

PCC ROCK CREEK POST OCCUPANCY EVALUATIONS

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ABSTRACT

The objective of this research is to determine whether the new additions to Building 5 and Building 7 of Portland Community College at Rock Creek Campus fulfill the requirements for the LEED IEQ 7.2: Thermal Comfort-Verification credit for LEEDv2009.

Occupants of the new additions will take an anonymous survey regarding their thermal comfort and other aspects of the new additions via SurveyMonkey.

If the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building, a plan for corrective action must be developed to fulfill the requirements of the credit. The results from SurveyMonkey show that 87% and 79% of occupants were satisfied with the thermal comfort in the new additions to Building 5 and Building 7 respectively.

According to initial findings, a plan for corrective action must be developed for Building 7 to fulfill the requirements agreed to when the credit was awarded. However, more results should be gathered before making any valid conclusions. The survey could have reached a much broader audience if it was distributed on more days with a larger variety in distribution times.

METHODOLOGY

We worked with Opsi Architecture to develop survey questions. A pool of survey questions was created from:

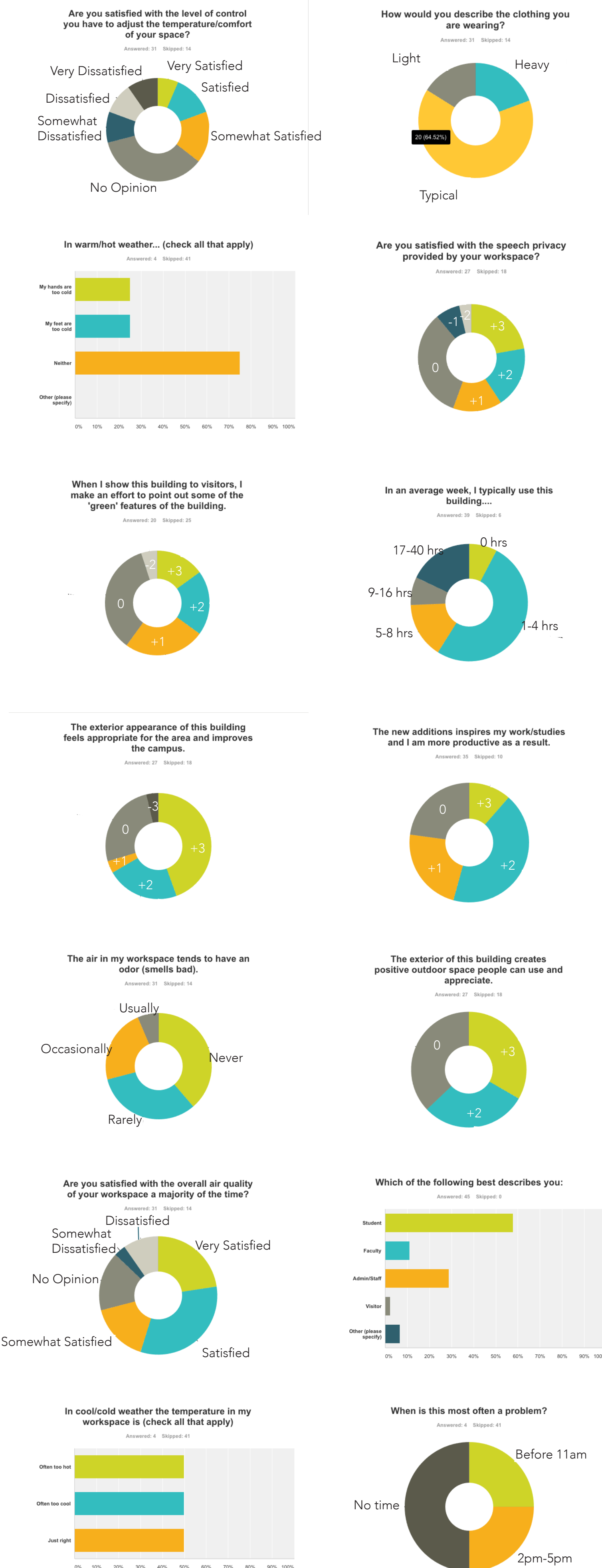
- Modifying previous survey questions Opsi developed.
- The Center for the Built Environment (CBE) sample surveys for Occupant Indoor Environmental Quality (IEQ) were copied and modified, if needed.

As a side project, an Instagram contest was developed. Instagram.com is a social media website in which people may upload, comment on, and share photos and videos. We used this platform to allow the occupants of the new addition to upload photos of parts of the new addition they like or believe needs improvements. This will also allow Opsi Architecture to further understand design aspects that worked or did not work. A gift card is given to a random participant as an incentive.

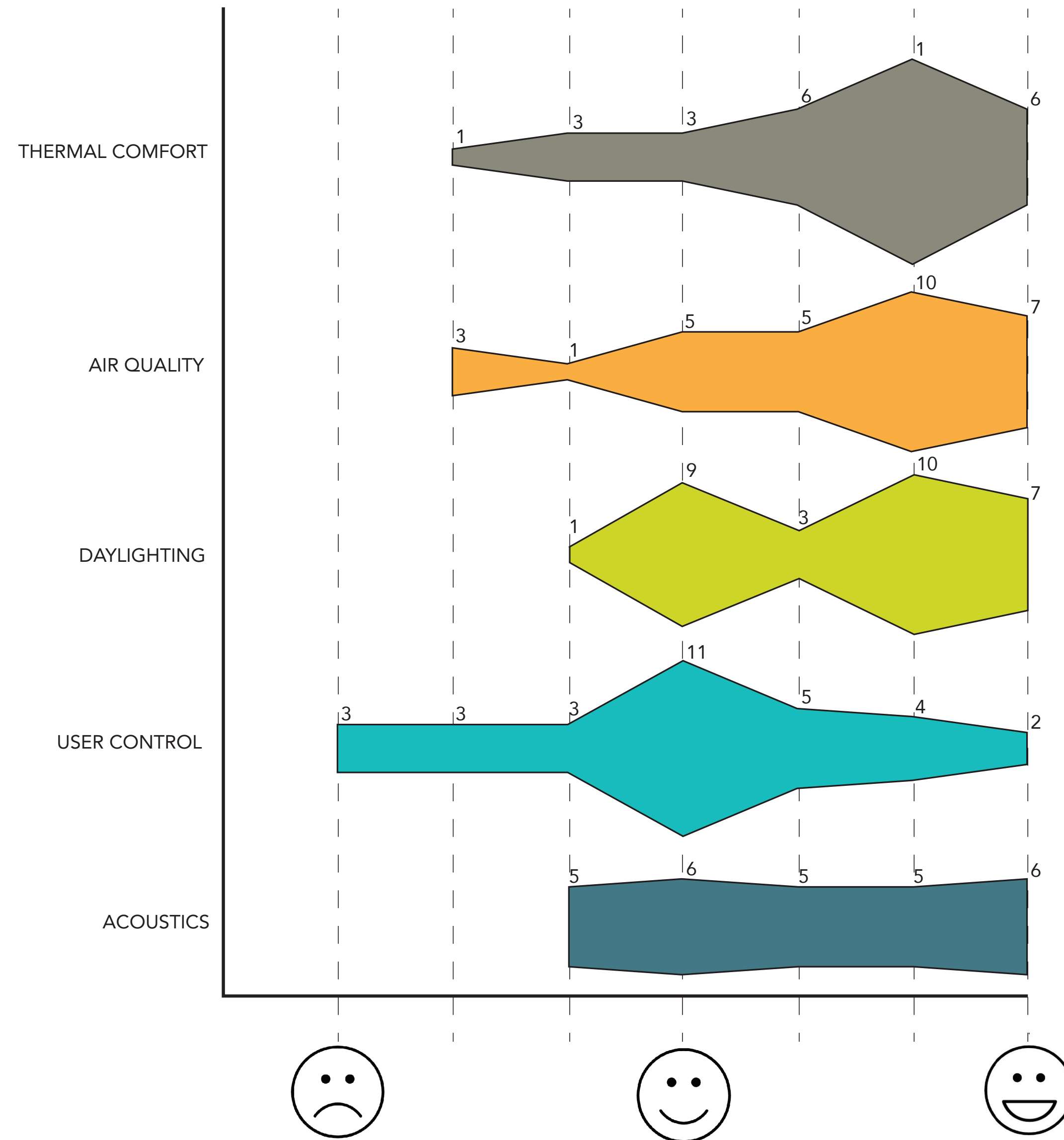
The survey was distributed by three methods: in-person distribution, email, and social media. The primary method of obtaining survey responses was to distribute the survey in person.

URL links to both surveys were distributed to the faculty and staff of PCC Rock Creek via email; the links and information about the survey was sent to the sustainability coordinator of PCC Rock Creek who then distributed the survey. In addition, student groups were contacted via Facebook.com for assistance in distributing the surveys to more students. These were promoted on their respective Facebook pages.

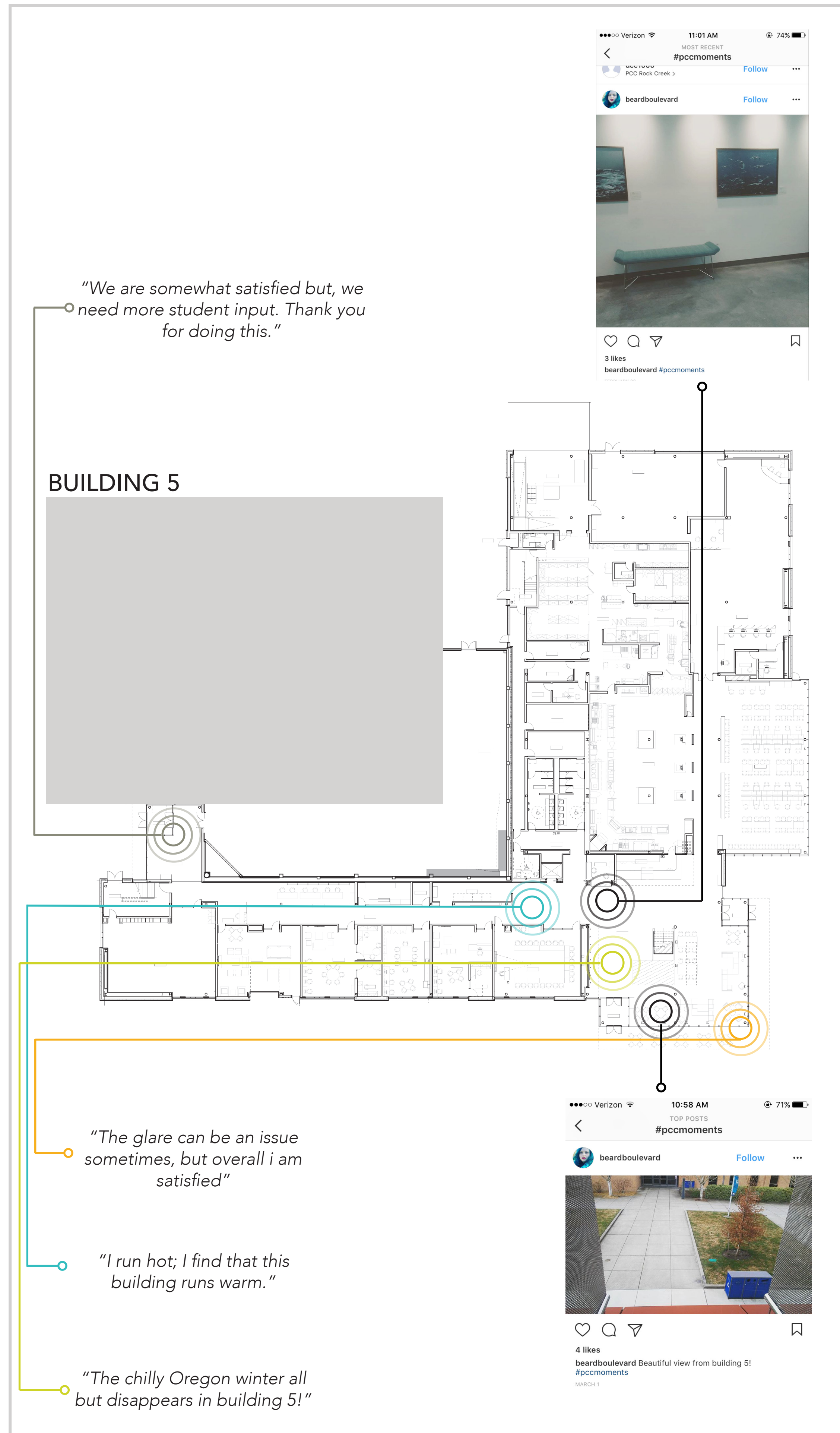
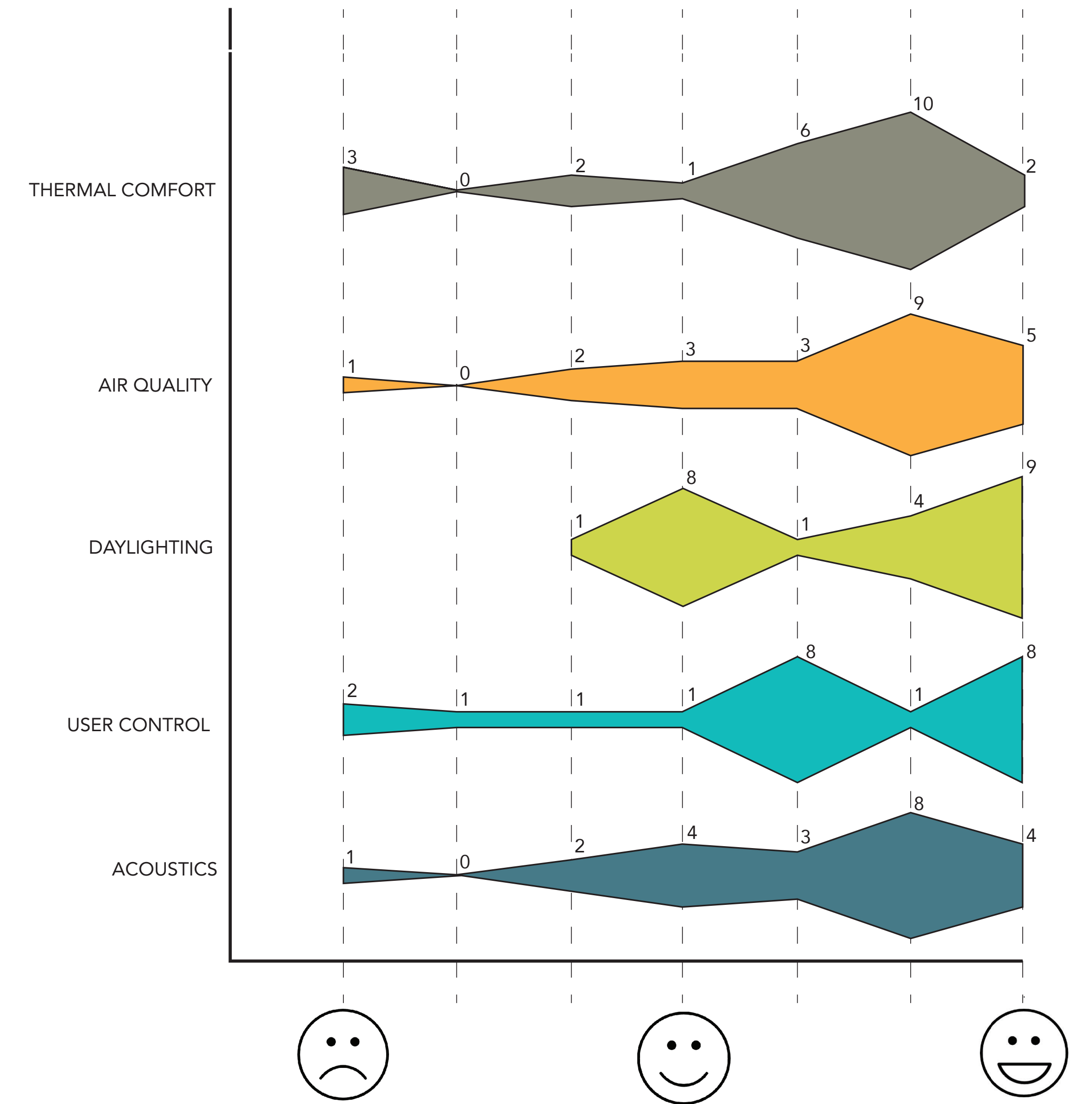
DATASETS



BUILDING 5



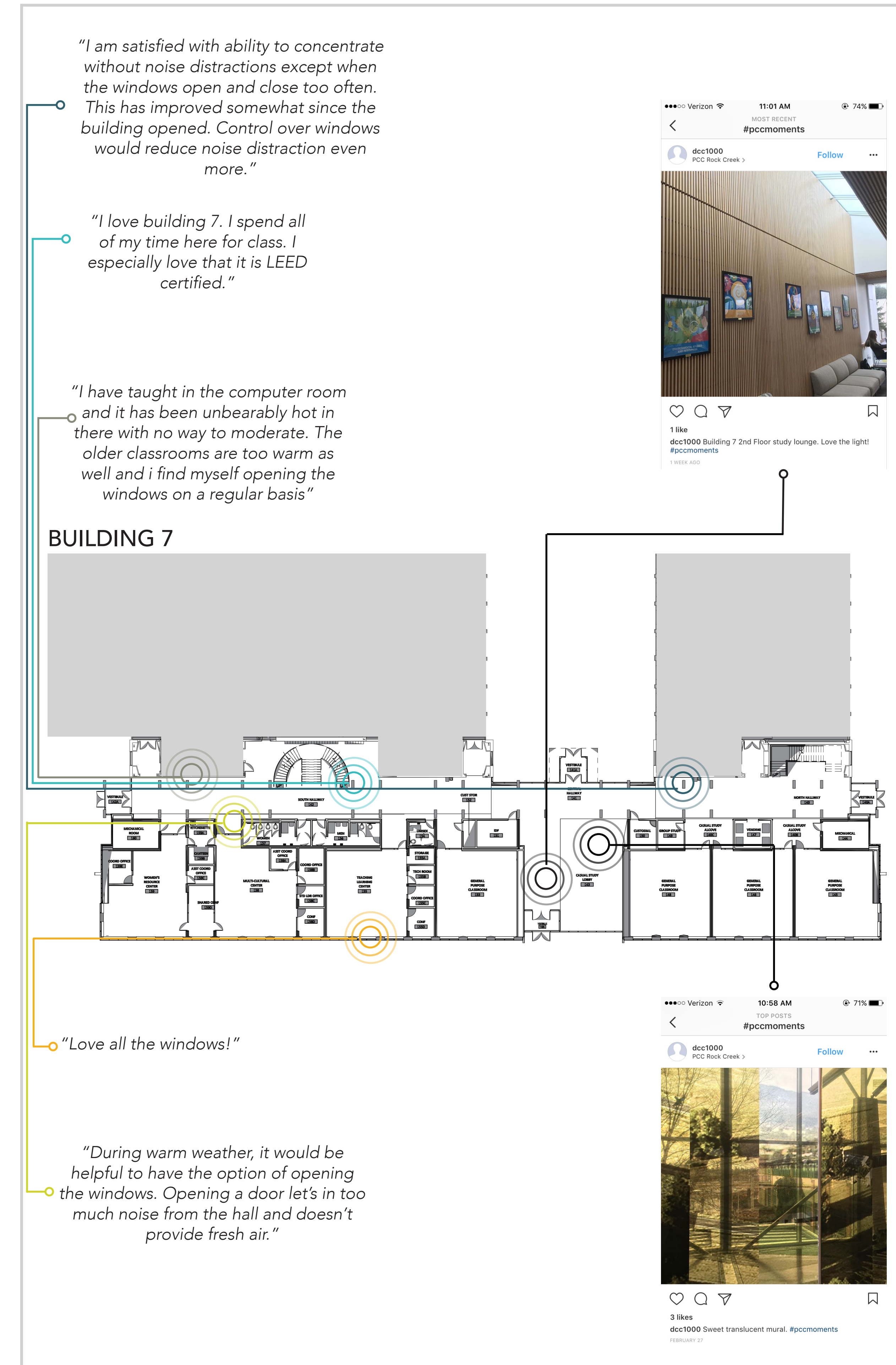
BUILDING 7



CONCLUSION - BUILDING 5

With the varied programs and common spaces located in Building 5, a larger sample of survey responses was gathered than for Building 7. Thermal environmental conditions in Building 5 is the outcome of a conventional mechanical system combined with a narrowly defined comfort range based on ASHRAE Standard 55.

With an 87% satisfaction rate, Building 5 meets a high industry standard for thermal comfort. When asked for issues occupants had with thermal comfort in Building 5, one that arose was with the cold air flowing through the hallway when the front doors open. The doors open onto the lounge space on the first floor. Despite a vestibule, a breeze can be felt by occupants in this area. In addition, the café is directly between the hallway and the door so those waiting in line are affected by the breeze. From our observations, the issue seemed to occur most frequently when there was high pedestrian traffic into the building after buses arrive, causing the doors to be opened for an extended period of time.



BUILDING 7

It is recommended that the survey is continued and more data is gathered before determining thermal satisfaction for each building. Due to a small sample size and limited time, the survey data may not accurately represent all occupants of the new addition. It appears some responses correlate to spaces in the existing building, which could skew the results. It is recommended that the survey is continued and more data is gathered before determining thermal satisfaction for the Building 7 addition.

When asked if participants knew about natural ventilation in Building 7, only 43% answered that they were aware. 64% of participants indicated that this knowledge made them feel more favorable about the comfort level. This indicates that through educating the participant, we may change the occupants' perception of their own thermal comfort while in the building.

A majority of occupants who were dissatisfied have stated that they wished some windows could open when the rooms became too hot and expressed a frustration with the inability to open windows. A corrective action might focus on the operability of the windows in the classrooms and computer lab.