not come on until the first person has gone 15 to 20 feet into the classroom. When the room is dark, this is dangerous.
- In computer lab C112, there is clanking noises coming from heating system; students test in there and it is distracting.
- Some classrooms are really warm, even students complain about it.

Appendix B. Glossary

Descriptive statistics
Statistics used to summarize large sets of data (i.e., means, frequencies, medians). Descriptive statistics describe only the sample under consideration and are not intended to infer results to the larger population.

Frequency
A descriptive statistic that provides information about how many of a particular response or measurement is observed.

Likert-type scale
A measurement technique, employed in questionnaires and interviews, that utilizes a range of standardized response categories such as strongly agree, agree, etc.

Mean
The average score of a set of data calculated by adding all scores together, then dividing by the number of scores.

N
The number of subjects or participants responding to the questions, or a single question, in the study.

Reliability
The repeatability or replicability of findings; the same results are produced each time. Instruments and procedures should produce the same results when applied to similar people in similar situations, or on a second occasion.

Standard deviation
A statistic used to measure the variability of a group of scores (how different scores are from each other and the mean). For example, if the range of scores is 1-7 and the mean (average) is 5.0 with a standard deviation of 1.0, then the scores are closely clustered around the mean, i.e., there is one unit of variation among all scores. If the mean was 5.0 and the SD was 3.0, there is a broader range of variation among the scores…a smaller SD means the scores are similar and the mean score is likely to be more accurate and more useful (this is better!).

Validity
The extent to which an instrument or procedure measures what it is intended to measure (internal validity). The generalizability of results to another population (external validity).