



Original research article

Native American storytelling toward symbiosis and sustainable design

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ABSTRACT

In Native American traditions, humans are viewed as part of the natural system. Thus, all forms of life are related to humans and must be treated with equal respect. Legends, ceremonies, songs, dances, arts, and stories are integrated parts of the spiritual system, instructing people on how to behave with each other and the environment. This perspective piece discusses the role of Native American oral tradition as it relates to Traditional Ecological Knowledge that has been carried through generations, as a means of understanding Native Americans' role and responsibility to the earth and its resources. The paper also reviews communal intelligence and Native American sustainable design with the aim of translating such knowledge to contemporary aspects of sustainability and green design. Critical thought of the foundations of current day sustainable guidelines and ordinances is needed, along with the application of Seventh Generation Teachings and a move toward a regional perspective of defining sustainability. Finally, this paper is a call for additional nuanced research in the discovery of Traditional Environmental Knowledge held by many Native Americans, to better understand the fragile nature of humans' relationship to the earth and its provisions and its application to sustainable design paradigms today.

“Mitakuya Oyasin”

Lakota phrase meaning *We are all related*

1. Introduction

Native American storytelling lies at the heart of the communal tradition, one of learning about life through participation and relationship in the community with people, plants, and the whole of Nature [1]. The synergistic approaches to nature by Native Americans are respectful and timeless in essence [2], lending to the practical understanding and application of such principals for sustainable design through the lens of narration and Native American heritage. This perspective piece discusses the oral traditions of Native Americans, to uncover themed perspectives of climate and ecology for deeper knowledge of contemporary sustainable design and environmentalism. The aim of this study is to translate such vernacular knowledge and the modes by which generational intelligence is shared to inform fundamentals of sustainable development practices and conservation in relation to current-day notions of green building design.

2. Methodology

The authors researched modes and methods of Native American

storytelling along with a survey of sustainable building projects in tribal communities in the last two decades. Overall design intentions in these case studies, including construction practices, material use and regional and social implications, are assessed for thematic overlaps and are correlated with the oral and written history of various tribes. The observations in this paper are not totalizing to all Native American tribes, as there exist a wide range of beliefs and practices. However, the authors seek to unpack and inform sustainable design theory and practices with themed Indigenous perspectives of tribes in North America. Further examination and quantification of the state or progression of contemporary tribal sustainable building projects would benefit the perspectives presented, and has been reserved for future investigation.

3. Storytelling for communal wisdom

Native American storytelling offers outlooks of how people can become better human beings with guidance, reflection, balance and wholeness through the lessons shared by elders. It can be a powerful remedy for healing alienation, relaying historic events and fostering collective welfare as a critical backbone of Indigenous societies through time and across borders. Whether through means of song or dance, or traditional storytelling, oral history has been a carrier of truths and origins. Native American's recognize that the sharing of stories is a

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holistic process that engages the body, spirit and mind, to help make sense of one's experiences. Listening to stories around differences of opinion cultivates empathy and understanding, broadens knowledge and has the power to disrupt stereotypes [3].

Native American storytelling pedagogy uses reflective, inductive learning. Listeners can discover on their own what lessons they learn [4]. Reflecting on the material helps readers and listeners attain higher levels of intellectual learning about the content [5]; in other words, reflexive learning helps students realize shared perspectives [6], which can invoke critical thinking about the content. Native stories do not assume clearly defined lessons of morality. Instead, they tend to be non-linear and express the chaos in their point of view. It is through the chaotic experiences of Native characters in these stories that listeners may learn through a metaphysical worldview. Such perspectives emphasize and encourage the interdependence with all things. Inward thinking in this way affords respect and value for community and environment [7]. In addition, Native American storytelling is a collaborative and non-hierarchical process that involves the listeners as active agents in the learning process rather than passive receivers through an experiential mode of direct observation. Creation stories, for example, are unique to tribes and exemplify the importance of storytelling and human genesis. These stories contain plots that present a problem and its solution while explaining the relationship between humans and nature and take a fluid perspective on life, death and rebirth. Often, animals and humans are interchanged in creation stories and provide a basis of birth and connection to the earth. For example, the creation story of North America for the Ojibwe and Anishinaabe tribes, as well as versions found within many other tribes, relay folklore of a world flood concept, a conversation and collaboration with animals and spirits, leading to a new earth formed on the back of a turtle to create "Turtle Island." The purpose of creation stories is to explain the workings of the natural world as well as describing earth as not only a sustainer of life, but as the original source of all life [8,9].

The conflation of time past and present is a method of storytelling where personal memories are always seen through a collective perspective, usually in the form of stories that tell people who they are and who they have been [10]. Many Indigenous Peoples see the land as having a presence, with a multitude of entities that carry intelligence and personality. For many Native Americans, "the land is not just a collection of objects you do things to, nor is it merely a place you do things in, a stage-set for human action...People and the land hold a dialogue within the structure of ritual, in order to ensure balance and harmony" [11]. This notion of conversing with the earth prior to taking actions is a thematic aspect of Native Americans' relationship with the land – that one does not merely have the privilege to do to the earth as one desires; and that humans must pay homage to mother earth's active and passive intellect as one of many creatures depending on its wealth.

4. Native American interpretations and implementation of sustainable design

With 566 distinct federally recognized tribes [12], a common core principal of Native Americans' is the respect for land and its resources, as often shared by folkloric tradition. The land ethic focuses on stewardship and kinship of the environment rather than its dominion and implores the equality of all species [13]. Aspects of a subsistence culture also shaped views of land use and limited depletion of resources by only utilizing the earth for survival. This historical perspective has manifested into design philosophies and movements, including Tribal clean energy programs, sustainable community strategies and locally farmed food sources. In application to modern building technology, there exists a desire for homes and communities to be self-sufficient and not rely on non-Native materials, heavily gridded infrastructure or imported foods. Case studies of tribal housing projects including the Penobscot Indian Nation, the Pinoleville Pomo Nation and the Northern Cheyenne Nations, among others, have employed green practices as an

extension of cultural values of bridging nature and community. Homes are often built with tradition materials and methods, including straw-bale, adobe and mud plaster, and also include innovated materials, such as solid fiber reinforced aerated fly-ash concrete material, along with renewable energy sources most practical within local contexts [14].

The Sustainable Native Communities Collaborative, an initiative through Enterprise Community Partners, has highlighted several exemplary sustainable tribal housing projects. A Native sense of place to natural and physical worlds and value of interconnectedness is evident in many of the defined projects. The small land base of many reservations, combined with the high cost of infrastructure, has lent to a return to a traditional arrangement of homes surrounding common areas, as appropriate to each community. Low-impact design maintains a rural feel and places the homes closer together to reduce infrastructure costs and improve protection of natural habitats and is a tenet of many project sites and developments on tribal lands [14]. These designs offer a contemporary perspective following virtues of preservationist tribal spirit by linking modernity to aspects of subsistence societies.

Other organizations promoting sustainable design have both governmental and institutional partnerships. For instance, Sustainable Construction in Indian Country (SCinIC) is an effort that was funded under the U.S. Department of Housing and Urban Development (HUD) Offices of Policy Development and Research. Between 2011 and 2013, the SCinIC provided technical assistance that promoted understanding about the benefits of construction technologies on tribal lands, and created demonstration projects that were culturally sensitive to mainland and Alaskan Native tribes. Another partnership between the University of Colorado (CU) and the Native American Sustainable Housing Initiative (NASHI) seeks to improve housing conditions on tribal lands through research, education and outreach activities. CU Environmental Design students have worked with students from the Oglala Lakota College (OLC) on Pine Ridge who are studying Construction Technology to offer a project called "Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation." These disciplined research and implementation programs have found rich information on barriers of understanding and resources for future development of sustainable housing in Indian Lands, and provide recommendations on new perspectives and deeper understanding of contemporary green development and financing resources for Native American communities [15]. These programs are only several examples related to Native American sustainable design, which has seen an increase in research and applicability since the resurgence of the environmental movement in the United States.

5. Perspectives on ecological narratives

Relying on the fundamentals of generational wisdom can be a bridge between traditional knowledge and current green trends for many Native American communities, as well as a lesson shared for the larger building and development industries. This is especially critical regarding the global enterprises of sustainable rating systems and programs that are now setting benchmarks and definitions of built environmental sustainability.

However, the rhetoric of sustainable design and greening, while altruistic in theory, do come at a price point and have become a profit generating mechanism in the building and construction industry. We argue that the roots of these programs be addressed, that the foundations of present-day sustainable environmental design impress upon all aspects of environmental stewardship and sustainable living as advocated by Native Americans for generations. The stories of the Native Americans epitomize the symbiosis of humanity and earth, and therefore must be considered as a key component in improvement of buildings and societies toward a sustainable future. These stories emphasize doing good as well as limiting harm, which have now been harnessed by versions of sustainable design codes and certifications as these have improved over time. In addition, the belief of co-existing

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