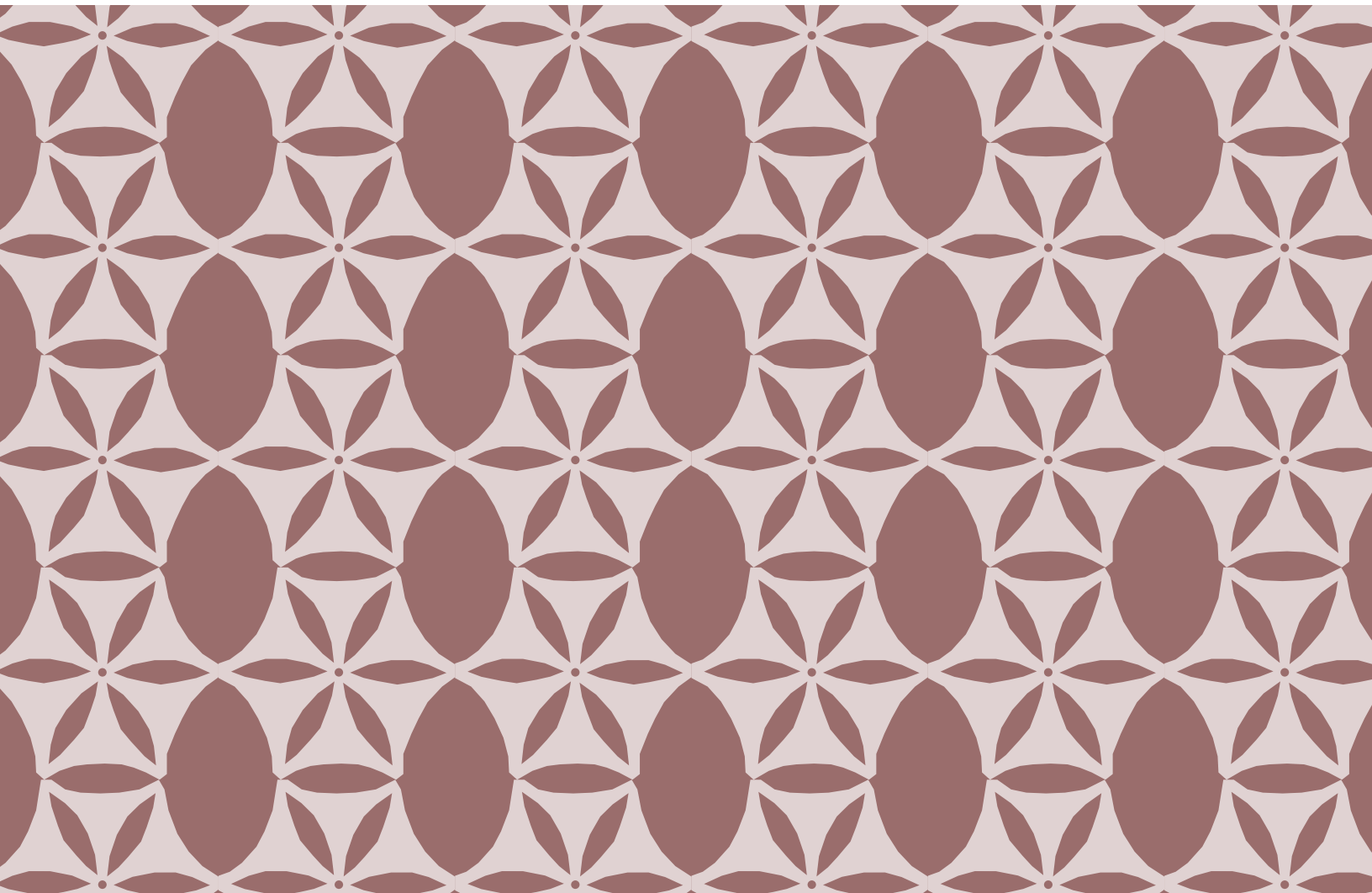


# ACOUSTICS REPORT

## The Crossings



## **Introduction**

As the Student In Residence, I was asked to research the acoustical issue in The Crossings. I involved multiple students and experts in my research to provide a menu of options for Ohio Living Westminster Thurber. These options are focused on providing acoustical solutions for the noise created in the restaurant. The options may not solve any of the noise that comes from the outside of The Crossings, such as from the kitchen or the lobby. These solutions combine the ideas of residents with the feasibility and efficiency of how best to solve the issue. Not all of the ideas shared are included in this document.

The following page are summarized notes from speaking with residents about their experiences at The Crossings and their ideas about how to solve the acoustical issue.

The pages following residents' ideas and experiences are examples of products that could help the overall issue. It is not a comprehensive list of solutions, however they seem like the most efficient and effective.

## What do residents have to say?

### Physical Space Challenges

- Middle tables are difficult to hear
- Biggest tables seem like they are in noisiest of places
- Need some actual research for this space
- 5 top tables in the corners are noise generators
- Don't want to get rid of these tables though
- Phone system is very loud
- New chairs will not have upholstery
- Smaller, so could possibly redesign the setup
- Corners seem to be quieter but not by much
- Hearing is better closer to the wall, only marginally

### Possible Solutions

- Tapestries or plants could cover walls
  - Tapestries that could have color on both sides
  - Could use artists for the tapestries
- Open squares in partitions could be covered
- Could use folding screen
- Rearrange the buffet setup
- Ceiling tiles to absorb sound
  - Follow the curvature pattern for artistic look
- Pad underneath table
- Difficult to agree upon art
- Drapes or curtains used around glass walls

### Things to Consider with New Solutions

- Need the wood paneling
  - Walkers and canes to be leaned against
  - Wood being warm
- Granite should not be covered
- Natural light is important
- Can cover glass on the hallway side, prefer not to cover any of the glass
- No music
- Only way to quiet this room is to absorb sound
- Restaurant is used as a communication sharing and gathering space for those who live alone
- Could look to other locations as examples
- Investigate if there is a quantifiable way to measure sound quality

### Other information

- Hearing Aids
  - People with and without hearing aids speak up louder to hear each other
  - Lack of selectivity in hearing aids/can't separate noise
- Buffet
  - Lunch time is noisier because of the buffet style—people are walking up and around
  - Could rearrange buffet
  - Also poses challenges for those we aren't as able bodied
  - Because of staffing issues, dinner is now being served 3 times a week by buffet

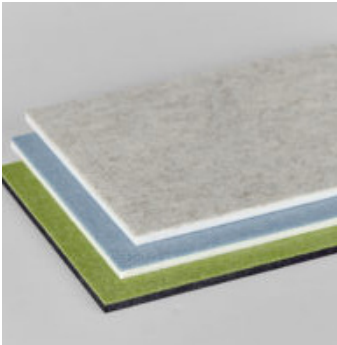
# Possible Solutions

The following solutions provided are through an acoustics company Unika Vaev. Their business is focused on a variety of decorative acoustic products. These acoustical remedies are available in multiple surface finishes and use applications. The most important quality of these products is the absorption of sound. The following solutions are listed in price from most inexpensive to most expensive.

## PANELING

The first option that could be utilized to absorb sound would be to install panels in various locations throughout The Crossings. This is the easiest and simplest solution. The following photos are the options of thicknesses of the panels. The thicker the panel the more sound is absorbed. The panels could be installed directly on the wall, however if there is a gap left between the panel and the wall, more sound will be caught and absorbed through the gap. The panels can be ordered in a variety of colors, especially to match the current wall color.

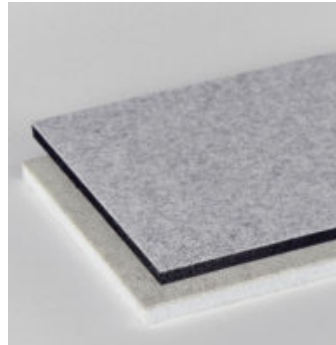
8 MM



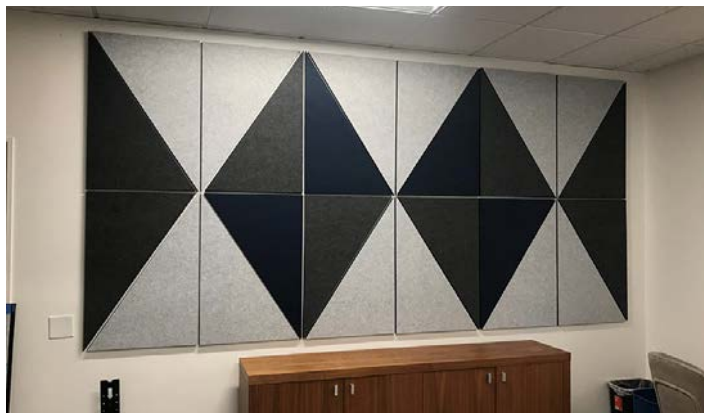
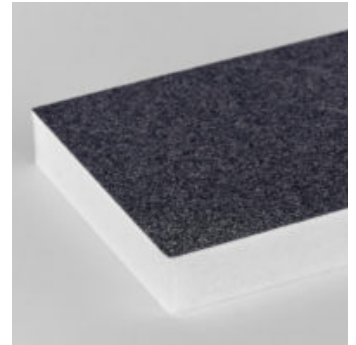
13.5 MM



25 MM



50 MM



### Application

Ceiling, Vertical Surfaces

### NRC Rating

0.5

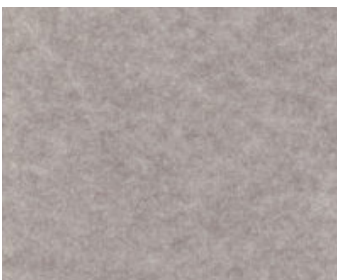
### Dimensions

3'11.5" x 8'11" (1210 mm x 2720 mm)

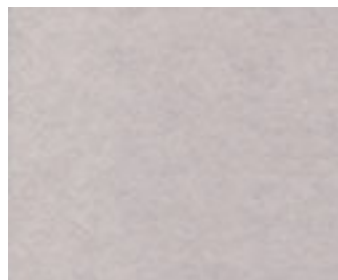
### Sold In

Boxes of 5

OATMEAL



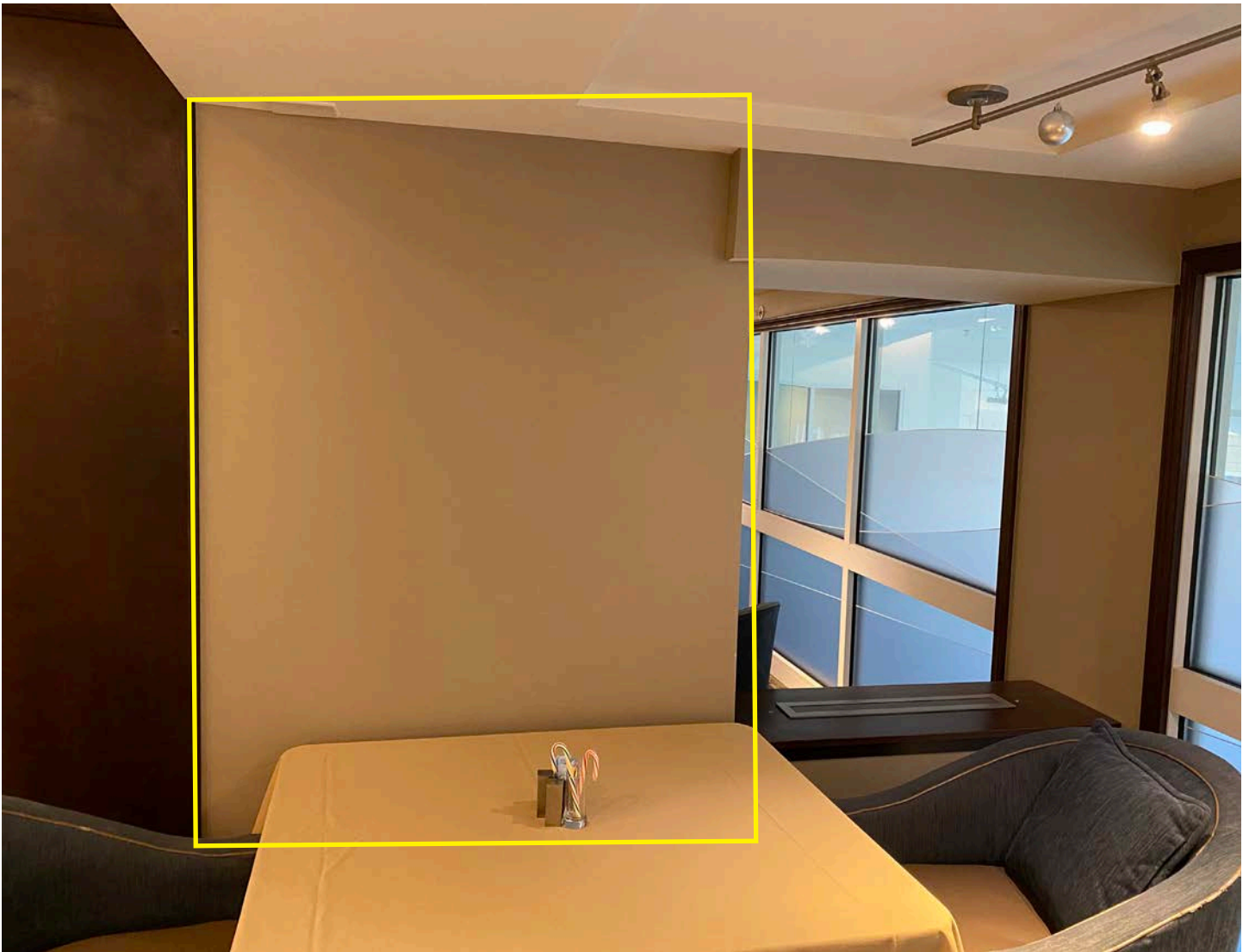
CAMEO



CREAM



A choice of these three colors best match the wall color in The Crossings.



The yellow boxes depict where the acoustic panels can be placed for maximum sound absorption.

## HANGING SCREENS

Another solution, yet more interesting acoustical piece are hanging screens. These screens are pieces attached to each other and hung in open spaces to absorb sound.



AIRFLAKE



/CUZ2U  
BLAZER VASSAR



The airflake is a type of hanging screen that could be utilized in The Crossings to reduce noise between tables. The right hand picture displays a possible color for the airflake that matches the rest of the color scheme in the restaurant.

The left hand photos are what the airflakes look like all put together to formulate the hanging screens.

### Application

Ceiling, Wall

### NRC Rating

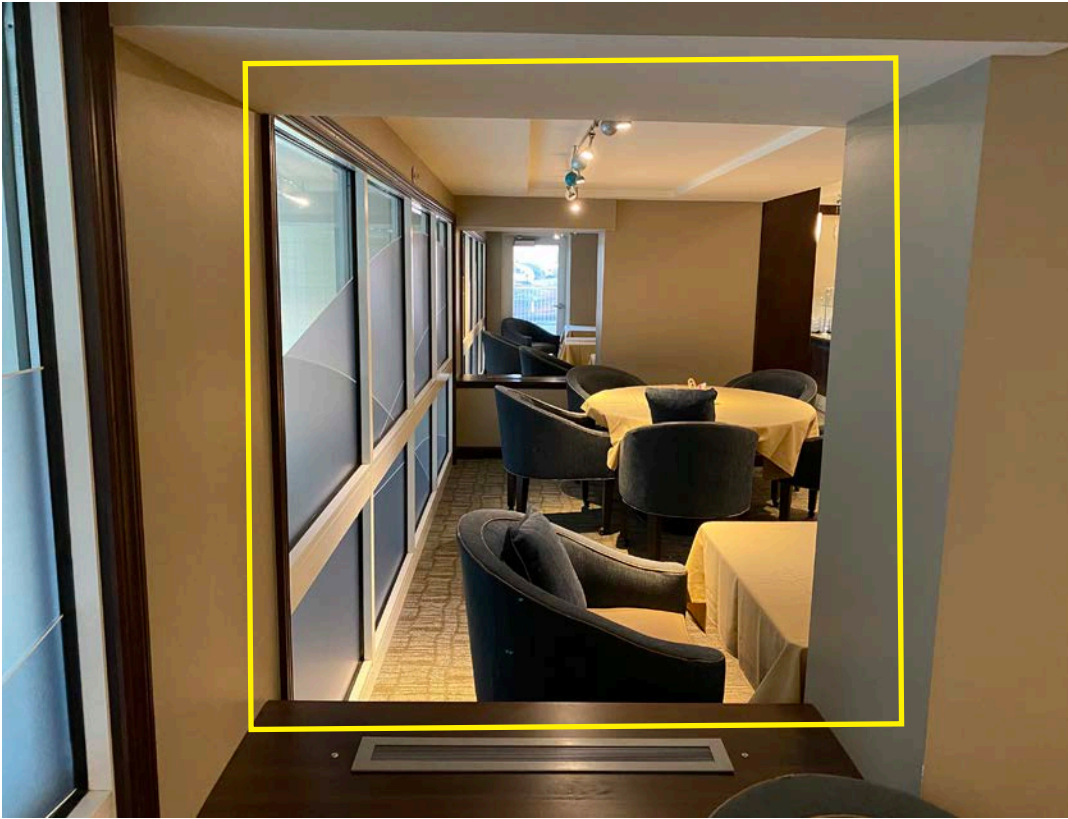
0.25 - 0.65 depending on module type open or closed

### Dimensions

Airflake- 15.75" (height) x 13.5" (width) x .6" (depth) | Airflake XL- 27.5" (height) x 23.6" (width) x .6" (depth)

### Sold In

Airflake: Box sets of 3 or 10 (one color per box) | Airflake XL: Box sets of 2 or 5 (one color per box)



The yellow boxes depict where the acoustic hanging screens could be placed to help absorb sound. Residents had interest in closing these wall windows for more privacy. There are three of these openings.



## WOOD PANELING

The following solutions provided are through an acoustics company Unika Vaev. Their business is focused on a variety of decorative acoustic products. These acoustical remedies are available in multiple surface finishes and use applications. The most important quality of these products is the absorption of sound.

### ECOUSITC VENEER



JARRAH  
NON-PERFORATED  
BLACK CORE



JARRAH  
PERFORATED  
BLACK CORE

Veneer is available with a micro-perforated pattern designed to enhance acoustic performance as a porous absorber, which causes multiple sound reflections. The small size of the pores enable a more efficient absorption at high frequencies. The non-perforated finish is beneficial as it has excellent absorbency in the low-frequency voice range of the sound spectrum.

#### **Application**

Ceiling, Vertical  
Surfaces

#### **NRC Rating**

0.8

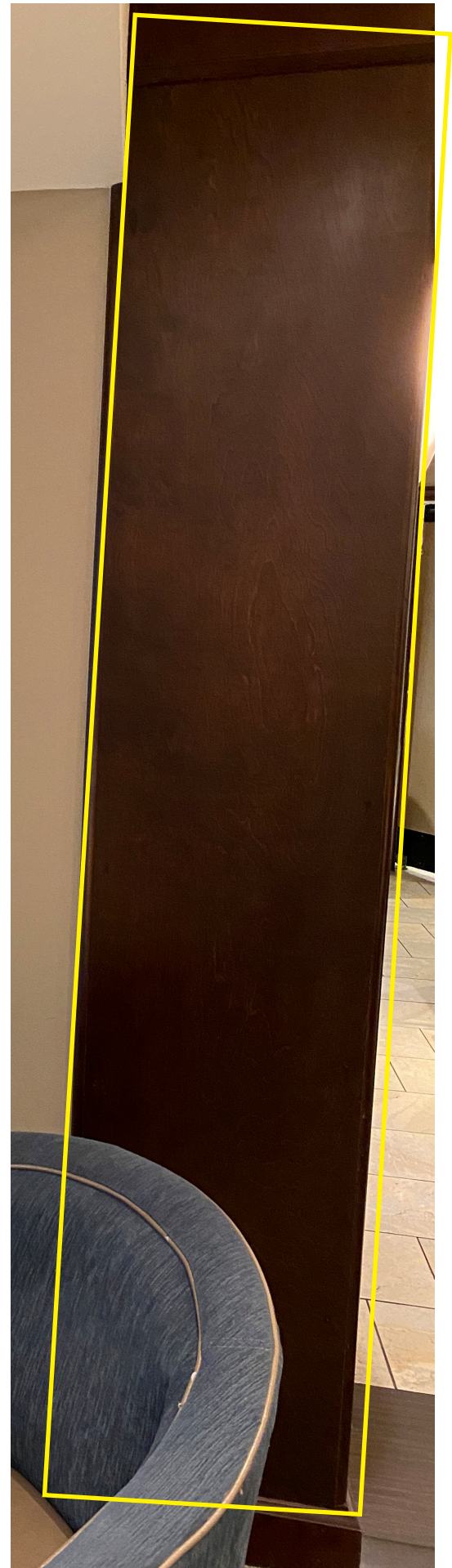
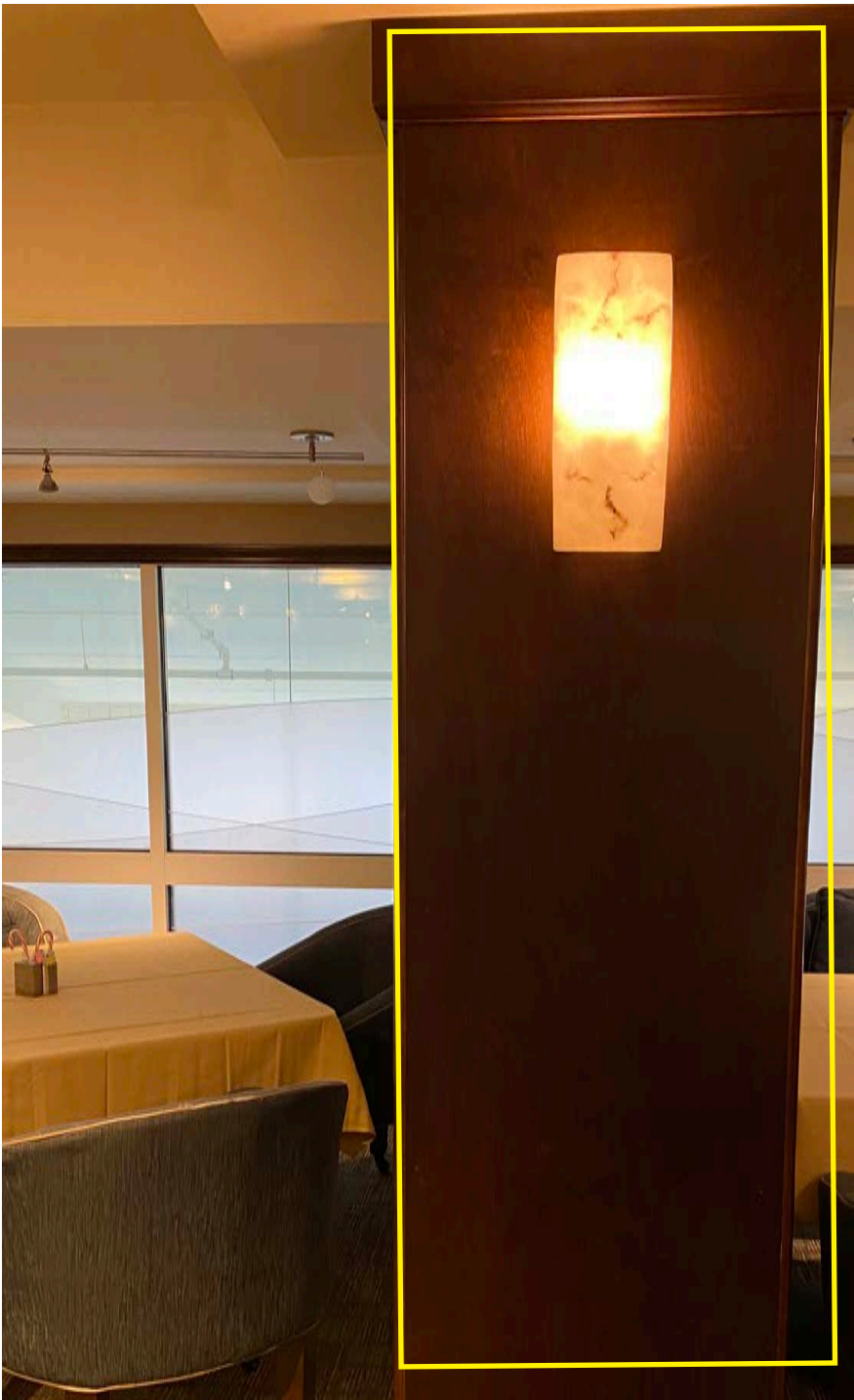
#### **Dimensions**

11.34" x 8' 10"  
Thickness- 0.98"

#### **Sold In**

4 per box

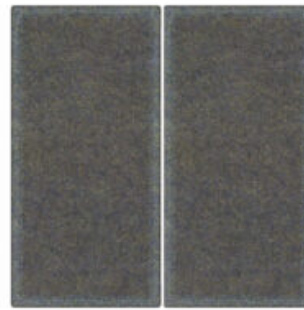




The yellow boxes depict where the acoustic wood paneling could be placed to help absorb sound. Residents had interest in keeping the wood because it adds warmth to the room. This would ensure the aesthetic of the room stays similar to the current state.

## TILES

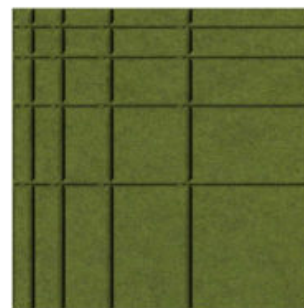
The following solutions provided are through an acoustics company Unika Vaev. Their business is focused on a variety of decorative acoustic products. These acoustical remedies are available in multiple surface finishes and use applications. The most important quality of these products is the absorption of sound.



ECOUSTIC EDGE  
TILE

**Application**  
Ceiling, Wall

**Dimensions**  
15.75" x 7.87"



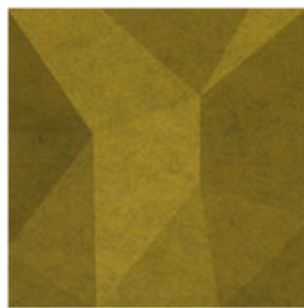
ECOUSTIC LINEAR  
TILE

**Application**  
Ceiling, Wall

**NRC Rating**  
0.6

**Dimensions**  
19 11/16" Square  
Thickness- 1 1/4"

**Sold In**  
Box sets of 8



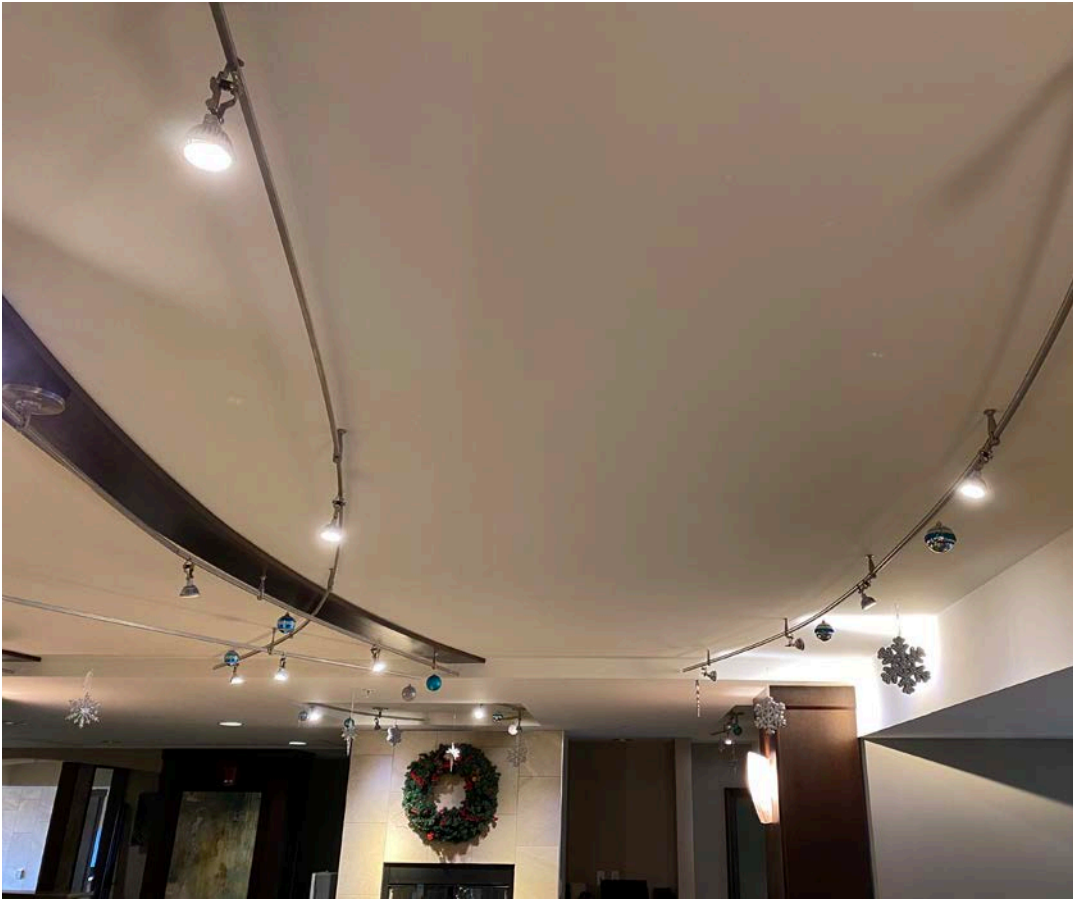
ECOUSTIC MATRIX  
TILE

**Application**  
Ceiling, Wall

**NRC Rating**  
0.65 (with Ecooustic®  
Infill: 0.90)

**Dimensions**  
19.7" x 19.7"  
Thickness- 2.56"

**Sold In**  
Box sets of 8



The tiles can be installed on the ceiling to help absorb sound. This solution seems like it would be the most beneficial, since it covers the most area across the whole restaurant.

