a·'ku·stiks
[n. pl. defining sound for the next generation]

July 24, 2024

Mr. Emery Leonard
Principal
TVS
1200 Peachtree Street NE, Suite 200
Atlanta Georgia 30309

Re: Raleigh Red Hat Amphitheater Relocation – Environmental Noise Model
AKS Project #23-0993

Dear Emery,

We have created an environmental noise model for a relocated Red Hat Amphitheater (RHA) in collaboration with TVS Design and Ratio Design (see Figure 1.) The model, which is based on the latest Schematic Design package, utilizes a SoundPLAN model that incorporates ISO 9613-2 (Acoustics -- Attenuation of sound during outdoor propagation -- Part 2: General method of calculation) to forecast noise propagation from a typical touring sound system in the relocated RHA and comparing it to a similar model of the existing RHA. The resulting noise contours of both can be viewed in Figure 2. The results indicate that the relocated RHA will generally decrease overall environmental noise levels in the Raleigh community compared to the existing RHA, with a reduction of up to 15 dBA in certain areas. The most notable noise level reductions will occur in areas behind the relocated RHA stage in a westerly direction from the stage. Areas that may increase in level will occur primarily in directions away from the community located West of the relocated RHA. Further refinement of the RCC façade design as it develops will also improve the condition.

The difference in environmental noise levels between the relocated RHA and the existing RHA is due to the following factors:

- The relocated RHA will have an enclosed stage and acoustic absorption treatments, better encapsulating and absorbing stage noise than the existing open RHA stage.
- The relocated RHA's audience bowl design, with a semi-circular shape and closer last row, will significantly enhance the visual and sonic connection between performers and the audience while reducing noise propagation to the community.
- A 12-inch masonry wall between the relocated RHA and the adjacent railroad has been developed as a crucial part of the noise control strategy for the relocated RHA. This wall will mitigate railroad noise in the audience bowl and reduce noise propagation in the community in a general westerly direction from the relocated RHA.
- The relocated RHA stage and touring sound systems will be oriented in the general northeast direction, contrasting with the existing RHA stage, which is oriented in the general southeast direction. The new RCC building will serve as a sound barrier towards the community in the general northern direction from the relocated RHA.

Please see the referenced Figures attached.

Sincerely,

C. Russell Todd

C. Russell Todd
Principal

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Figure 1
SoundPLAN Environmental Noise Model
Relocated RHA and new RCC

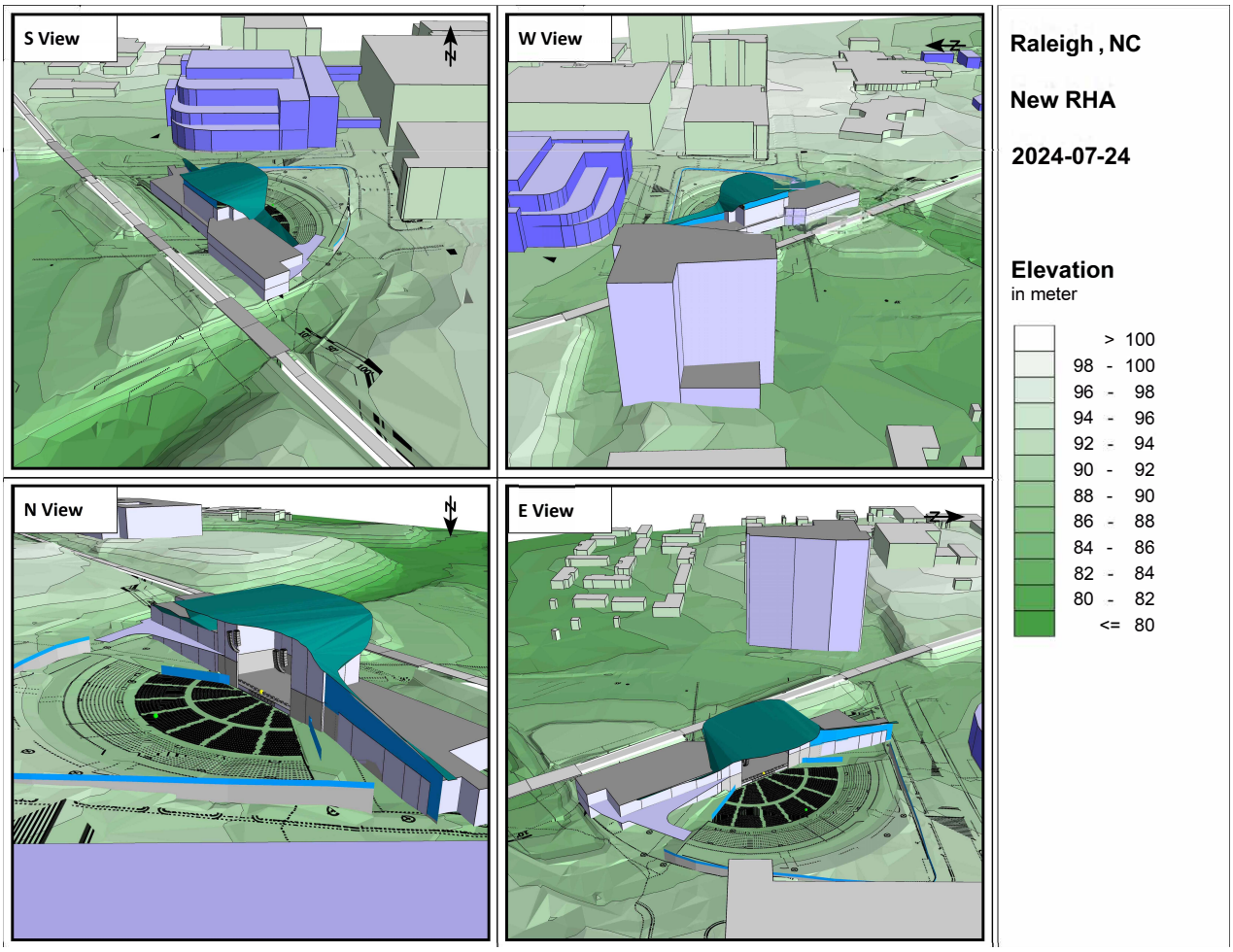
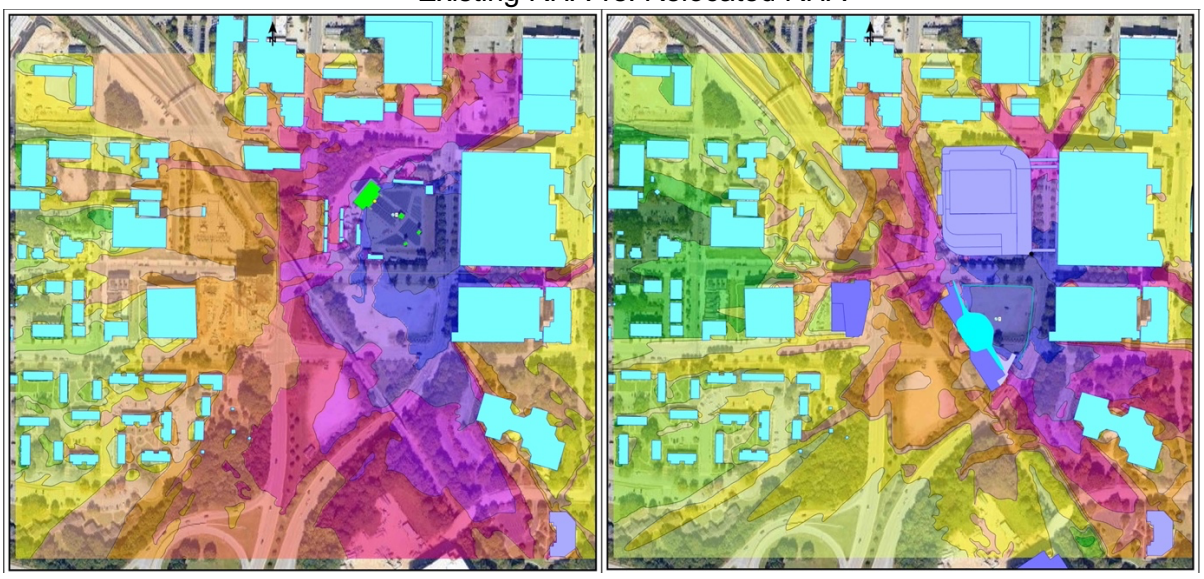


Figure 2
SoundPLAN Noise Contour Map
Existing RHA vs. Relocated RHA



Existing RHA

Relocated RHA

Figure 3
SoundPLAN Noise Contour Difference Map
Relocated RHA vs. Existing RHA