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High-Tech Totem Pole

David William Hazel
Worcester Polytechnic Institute

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High-Tech Totem Pole

An Interactive Qualifying Project
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfilment of the requirements for the
degree of Bachelor of Science

by
Brian Baggaley
Dave Hazel
Max Kinney
David Rubenstein
Dan Sanderson

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20 March 2015

Report Submitted to:

Professors Brigitte Servatius and Tahar El-Korchi
Worcester Polytechnic Institute

This report represents work of WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its web site without editorial or peer review. For more information about the projects program at WPI, see <http://www.wpi.edu/Academics/Projects>.

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CHAPTER 2: TOTEM POLE RESEARCH

Inspiration for the Project

Wendy Wacko, a landscape artist in the Canadian Rockies (Wacko, n.d.) dreams of creating a totem pole as large as the famous Haida Totems (Bedford, 1998). The totem pole will not be made of wood, but concrete to be translucent and lit from within so that the totem is transformed as day changes to night. The problem with this idea is not only the high cost of glass, but also its high melting temperature, weight, and fragility. We investigate the feasibility of using concrete with embedded optical fibers to realize Wendy's idea.

Northwest Coast Native American Culture before European Colonization

There were 30 tribes in the Northwest of North America, each with an average of 8000 members, before European Colonization occurred in 1774 (Miller, 2014). Wealth of tribes, families, and individuals were based on goods and tribal hierarchy (Halpin, 1981). Mythology was an essential part of Northwest Coast Native American culture. Each tribe had its own beliefs and mythologies about the creation of the world. Respectively, families within a tribe had stories particular to their family history. Mythology was preserved through oral tradition and carving of totem poles.

Mythology was written on totem poles in the form of crests and symbols that depicted the power that the family held within the tribe (Halpin, 1981). In Figure 1, an eagle is represented on the top of a Haida totem pole. As stated by Ruth Schiffmann, every animal and person had a specific meaning.

An eagle was used to portray power, courage, and wisdom. The raven showed curiosity, deception, and trickery. A fox symbolized cunning, agility, and wildness, while a frog expressed peacefulness, adaptability, and hidden beauty. Human figures were used, too, like the watchman at the top of a totem pole put there to look over the village. Each tribe or clan spoke a different language and carved in a different style. For that reason, each totem pole portrayed the unique identity of the tribe it came from (Schiffmann, 2009).



Figure 1: Haida Totem Pole. From Lions Lookout Park, White Rock, British Columbia, Canada (Mabel, 2013). Retrieved from http://commons.wikimedia.org/wiki/File:White_Rock,_BC_-_Haida_totem_pole_01.jpg

Totem Pole Creation

Totem poles made by the Northwestern Coast tribes were primarily created from western red cedar trees because of its malleability and abundance within the area (Indigenous Foundations). Red cedar is known for its height and durability (Meier, 2014). This tree is considered a hard wood because red cedar has broad leaves, and becomes dormant in the winter (American Hardwoods, 2007). For totem pole creation, red cedar trees were to be cut down and stripped of their bark (Dearborn, 2002). Totem poles were carved using chisels, stone blades, adzes (a hand tool for shaping wood), bones, antlers, shells, and wood (Adz, 2015). Colors used to paint totem poles came from earth pigments. The most common colors were black and red, as they were most available to the tribes of the Northwest Coast. However, colors such as blue, blue-green, white, and yellow were also used. The binding of the pigments was done with salmon eggs and various materials. To create black, salmon eggs were mixed with charred wood or bone. Red was created by mixing salmon eggs with crushed rocks that contained iron. The painting was done with porcupine-hair brushes (Peters, 2009). Figure 2 shows a totem pole based on only 3 colors, black, red, and white.



Figure 2: Replica Totem Pole. From The University of British Columbia, Museum of Anthropology in Vancouver, Canada (Leoboudv, 2012). Retrieved from [http://commons.wikimedia.org/wiki/File:Haida_replica_totem_pole_\(UBC_Museum\).jpg](http://commons.wikimedia.org/wiki/File:Haida_replica_totem_pole_(UBC_Museum).jpg)

CHAPTER 2.1: ART

Significance of Sculptures throughout History

In the earliest days of recorded art, figurines and small statues were constructed to display portraits of high priests or gods. Statuette of a Man, shown in Figure 3, is a thirteen inch tall figure representing “devotion and power” through its rigid and symmetrical stature (Worcester Art Museum, 1994).



Figure 3: A Mayan Figurine (c. 850 A.D.). From Worcester Art Museum (Worcester Art Museum, 2014). (pending copyright approval) Retrieved from [http://commons.wikimedia.org/wiki/File:Haida_replica_totem_pole_\(UBC_Museum\).jpg](http://commons.wikimedia.org/wiki/File:Haida_replica_totem_pole_(UBC_Museum).jpg)

Statuette of a Man is a Mesopotamian piece is dated between 3000-2500 B.C. The body is made out of limestone while the eyes are made from shell. . This sculpture exhibits simplicity while having a powerful meaning to its people. Statuette of a Man has minimal coloring due to the aforementioned materials. However, its “squared arms and tightly clasped hands add to the figure’s strength” (Worcester Art Museum, 1994).

The Mayan culture adopted limestone as a primary material for sculptures, similar to the Mesopotamians. The Carved Column stands at 69 inches, located in the Worcester Art Museum, Worcester, Massachusetts. This structure stood in a Mayan courtyard as “public testimony to [Mayan] divine authority” (~850 AD). Most Mayan structures commemorate rulers by demonstrating their power, or successes over a lifetime (Worcester Art Museum, 1994).

By the 6th century, the Greeks were using bronze in their art. Six-inch high soldier figurines symbolize the Greek’s powerful military, represented in Figure 4. The warrior, at one point, carried a spear and shield that could be separated from the figure (Worcester Art Museum, 1994).

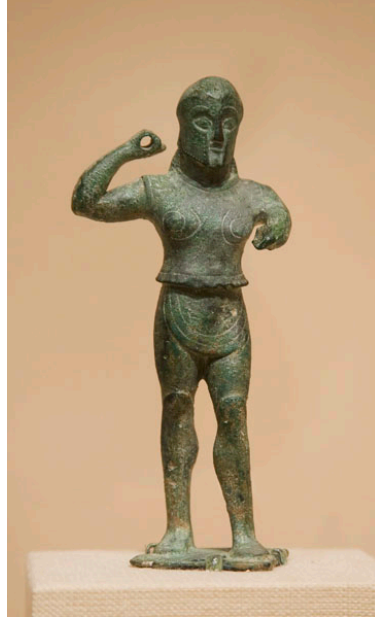


Figure 4: A Greek Warrior (c. 6th century). From Worcester Art Museum, Worcester, Massachusetts (Worcester Art Museum, 2014). (pending copyright approval)
<http://www.worcesterart.org/collection/Ancient/1936.45.html>

Defining Art in Public Spaces

Public art is not restricted to any specific medium, nor does it have any defined means of creation. It can be large or small, realistic or abstract, contrast the environment or fit right in, and public art can be in the form of a mural, sculpture, or structure (Encyclopedia of Art, n.d.). Public art is defined by:

Public art is an umbrella term which includes any work of art purchased with public funds, or which comes into the public domain (by donation, or by public display, etc.) irrespective of where it is situated in the community, or who sees it (Encyclopedia of Art, n.d.).

There are two categories of public art, transient and permanent. Haida totem poles are considered permanent art because it remained in the same location for an extended period of time. Transient art is temporary and only lasts as long as the environment for it persists. The totem pole proposed by Wendy Wacko is an example of permanent art. The totem pole is to remain at the same location for an extended period of time (Coutts, 2008). Places with public art have seen decreased crime rates and a positive outcome in public opinion. Elizabeth Strong-Cuevas said the following about this topic, “Art in public spaces has a

civilizing affect on a community; it promotes good behavior, whereas dilapidated and deteriorated public areas tend to invite vandalism and become havens for illegal activities.” (Sussman, 2013)

This was the case in New York City where government representative, Henry Stern, redesigned Bryant Park with the addition of sculptures. Before the redesign, drug dealers and violent criminals occupied the park. After, the park was a cultural destination for New Yorkers and tourists alike (Sussman, 2013).

The installation of public art serves the community. People gain a positive outlook on the area, and their cultural experience is expanded. The art actively gives back to the community. Artists get to represent the culture of the area by installing art that captures a unique idea. The artist can reaffirm what the public is feeling and apply this into the real world (Sussman, 2013). According to Sussman, public art should not discourage any group, nor insult the different cultures of the local people. Public art can separate a community or easily bring it together, depending on the message sent by the artist. For example, totem poles of the Haida Native American Tribes act as a historical record as well as an embodiment of the tribe’s beliefs. Art in public is capable of passing down culture and ideals through generations (Sussman, 2013).

In the United States the Statue of Liberty stands as a universal symbol of freedom and democracy, passing down core beliefs of the country (National Park Service, 2015). Michelangelo's David was crafted to have the viewer be at ground level looking upwards 14 ft. The statue’s head is larger than natural, and the right hand is also disproportionately oversized although not seen from the ground (Michelangelo's David, c. 1501-1504). The viewers’ perspective will alter how they perceive art.

The Influence of Technology on Art

Technology has made the world more accessible, giving artists more options to express thoughts and ideas through art. For example, artist David Hockney paints using an iPad, which he considers a new medium for many to explore (Hockney, 2015). Hockney successfully creates art that is seen as innovative.

Technology has facilitated the access to inspiration. For example, the internet helps to distribute and display art. Web sites allow artists to display their artwork in different mediums, varying from sketches to photography to comics. People are able to view artwork, provide feedback, and add suggestions on ways to improve.

Visual Art in Worcester

Communities have organizations devoted to creating public art. The Public Art Working Group (PAWG) creates plans to enrich the culture and aesthetics of Worcester, Massachusetts by installing public art. Current projects undertaken by the PAWG involve: mapping out public art in Worcester, finding new locations for public art installations, commissioning large-scale public

art, and involving local artists in creating public art, represented in Figure 5 (Worcestermass.org, 2015).

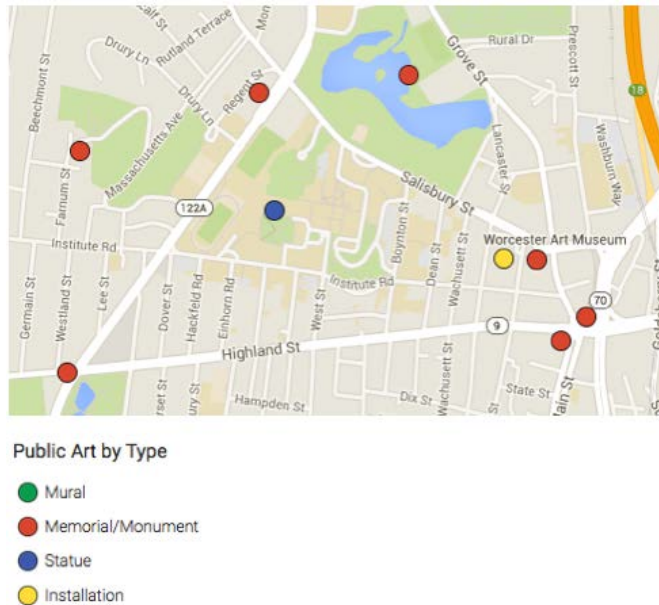


Figure 5: Public Art Catalogue around Worcester Polytechnic Institute. From Public Art Working Group (Worcestermass.org, 2015). Retrieved from <http://www.worcestermass.org/arts-culture-entertainment/public-art> (See: Multi-pronged approach)

WPI has integrated public art on campus. Figures 6 and 7, respectively, display art produced by Stephen Knapp during the day and night (Worcester Polytechnic Institute, 2014). The design is a tribute to WPI’s commitment to being an environmentally conscious community (2014).



Figure 6: Lightpainting. From Gordon C. Library, Worcester Polytechnic Institute (The Daily Herd, 2014). Retrieved from <http://wp.wpi.edu/dailyherd/2014/05/05/lightpainting/>



Figure 7: Lightpainting. From Gordon C. Library, Worcester Polytechnic Institute. Photo taken by the author.

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DOCUMENT DESCRIPTION

This document contains one chapter that covers the background research for the High-Tech totem pole Interactive Qualifying Project at Worcester Polytechnic Institute over the span of August 2014 to March 2015. This project is a work in progress. This submission covers only a portion of the final paper, due to registration issues. The report, as a whole, is scheduled to be submitted by May 2015.