

Abstract

THESIS: Strategies and Methods for Using Aesthetics to Integrate Renewable Energy into Regions, Urban Areas, and Campus Communities

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As the world's energy demand increases, it is generally known that conventional energy systems will not sustain future civilizations without repercussions to human and environmental health. Transitioning from current energy systems to those with renewable sources will be challenging and will potentially alter landscape aesthetics. However, the design of renewable technology can minimize adverse effects and can even improve the quality of living in addition to producing electricity. Wind turbines located so that landscape quality is preserved, electricity generators embedded in play equipment, or the use of solar panels to shelter people are examples of how renewable technology has been aesthetically used to improve the quality of life.

To test these new ideas, this research thesis searched for examples of how landscape architects can use aesthetics to integrate renewable energy into three types of locations: regions, urban areas, and university campuses. In chapter one, analyses of methods from the Western Renewable Energy Zones (WREZ) initiative in the United States and the South Limburg project in the Netherlands reveal examples of how landscape architects can use

aesthetics in visual impact studies and scenarios, which help integrate renewable energy into regions. In chapter two, an analysis of urban renewable energy projects resulted in a series of strategies for using aesthetics and amenities that landscape architects can apply to urban projects which utilize renewable technology. Chapter three presents results from a study of a design for the Ball State University campus in Muncie, Indiana, which produced a method for how landscape architects can use renewable energy products as aesthetic and unique sources of energy generation for a campus community.

The subject of renewable energy is developing in the field of landscape architecture, and this research asserts that the use of aesthetics and amenities is a viable method for integrating renewable technology into landscapes. Using readily available products or customizing technology to fit the needs of a project are two options for designers who work with renewable energy to provide aesthetics and amenities. The consideration of both regional and urban scales is important to developing reliable renewable energy systems and a better quality of life.