

Better Building Design for More Collaboration and Better Mental Health

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Background

Strong social networks are essential for good mental health. Since most adults spend a large portion of their time at work, fostering an environment that enhances workplace social interactions should be an essential component of employee wellness. Growing evidence supports the strong effect the workplace built environment has in promoting a collaborative space through design elements such as open floorplans and access to technology.

Hillman Hall, at Washington University in St. Louis was constructed with features to increase collaboration during the work day. The Brown School Expansion Evaluation Project (BEEP) studied the impact of these features on collaboration, physical movement and sustainability.

Our Research Question

Is there an association between collaboration, social networks, and the workplace built environment at the Brown School in Washington University in St. Louis?

Methods

We conducted an online social network survey and a paper, worksite satisfaction survey among faculty and staff at the Brown School (intervention site) and the Sam Fox School (control). We also performed common area observations to assess social interaction within the buildings. All methods were conducted at baseline and again after the completion of Hillman Hall.



Innovative Building Design Features



Access to Natural Light



Collaborative Outdoor Spaces



Walkways allowing flow & connection



Social stairwells with natural light

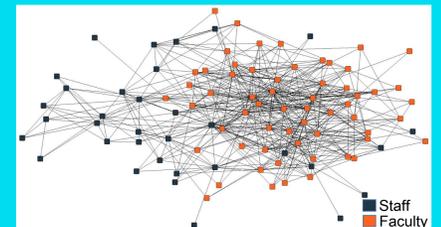
Results

Social Network Survey

- 25% increase in the density of the Brown School research network
- 72% increase in the density of the Brown School teaching network
- 113% increase in the density of the Brown School social network
- The average number of connections (degree) increased between baseline and follow-up for teaching and social connections.
- There were significant decreases in the average number of research ($p=.001$) connections and a significant increase in the average number of social connections ($p=.028$).



Social Network Analysis: Baseline



Social Network Analysis: Post Move

Common area observations

- After completion of Hillman Hall, the communal spaces on the first floor became the center of social and collaborative interactions. Some spaces were not used as originally envisioned.

Worksite Satisfaction Survey

- Brown School faculty and staff (intervention group) had higher satisfaction than control groups in being able to communicate in-person with colleagues, in private, have a conference call with colleagues, and stop and talk with others in corridors and break areas.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The amount of space available for individual work is sufficient.	1	2	3	4	5
2. The amount of space available for group work is sufficient.	1	2	3	4	5
3. The amount of space available for individual work is sufficient.	1	2	3	4	5
4. The amount of space available for group work is sufficient.	1	2	3	4	5
5. The amount of space available for individual work is sufficient.	1	2	3	4	5
6. The amount of space available for group work is sufficient.	1	2	3	4	5
7. The amount of space available for individual work is sufficient.	1	2	3	4	5
8. The amount of space available for group work is sufficient.	1	2	3	4	5
9. The amount of space available for individual work is sufficient.	1	2	3	4	5
10. The amount of space available for group work is sufficient.	1	2	3	4	5
11. The amount of space available for individual work is sufficient.	1	2	3	4	5
12. The amount of space available for group work is sufficient.	1	2	3	4	5
13. The amount of space available for individual work is sufficient.	1	2	3	4	5
14. The amount of space available for group work is sufficient.	1	2	3	4	5
15. The amount of space available for individual work is sufficient.	1	2	3	4	5
16. The amount of space available for group work is sufficient.	1	2	3	4	5
17. The amount of space available for individual work is sufficient.	1	2	3	4	5
18. The amount of space available for group work is sufficient.	1	2	3	4	5
19. The amount of space available for individual work is sufficient.	1	2	3	4	5
20. The amount of space available for group work is sufficient.	1	2	3	4	5
21. The amount of space available for individual work is sufficient.	1	2	3	4	5
22. The amount of space available for group work is sufficient.	1	2	3	4	5
23. The amount of space available for individual work is sufficient.	1	2	3	4	5
24. The amount of space available for group work is sufficient.	1	2	3	4	5
25. The amount of space available for individual work is sufficient.	1	2	3	4	5
26. The amount of space available for group work is sufficient.	1	2	3	4	5
27. The amount of space available for individual work is sufficient.	1	2	3	4	5
28. The amount of space available for group work is sufficient.	1	2	3	4	5
29. The amount of space available for individual work is sufficient.	1	2	3	4	5
30. The amount of space available for group work is sufficient.	1	2	3	4	5



1. Scores range from 1-7, where 1 represents strongly disagree and 7 represents strongly agree. 2. * represents significant difference in means in either a one-way ANOVA or post-hoc bonferroni test.

Conclusions and Recommendations

The BEEP project was a unique natural experiment evaluation that studied the workplace social environment as it related to physical attributes of a building. These findings are important contributions to a growing research interest on how the worksite built environment affects health. Future studies can build upon our multi-method approach to evaluating workspace and as evidence builds, recommendations can be made to influence building design to promote positive collaboration and better mental health.