

Brew-coustics:

Acoustical studies at the Art Institute
in Portland's Brewery Blocks

Our Team



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Hypotheses

- Hypothesis A: People are less likely to open windows if it is noisy outside.
- Hypothesis B: Noise will decrease unevenly at an equal height on the north and south sides of the building.

Methodology (A.)

Survey occupants about their use of windows and acoustical comfort levels on both the north and south sides of the building.

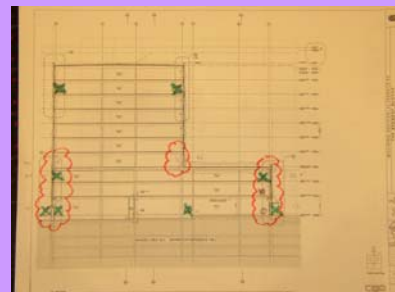


Methodology (B.)

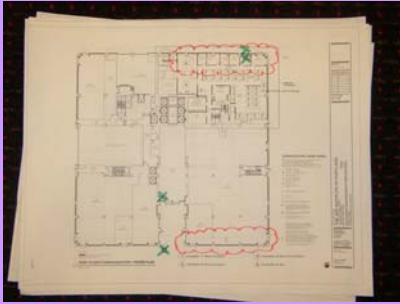


Measure decibel levels on both the north and south sides of the building.

Testing Locations, Section



Testing Locations, First Floor and Third Floor Plan



Data (A.) Question 1:

- How often do you open windows?
 - A. < 1x/ week (5)
 - B. > 1x/ week (1)
 - C. > 3x/ week (0)

Question 2:

- How long do you leave windows open?
 - A. < 1hr. (3)
 - B. > 1hr. (2)
 - C. > 4hrs. (1)

Question 3:

- Does outdoor noise play a role in your use of windows?
 - A. Never (2)
 - B. Sometimes (2)
 - C. Always (2)

Question 4:

- Do you open windows less often when it is noisy outside?
 - A. Never (2)
 - B. Sometimes (0)
 - C. Always (4)

Data (B.)

	NORTH			SOUTH			NOTES
	IN	OUT	CL.WIN	IN	OUT	CL.WIN	
9 th FLOOR	X	86.0	72.4	X	81.0	68.0	LOBBY (4) BOOK/PORCH LINA/LENA (5)
3 rd FLOOR	76.0	83.0	71.3	75.7	87.0	69.7	OFFICE
1 st FLOOR	X	89.0	77.5	X	83.2	78.5	FIXED WINDOW

Analysis/Discussion/Conclusions

- Note: First-floor conditions were observed outside because first-floor windows are not operable.
- Noise attenuates MORE on the south side of the building (where the podium is located) than on the north side.
- Three out of four measurement pairs confirm that street noise diminishes more with height on the podium side of the building than the non-podium side of the building.
- Limited survey confirms that outdoor noise is a factor in window usage.