The dimensions and construction materials of a room determine its acoustic qualities, which influence the propagation and behavior of sound. These parameters can be encoded into an impulse response, the sonic fingerprint of a venue that dictates its frequency bias and reverberant characteristics. This project explores methodologies of capturing a space’s impulse response and constructs a comprehensive procedure for measuring Sursa Performance Hall at Ball State University. These measurements are also integrated into industry-standard convolution reverb plugins, enabling audio engineers to utilize and recreate the acoustic characteristics of the facility at any time.