

MINNESOTA



**POST-OCCUPANCY
EVALUATION**

**Indoor Environment Quality + Workplace Environment
Normandale Community College,
Normandale Partnership Center (NPC)
Bloomington, MN
Report 2**

**February 2015, Minneapolis, MN
Sustainable Post-Occupancy Evaluation Survey (SPOES)
B3 Guidelines**

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1.0 Overview

The purpose of this report is to examine the connection between sustainable design criteria used in the design of the Normandale Partnership Center (NPC) facility and occupants' satisfaction with their work environments located in the NPC. The NPC facility was designed using the B3 Guidelines (formerly known as the Minnesota Sustainability Guidelines or MSBG) and completed for occupancy in 2011. 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 at 48 months post-occupancy. The survey was conducted in April, 2015 and is the second of two required survey events for this building. (Report 1 can be found at [Http://www.bemn.org/poe](http://www.bemn.org/poe))

This SPOES report focuses on employees' satisfaction with the physical environment as related to 25 indoor environment 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). There were no physical measurements taken of environmental conditions such as temperature or acoustic level. This study is limited to employees' perceptions.

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

An IEQ Score is also calculated for employees' satisfaction with IEQ in their primary workspaces. This is a

statistical combination of IEQ category-level scores, which results in a single IEQ score for all employees 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' physical activities and commuting practices are investigated.

In the SPOES questionnaire, the 25 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 13 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

- Adjustability of daylighting
- Amount of daylighting

Overall Electric Lighting Conditions

- Adjustability of electric lighting
- Adjustability of task lighting
- Amount of electric lighting

Overall Furnishings

- Adjustability of furnishings
- Function of furnishings

Overall Indoor Air Quality

Overall Privacy

Overall Technology

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.

3.0 Sample Description

3.1 Description of Building

The NPC facility resides on the campus of Normandale Community College, a part of the Minnesota State Colleges and Universities system, and is located at 9700 France Avenue South in Bloomington, MN. There are currently over 14,500 students in attendance at Normandale. The NPC facility (see Figure 1) is comprised of 27 classrooms, faculty offices, and common student areas. These areas are distributed across three floors and 76,000 square feet. The facility provides offices for faculty and staff who work in business, accounting, hospitality, continuing education, and customized training.



Figure 1 Normandale Partnership Center Building (Photo credit: <https://normandale.ims.mnscu.edu>)

3.2 Description of Respondents

The NPC had approximately 85 employees with assigned workspace in the facility during the spring semester period and administration of the survey event. The response rate to the questionnaire was approximately 19%. Of those responding, 33% were male and 67% were female. The mean age of respondents was slightly over 51 years, with a range of 31 to 65+ years.

The NPC facility building addition was completed in 2011. Since that time, 13% of the respondents reported that they have worked at the NPC for more than 3 years, 13% have been there 2-3 years, 60% have been there for 1-2 years, and 13% of the respondents have spent less than one year at this site. Relating to hours worked during a typical week at NPC, 40% of the employees reported they spend 40+ hours a week in the facility; 20% spend 30-40 hours a week at NPC; and 40% spend less than 20 hours in the NPC facility. Relating to the percentage of time employees spend per week in their primary workspace, 40% of the employees reported they spend more than 75% of their time per week in their

primary workspace; 20% spend 51-75% of their time per week in their primary workspace; 27% spend 25-50% of their time per week in their primary workspace; and 13% spend less than 25% of their time per week in their primary workspace. (Numbers may not add up to 100 due to rounding.)

NPC is an educational facility with offices, workstations (cubicles), and a computer laboratory serving as primary workspaces. Results indicate 62% of the employees have or share private offices with other people, 31% work in a cubicle (enclosed by partitions), and 6% work in a computer laboratory setting. Employees also indicated that 73% of their primary workspaces are located within 15 feet of an exterior window, 20% of employees are not within 15 feet of an exterior window, and 7% of employees are unsure of the distance from their primary workspace to an exterior window.

4.0 Findings and Discussion

4.1 NPC Facility (Site, Building, and Interior): Overall Satisfaction, Work Performance, and Health

Employees responded to questions concerning the NPC 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 with a blue mark. The standard deviation is shown by the vertical bar that runs from 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 will be all grey and green. This graph is simply a visual image of the findings from Table 1.

Table 1. NPC facility - overall satisfaction, work performance, and health

Facility (Site, Building, and Interior)	Mean (1-7)	SD	N	Interpretation
Overall Satisfaction	6.13	1.02	16	Satisfied
Overall Work Performance	5.69	1.49	16	Enhances
Overall Health	5.75	1.13	16	Enhances

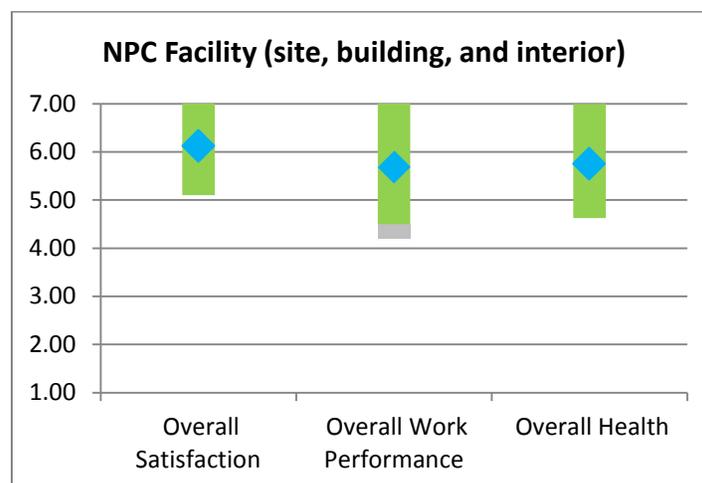


Figure 1. NPC facility - overall satisfaction, work performance, and health

Results indicate that employees were **satisfied (M = 6.13)** with the NPC facility (building, site, and interior) and reported that their overall work performance was **enhanced (M = 5.69)** by the facility. Employees reported that their overall health was **enhanced (M = 5.75)** 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.

Table 2. Primary workspace – overall satisfaction, work performance and health

Primary Workspace	Mean (1-7)	SD	N	Interpretation
Overall Satisfaction	5.56	1.63	16	Satisfied
Overall Work Performance	5.25	1.61	16	Enhances
Overall Health	5.25	1.57	16	Enhances

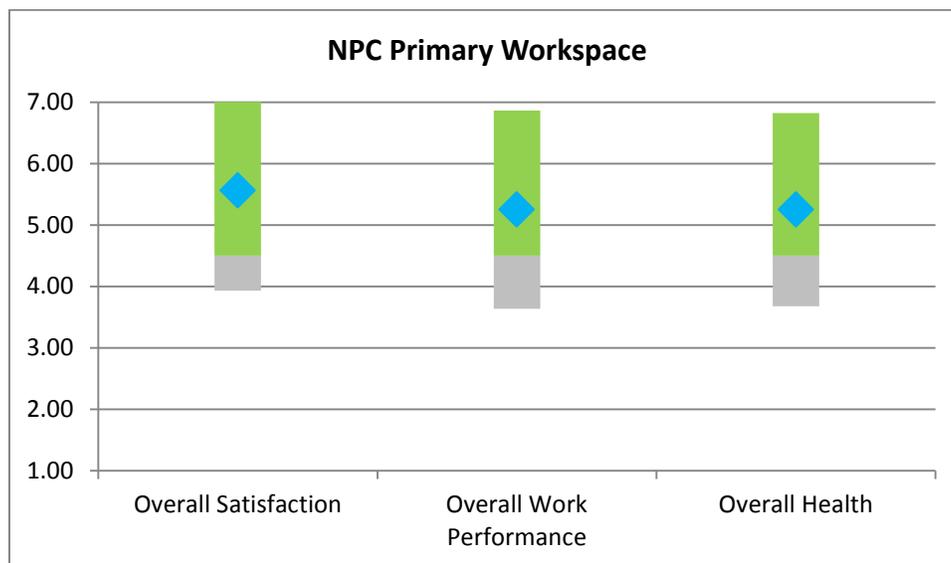


Figure 2. Primary workspace - overall satisfaction, work performance, and health

Results indicate that employees were **satisfied (M = 5.56)** with their primary workspace, their overall work performance was **enhanced (M = 5.25)** by their primary workspace, and their overall health was **enhanced (M = 5.25)** by their primary workspace.

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

Employees responded to questions concerning their satisfaction with IEQ criteria (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 as well as how the responses are interpreted. Figure 4 is a visual image of the findings from Table 3.

Table 3. Primary workspace - satisfaction with IEQ conditions

#	IEQ Criteria (1-25) (Category level criteria are bold face)	Mean (1-7)	SD	N	Interpretation (D = Dissatisfied) (S = Satisfied)
1	Overall furnishings	6.19	0.91	16	Satisfied
2	Overall appearance (aesthetics)	6.07	1.22	15	Satisfied
3	Amount of daylighting	6.06	1.29	16	Satisfied
4	Overall daylighting conditions	6.00	1.26	16	Satisfied
5	Ability to hear desired sounds	5.94	1.06	16	Satisfied
6	Air velocity (drafty or stagnant)	5.81	1.11	16	Satisfied
7	Overall cleaning and maintenance	5.75	1.29	16	Satisfied
8	Overall view conditions	5.75	1.88	16	Satisfied
9	Humidity (dry or moist)	5.69	1.40	16	Satisfied
10	Overall indoor air quality	5.63	1.31	16	Satisfied
11	Overall vibration and movement	5.56	1.55	16	Satisfied
12	Function of furnishings	5.56	1.63	16	Satisfied
13	Overall privacy (sound and visual privacy)	5.50	1.67	16	Satisfied
14	Overall thermal conditions	5.44	1.71	16	Satisfied
15	Amount of electric light	5.38	1.93	16	Satisfied
16	Adjustability of daylighting	5.31	2.12	16	Satisfied
17	Adjustability of furnishings	5.25	1.73	16	Satisfied
18	Overall acoustic quality	5.25	1.73	16	Satisfied
19	Overall electric lighting conditions	5.06	1.88	16	Satisfied
20	Temperature (hot or cold)	5.06	1.91	16	Satisfied
21	Overall technology	4.94	1.73	16	Satisfied
22	Adjustability of task lighting	4.88	2.16	16	Satisfied
23	Adjustability of thermal conditions	4.75	2.11	16	Satisfied
24	Ability to limit undesired sounds	4.73	1.75	15	Satisfied
25	Adjustability of the electric lighting	4.69	2.12	16	Satisfied

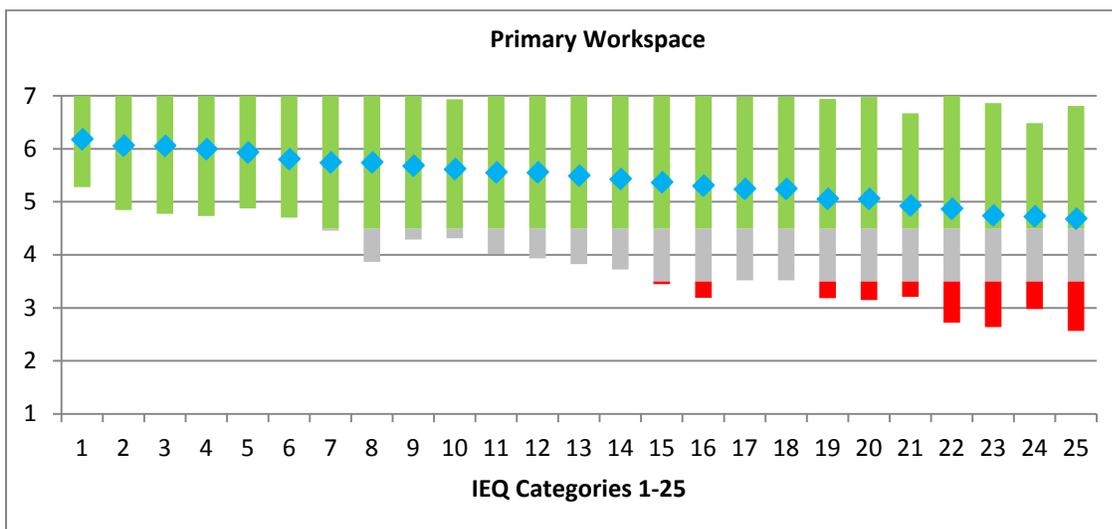


Figure 3. Primary workspace - satisfaction with IEQ categories (IEQ 1-25 are listed in Table 3 above)

Results indicate that employees were satisfied with all 25 of the IEQ criteria in their primary workspaces, i.e., means at or above 4.50. 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 all overall category level IEQ criteria. At this time, all variables are weighted equally in this calculation as little evidence exists that provides rationale for weighting some variables 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 NPC is **5.59**.



Figure 4. Primary Workspace - IEQ Satisfaction Score

Overall, employees showed a positive, moderately high level of satisfaction with IEQ as indicated by the mean score **5.59**. As shown in Table 3, satisfaction with **Overall furnishings**, **Overall appearance**, and **Overall daylighting conditions** were the IEQ criteria with the highest satisfaction and pulled the IEQ Satisfaction Score in a positive direction. However, lower levels of satisfaction with **Overall acoustic quality**, **Overall electric lighting conditions**, and **Overall technology** pulled the IEQ Score down. These issues can be addressed by building management to increase employees' satisfaction. Please note that the IEQ Satisfaction Score only uses the category level criteria (those labeled 'Overall'; see section 2.1, paragraph 3 for explanation). These will be noted in Section 6.2 Recommendations.

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 NPC (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 NPC facility

NPC facility (site, building, and interior)	Mean (1-7)	SD	N	Interpretation
Overall physical activity (walking, stair use, etc.)	6.0	.89	16	Enhances

Results indicate that employees felt that NPC **enhanced (M = 6.0)** their physical activities (walking, stair use, etc.). Further, of the 16 respondents to this question, 94% said they were **satisfied** with the facility's influence on their overall physical activity, and 6% said they were **neither dissatisfied nor satisfied**.

5.2 Commuting Practices

NPC is a facility within Normandale Community College located on 98th and France Avenue South in Bloomington, MN. The institution resides on a 90-acre wooded lot 1.5 miles south of a major highway that runs through the Minneapolis/St. Paul metro area. The campus is convenient to public transportation and bicycle trails.

Table 5 provides results on employees' primary mode of transportation; Table 6 summarizes commuting distances between home and the NPC 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 the Normandale Community College 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 – NPC Primary mode of transportation

Primary mode of transportation (Home to NPC)	Drive alone (or with children < 16)	Carpool or vanpool	Public transit	Bicycle	Walk
Employee commuting practices (%)	100 %	0%	0%	0%	0%

Related to primary modes of transportation, 100% of employees drive alone (or with children under 16). There were no responses for any other commuting practice or combination of commuting modes.

Table 6. Commuting Practices – NPC Commuting distance traveled

Miles traveled (one way) home to NPC	0-5 miles	6-15 miles	16-30 miles	31-45 miles	46 + miles
Employees commuting distance (%)	6%	31%	38%	6%	19%

Results indicate that 6% of employees commuted 0-5 miles one-way between home and the NPC, followed by 31% who commute 6-15 miles, 38% commute between 16-30 miles, 6% commute between 31-45 miles, and 19% commute over 45+ miles. All of these are one-way miles.

Table 7. Commuting practices – NPC location and alternative commuting behaviors

Opportunities for alternative commuting	Mean (1-7)	SD	N	Interpretation
Employees commuting practices	4.00	1.90	16	Neither Hinders or Enhances

Results indicate that the location of the NPC facility **neither hindered nor enhanced (M = 4.0)** employees' ability to commute to work in alternative ways, e.g., walk, bicycle, public transit, van or

carpool, etc. Further, of the 16 respondents to this set of questions, 25% said the location hindered their commuting options, 50% were **neither hindered nor enhanced** by the location of NPC, and 25% indicated that the location **enhanced** their ability to commute in alternative ways.

6.0 Conclusions

6.1 Summary

A post-occupancy evaluation was conducted of employees of NPC at approximately four years after it was first occupied. Nearly 19% of the employees responded to the survey.

The survey included questions related to employees' overall satisfaction with the facility (site, building, and interior) and influence of the facility on their overall work performance and health. Employees were **satisfied** with the facility (**M = 6.13**); they found the facility **enhances** their overall work performance (**M = 5.69**) and **enhances** their overall health (**M = 5.75**). Slightly lower results were reported when employees were asked these same questions about their primary workspaces (private office, shared office, laboratory, etc.). They reported overall **satisfaction** (**M = 5.56**) with their primary workspaces and that their overall work performance (**M = 5.25**) and their overall health was **enhanced** (**M = 5.25**) by their primary workspaces. As the range of scores was from 1-7, scores that showed satisfaction are in a moderately high to high range of scores for the NPC facility, and moderately high scores for the primary workspace.

Most of the survey questions related to employees' satisfaction with the IEQ criteria in their primary workspaces (private office, laboratory, etc.). Employees' responses showed they were **satisfied** with the all IEQ categories and attribute level criteria. The mean satisfaction scores ranged from **4.69** (Adjustability of the electric lighting) to **6.19** (Overall furnishings).

From employees' responses, an IEQ Score was developed and shows their satisfaction with the IEQ of all category level criteria. For NPC, the IEQ Satisfaction Score was **5.59**. This score reflects a moderately high satisfaction level with all categories. Finally, employees reported that NPC **enhances** their physical activity, which is one of the sustainable design criteria that influences occupant behavior.

6.2 Recommendations

The satisfaction scores are certainly in the positive direction, however, improvement 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, air conditioning; HVAC) 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 quantity and quality 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 if 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 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).

It may seem that no adjustments need be made to the IEQ criteria in the NPC facility or in the primary workspaces. However, continuous improvement will see benefits in employees' satisfaction. It is reasonable to begin addressing some of these IEQ 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 employee expense is second only to the cost of the actual facility in most business operations. It is a good investment to improve employees' satisfaction, 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 satisfaction with the facility and 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.

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 responses. NPC employees raised few specific concerns, and there were several positive comments as well. Following are qualitative responses to the criteria. Generally, the comments are shown as written.

Overall Positive

- The best work space/environment I've ever worked in spanning 40 years of work.
- The building is awesome. The woodwork on the walls makes a warm and inviting atmosphere. The window wall is gorgeous and the layout is very conducive to students gathering and collaborating. Well done.
- It is a beautiful space. This is a very attractive place for our corporate visitors.

Acoustical Conditions

- There are often random structure noises that can be distracting to classes or meetings taking place.

Electrical Lighting

- The lighting is unhealthy. It is sharp, white and cold. Softer yellow light would be great. And it is always cold I run a heater year round. And have brought in softer lighting.

Furnishings

- I wish the use of stand-up or sit-down stations would have been used in workspaces where a consistently stationary workspace is maintained.

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 are 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).