

LOST OSCILLATIONS: EXPLORING A CITY'S SPACE AND TIME WITH AN INTERACTIVE AUDITORY ART INSTALLATION

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ABSTRACT

Lost Oscillations is a spatio-temporal sound art installation that allows users to explore the past and present of a city's soundscape. Participants are positioned in the center of an octophonic speaker array; situated in the middle of the array is a touch-sensitive user interface. The user interface is a stylized representation of a map of Christchurch, New Zealand, with electrodes placed throughout the map. Upon touching an electrode, one of many sound recordings made at the electrode's real-world location is chosen and played; users must stay in contact with the electrodes in order for the sounds to continue playing, requiring commitment from users in order to explore the soundscape. The sound recordings have been chosen to represent Christchurch's development throughout its history, allowing participants to explore the evolution of the city from the early 20th Century through to its post-earthquake reconstruction. This paper discusses the motivations for *Lost Oscillations* before presenting the installation's design, development, and presentation.

1. INTRODUCTION AND MOTIVATIONS

Sound archives allow dedicated researchers access primary sources associated with the history of a place and the events which shaped it. By engaging in a longitudinal listening survey, as a kind of sonic archeology, researchers may unearth the development of a place, but also vicariously experience significant events that have affected an area over the course of its (phonographic) history. Those persons less able or inclined to peruse large amounts of recorded material, they may be largely unaware of the sonic stratigraphy upon which they live. One use of auditory display in an artistic installation context is to convey this sonic history to the public in an affectively compelling and aesthetically-motivated manner.

This paper explores one such sonic artwork, the interactive *Lost Oscillations* installation. Installed in Christchurch, New Zealand in October, 2015, *Lost Oscillations* allows participants to engage in a multi-sensory exploration of recorded events throughout the last eight decades of Christchurch's history.

In informal contemporary dialog, Christchurch's history prior to the 2010 and 2011 Canterbury earthquakes is muted: the earthquakes function as a sort of 'event horizon,' and there is little dis-

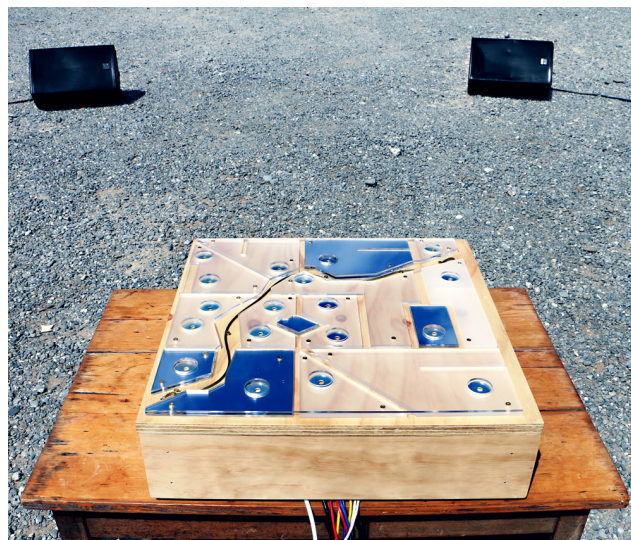


Figure 1: The purpose-built *Lost Oscillations* user interface, shown with two of its eight loudspeakers.

ussion of events preceding them. A key goal of *Lost Oscillations* is to slip past these traumatic events, allowing those interacting with the artwork to engage, through touch and listening, with Christchurch in a context that largely focuses on its pre-earthquake history. A tactile, multi-user interactive interface (shown in Figure 1) was chosen as the means by which participants may engage with an array of archival recordings. This decision was arrived at both to allow communal experience of sonic history and to emphasize embodied connection, through sound and touch, to sonic place. To further provide those visiting the artwork with an immersive, mixed reality, site-specific auditory experience, sounds triggered from the interface are output to an eight-channel loudspeaker array. This octophonic array spatializes the sounds relative to the installation's central-Christchurch location: sounds recorded in locations to the north of the installation space, for example, are output to northward-located loudspeakers.

The remainder of this paper provides a technical and aesthetic overview of *Lost Oscillations*. It begins with a discussion of related works, presenting a number of pieces whose usage of interface design and artistic aesthetic were influential in the artwork's initial conception and development. Following the review of related works, an overview of the design, development, and construction of *Lost Oscillations* is provided. Section 3.3 discusses



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