Chapter 6
Sustainable Cinema:
The Moving Image Created by Natural Force

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ABSTRACT

Beyond mere inspiration, a subset of artists have given the natural world a more influential role in the outcome of their work. By harnessing the physics, biology, and ecology of the natural environment as artistic tools, they have used natural phenomena as a co-creator in their art-making practices. This use of natural force impacting the actual form of an artwork can also extend into moving image arts. Sustainable Cinema is a series of kinetic public sculptures that merge natural power sources with early optical illusions to create a moving image. The variations within this series now cover seven distinct image generating systems, multiple animation narratives, and several alternative energy sources. This chapter reviews each sculpture in form, content and site and discusses how collectively they create a case study for a larger perspective on culture's relationship with the forces of nature and the materiality of the moving image.

INTRODUCTION

Sustainable Cinema is a series of kinetic public sculptures created between 2009-2017 that each use natural power to generate the moving image. The works are faux-historical, devices that use wind, water and pedal/hand power presented as artifacts of cinema history. The fiction inherent in the sculptures becomes the context to view how artists and society have viewed the evolving relationship with forces in nature. Within art's trajectory, several artists have embraced the natural and organic beginnings of their mediums and allowed natural energy to write upon their works as a co-author. When placed parallel with the evolving global perspectives on the natural environment, a relationship emerges that creates a deeper context for the artworks and a clearer understanding of cultural views on nature.

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Figure 1. "The Image Mill" at night, Gerald R. Ford Presidential Museum, Grand Rapids, Michigan
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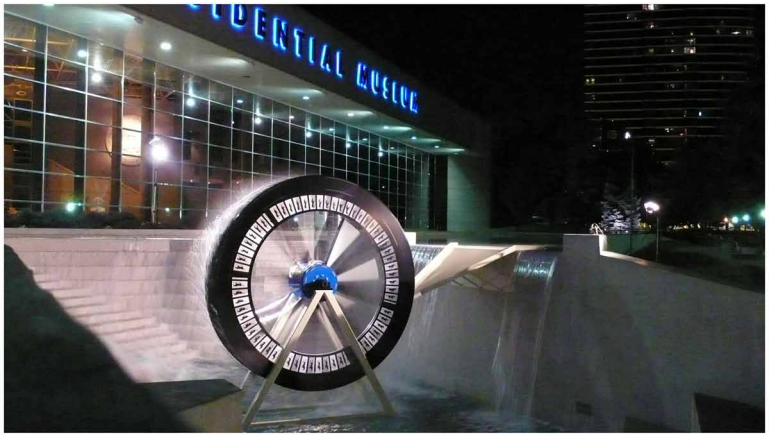

This chapter will follow a thread in which physics, biology, ecology and sustainable design have all played a part in moving image evolution for a subset of artists interested in natural processes and energy. This background will become the framework to review a series of seven large scale kinetic sculptures that directly address this history and present possible insight into larger issues regarding natural resource use.

BACKGROUND

The physics of optical illusions and electricity that led to the birth of the modern cinema were seen as natural phenomena harnessed and tamed by man. The earliest media presentation systems utilized biological skins and fibers, but even when industrialized cinema still included organic materials for its first hundred years including the silver woven into the silk screens and celluloid made from plants and animals. A 1960's confluence of Expanded Cinema, Land Art and the ecology movement created an interest in systems that celebrated site-specific time-based media and environmentally-conscious artworks. More recently, artists are seeking to use the forces found nature in ways that do not diminish them yet still benefit us. Once again the moving image will reflect society's shifting views on the environment, but this time with an emphasis on sustainability.

Natural Phenomena: The Moving Image and Physics

Early moving image media had their origins in scientific experimentation in physics. Early optics was viewed as occurring outside of the body, images were 'projected' onto viewers' eyes by invisible natural phenomena. Optics follows a heritage spanning Aristotle, Bacon and Da Vinci that involved research in light, lenses, shadow and reflection. Combining these elements into the principles of mediated projection appeared as early as *Ars Magna Lucis et Umbrae* written by Athanasius Kircher in 1645 (Gorman, 2001). The scholar explored the creation of images by sunlight, mirrors and lenticular lenses while his Cato trophic lamp made advances in the emerging technology of magic lanterns.

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