

# Filling Vessels Project Description

**Filling Vessels** is a multi-channel sound and light performance/installation dependent on interaction with feedback generated in the installation space itself. The installation functions as a audience-navigable space, in which people can explore the effect they have on the sonic and visual events that take place within it, and as a performance environment, within which musicians use their instruments to interact with and influence the resultant combinations of sound and light.

**Filling Vessels** consists of a room with eight speakers and, when it is a performance rather than an installation, there are four musicians. Four large speakers ring the room's edges, and produce feedback sounds that change based on how the audience inhabits the space and how the performers play. Four small speakers are dispersed throughout the space and are activated by shifts in the frequencies (both in pitch and volume) of the feedback tones and by tracking audience movement in the space. The performers seek the resonant frequencies of the room that are reinforced through natural acoustical feedback. Their search for these frequencies are recorded, excerpted and sorted according to frequency analysis via Max/MSP, and played through the small speakers. The stored samples are selected for playback based on the frequencies, produced through feedback, present in the room. The small speakers are activated through audience movement in the space. The sampled sounds in the small speakers become rhythmicized, thereby forming melodies that are both dependent on the current interactions between performers, audience, and space, as well as the memory of previous relationships within the space. Furthermore, the sensitivity and amplification of the components of the system are moderated using Max/MSP and continually change in response to the resultant frequencies in the room. This enables different feedback tones to emerge, creating perpetually shifting patterns that simultaneously remain dependent on interrelationships between the space and its occupants. The shifting relationships between the components of the system present a digital intervention in an analog process—the feedback itself. Such an intervention reveals not only how the space itself sounds, but how the sounds themselves are endlessly mediated both by digital and human presence and interaction in the room.

The installation space is illuminated by video projection and small lights that respond to the frequencies present in the room. The video, comprising multiple images of reflected light within the space, is projected either on the ceiling or two opposing walls of the performance space. The processing and looping of the video is determined by the pitch, amplitude, and timbre of the sounds in the room, thereby enabling visual rhythms to arise in response to the sonic interactions. The small lights within the room (LED-driven lamps encasing the small speakers) punctuate the visual space. The lights are triggered by the selected sounds running through the small speakers and, during performance, by the volume of each individual performer's instrument. The resultant visual texture creates an interdependence of sound and light affected by the interactions between the space's acoustical and visual qualities and the people within it. The perpetually shifting and evolving sonic and visual textures highlight how space mediates the interactions that take place within it, and in so doing, allow unique and endlessly fluctuating musical and visual structures to emerge.

**Filling Vessels** is a visual and sonic exploration of the interactions between the audience, the performers, and the acoustical properties of the performance space itself.

**Filling Vessels** is indebted to Alvin Lucier's pioneering work with feedback, and we would like to acknowledge his piece *Empty Vessels* as an inspiration for the development of this piece. **Filling Vessels** has been developed with the generous support of the Studio für Elektroakustische Musik und Klangkunst of the Universität der Künste--Berlin, the Fulbright Kommission in Berlin, through the NYSCA sponsored artist residency program at Rensselaer Polytechnic Institute's iEAR Studios, and the Music Department at New York University—GSAS. Special thanks to performers Amanda Pepping, Jennifer Porto, Daniella Strasfogel, Jeremy Woodruff, Travis Just, Jenny Walsh, and Keith O'Brien. Many thanks to Martin Supper, Peter Castine, Elizabeth Hoffman, Pauline Oliveros, amoebazoid, William Lindsay, and vodstrup for technical assistance and guidance throughout the development of **Filling Vessels**.

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