

## The Science Behind the Sound at Kleinhans Music Hall

### Grades 7 & 8

#### 1 Class Period

(or 2 depending on how many videos are shown)

### Program Segments

- A Legacy for the Future - *optional (approximately 5 minutes)*
- A Modern, Visionary Design - *optional (approximately 6 minutes)*
- Kleinhans for the Community (approximately 9 minutes)

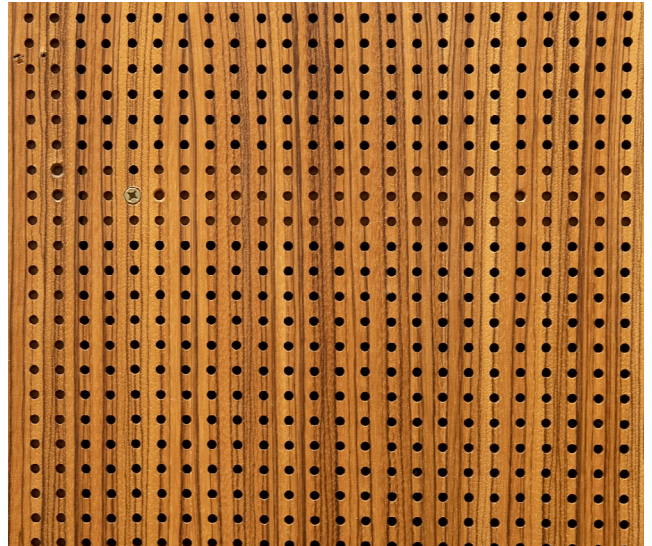
### Objectives

Students will be able to:

- Identify the architectural techniques and design elements of Kleinhans Music Hall
- Understand how physical elements in the building's construction enhance the acoustics of the hall
- Understand the effect of design details in the hall on how sound is distributed and received by the listener
- Recognize the aesthetic movement and architectural style of the hall's designers

### Instructional Resources

- *Kleinhans' Gift to Buffalo*
- Paper
- Pen/Pencil
- Markers
- Poster board



Eileen Elibol

### Procedures

#### CLASS PERIOD 1

1. Prior to viewing the video segments, the teacher will explain that *Kleinhans' Gift to Buffalo* tells the story of Kleinhans Music Hall in Buffalo, NY. The teacher will ask these

Focus Questions:

- What do you know about Kleinhans Music Hall?
- What factors must be considered when designing a music performance space?

2. Students will watch the video segments and take notes on the physical design elements in the hall's construction that elevate its acoustics.

3. After watching, the teacher will ask these Focus Questions:

- How does the design of the building affect the listening experience?

- What physical elements in the building's construction enhance the acoustics of the hall?
  - How does the design of the hall resemble a stringed instrument? How does this design elevate the sound in the hall?
4. Students will write a paragraph, or two, outlining the:
- Physical design elements that enhance the acoustics of Kleinhans Music Hall
  - Architectural style of Kleinhans Music Hall and how it contributes to the concert experience from an audience and performer perspective

### Assessment Task

- Students will write one or two paragraphs about the physical design elements that enhance the acoustics of Kleinhans Music Hall, including how the overall architectural style contributes to the concert experience from both the audience and performer perspective.

### Adaptations for Grades 9-12

- Students could illustrate their findings as a poster presentation using provided photos of Kleinhans Music Hall (<https://kleinhansbuffalo.org/photo-gallery/>) as examples of architectural design elements.
- Students could also compare and contrast the architectural design of Kleinhans Music Hall to that of a stringed instrument through visual displays in poster format.

### Extension Activity (optional)

- Using their knowledge of acoustic architecture, students can design and draw their own concert hall that enhances the listening experience.

