What Annoys A Noise An Oyster?

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Why study acoustics?
Observations of building properties

• No “white / masking” noise
• Open plan / spatial volume
• Design intent
• Hard surfaces
• Acoustic abatement value engineered out
Hypothesis

Noise generated in the Commons area area disturbs workers in adjacent offices.
Methodology

• Interviews
• Monitoring db levels over time in office space.
• Mapping of noise propagation in Commons area.
Interviewing

- Noise events?
- Overall impression?
- Positive / negative?
- Modifications?
Noise Production

fr/ common areas through structure
Interviews: First floor

Overall Impression?

- negative  o neutral  +positive

Modifications?

- close door  nothing
- headphones/ white noise
Interviews: Second floor

Overall Impression?

- negative  o neutral  +positive

Modifications?

close door  nothing
headphones/ white noise
Interviews:

- open door policy
- questions answered w/o getting up
- absence of background noise
- commons good for meetings
- no echoes
Interviews:

- overhearing personal conversation
- general lack of privacy
- conflicts between needing to have door open and wanting to close door
Office Monitoring

- Identified case study office with specific noise problems
- Product invention: manufactured cable to attach sound meter to HOBO for measurement over time.

Jack Parchesky Rocks!
Office 222 Noise Infiltration

10:40 Door Slam Experiment
11:45 Occupant Closes Door
12:22 Bags popped
Noise Mapping

- Incidental noise
  - Walking
  - Book drop
  - Coughing

- Impromptu conversation
  - 2-6 people talking

- Large gatherings
  - Meetings
  - Lunch
INCIDENTAL NOISE
Door SLAM Measurements

Room 119
Room 123
Room 220
Room 223

Door Location

- Point A
- Point B
- Point C
- Point D

Point A
Point B
Point C
Point D
### Test Locations

<table>
<thead>
<tr>
<th>Test 1</th>
<th>Test 2</th>
<th>Test 3</th>
<th>Test 4</th>
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<tbody>
<tr>
<td>Point A</td>
<td>Point B</td>
<td>Point C</td>
<td>Point D</td>
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### Book DROP Measurements

<table>
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<tbody>
<tr>
<td>Test 1</td>
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<td>90</td>
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</tbody>
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**Diagram of Test Locations**

- **Point A**
- **Point B**
- **Point C**
- **Point D**
- **Point E**
Test Locations

- Test 1
- Test 2
- Test 3
- Test 4

Test Locations

- Point A
- Point B
- Point C
- Point D
- Point E

COUGH Measurements

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<th>Test 1</th>
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WALKING Measurements

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<tr>
<th>Stroll</th>
<th>Point A</th>
<th>Point B</th>
<th>Point C</th>
<th>Point D</th>
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Conference Room  CONVERSATION
Measurements

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<th>Max</th>
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</tbody>
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Point 1  Point 2  Point 3  Point 4  Point 5

Max and Min Levels

Conversation Area

Point 1  Point 2  Point 3  Point 4  Point 5
Lunchtime Conversation Measurements

People:

12:08pm: 16-19 People
12:13pm: 25 People
12:18pm: 26 People
12:30pm: 22 People

Events:

12:08pm:  
- People arriving (Point A)
- Typing audible from room 123 (Point D)

12:13pm:  
- Soda can opened – 80 dB (Point B) – 70 dB (Point A)
- Laughter – 75 dB (Point B)

12:15pm:  
- 119 door closes (Point A)
- 125 door closes (Point A)
- 222 door closes (Point D)

12:18pm:  
- 223 door closes (Point D)

12:22pm:  
- 2 Bags pop – 78dB, 80 dB

12:30pm:  
- Typing audible again (Point D)
Conclusions:

PARTY ON WOODS HOLE!

• Does noise generated in the commons area disturb the work of the center?
• OSHA standards
• Noise Criteria Curves