

ReS, Resonant String Shell: Development of an Acoustic Shell for Outdoor Chamber Music Concerts

Authors : Serafino Di Rosario

Abstract : ReS is a sustainable hand-built temporary acoustic shell, developed since 2011 and built during the architectural workshop at Villa Pennisi in Musica in Acireale, Sicily, each year since 2012. The design concept aims to provide a portable structure by reducing the on-site construction problems and the skills required by the builders together with maximizing the acoustic performance for the audience and the musicians. The shell is built using only wood, recycled for the most part, and can be built and dismantled by non-specialized workers in just three days. This paper describes the research process, which spans over four years and presents the final results in form of acoustic simulations performed by acoustic modeling software and real world measurements. ReS is developed by the ReS team who has been presented with the Peter Lord Award in 2015 by the Institute of Acoustics in the UK.

Keywords : acoustic shell, outdoor natural amplification, computational design, room acoustics

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