To: Andy Symons - ZUMC
Project: Sanctuary
Date: 5/21/2020

Thank you for your interest in Auralex® Acoustics, Inc., and for choosing us to assist with your acoustical concerns. Please keep in mind that these suggestions are prepared off-site with the information supplied and the combined experience of Auralex® Acoustics.

Project Overview

Traditionally, the criterion for the design of large enclosed spaces has been the reverberation time (referred to as "RT" from this point forward), or the time required for sound to decay 60dB once the source has stopped. What the listener ultimately experiences in terms of acoustic quality is derived from the relationship between the RT, the room's function, and the cubic volume of the room. When the RT and the function of a room "disagree", the listener typically regards the room as an unpleasant acoustical environment. (ex: "boomy", "harsh", "unintelligible"). The RT at 500Hz is the current accepted qualifier for optimum RT of a given space, due to the fact that it lies within a very active frequency range for speech and music applications.

Using the data, you provided, we created a model of your space to determine your current RT. We then introduced treatment into the model to help bring the predicted RT and the ideal RT (again, based on the volume and function of the room) into better "agreement".

Goals

The ideal RT for a 56,048 ft.^{3} facility is 1.20 seconds at 500Hz for optimum for speech intelligibility in this space. The untreated predicted RT at 500Hz is currently about **1.17 seconds**. Reducing the RT will require the strategic placement of absorptive materials across wall surfaces. The graphs to follow represent the ideal RT of the room, the untreated RT, and the predicted RT for the treatment suggestion outlined below.

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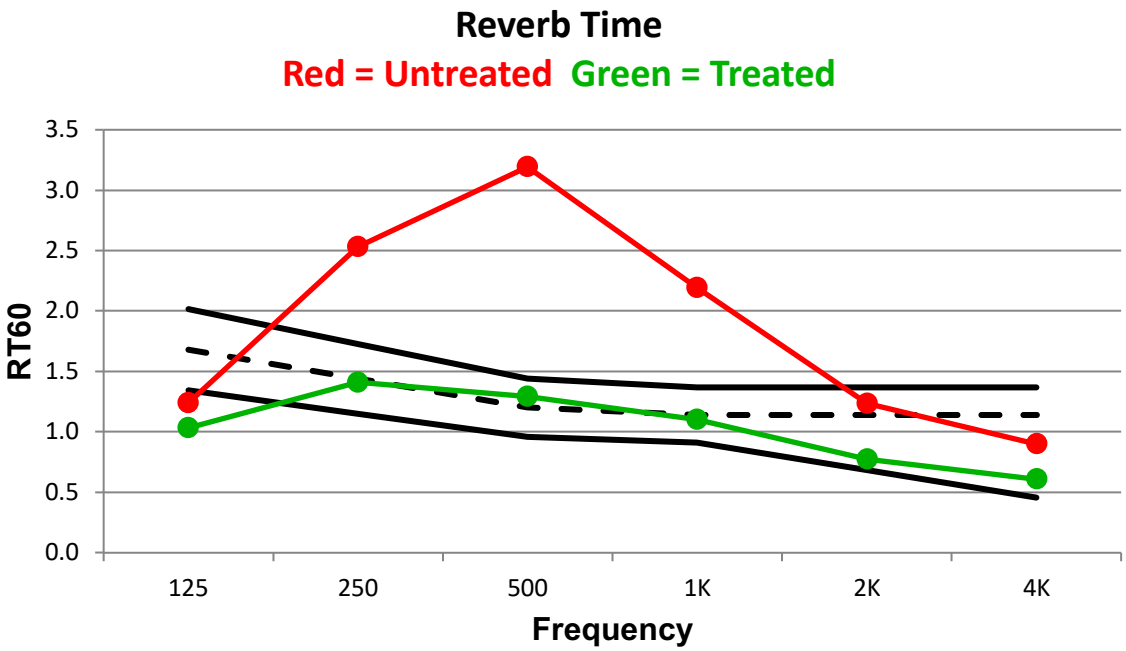
The table and graph below demonstrate the difference between the current untreated response in the room, and the implementation of the suggested treatment.



Eyring	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
Ideal	1.68 sec	1.44 sec	1.20 sec	1.14 sec	1.14 sec	1.14 sec
Untreated	1.24 sec	2.53 sec	3.19 sec	2.19 sec	1.23 sec	0.90 sec

*The graph above depicts our projected results for your room, based on the information supplied.

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Summary

Incorporating this treatment plan as indicated should help bring the RT at 500Hz to an acceptable and pleasing level. This will translate to the listener as a more controlled and articulate, less “boomy” or “muddy” listening environment.

***Be sure to measure prior to ordering to ensure products will fit.**

Best regards,

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