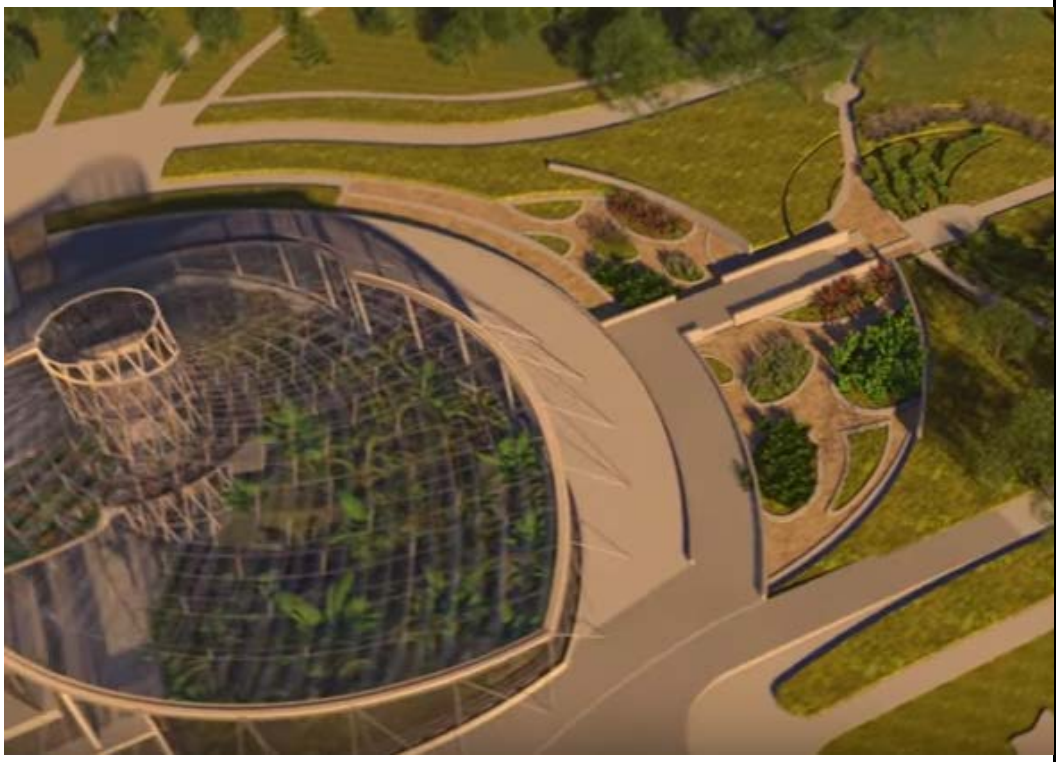
Environmental sustainability examples

Cheyenne Thomas (Peguis First Nation) is a graduate of the University of Manitoba's environmental design program. Together with her father, architect David Thomas, they will head the design of the Indigenous People's Garden in Assiniboine Park. The garden will be part of a large-scale system which includes "The Leaf," essentially a giant greenhouse that uses solar and geothermal energy to keep plants growing all year round.

Could Anishinaabe arcs be used for a greenhouse design? How would you regulate airflow? Water?

According to Cheyenne, indigenous design is "one of the most innovative ways of thinking of the environment" because it guides the system in ways that bring human and natural forces into a balanced relationship.



In 2012, brothers **Kaben and Shelby Smallwood**, members of the Choctaw Nation of Oklahoma, launched a new business to help low-income communities raise food and conserve precious water resources using aquaponics. “We pump water from the fish tank, which contains the fish emulsion, into the greenhouse, where plants and a grow bed are flooded with this nutrient-rich water.”

Symbiosis, in which one organism benefits another, is traditional to native economies. But no one--not even the Smallwood brothers--has applied native architectures to aquaponics.

How might someone use arc structures for the greenhouse, lighting, troughs, or other components? Could that have advantages over flat roofs or square tanks?

Rain catchment--structures that catch the rain before it falls to earth--can deliver clean water for humans and gardens, prevent flooding, and compensate for droughts. **Latoya Nelson**, a professor of design at the Pratt Institute, drew on her African heritage in using fractals (patterns that repeat at different scales) to design a rain catchment system for a community with primarily African descent in Brazil.

Rain catchment was used for centuries by native americans. The Zuni, for example, created stone walls which slowed runoff long enough for it to permeate the dirt; creating moist rich soil in which to grow crops.

Could anishinaabe arcs be used to design a rain catchment system? Would you make it in the earth, like the Zuni system, or overhead, like Nelson's design?

In a google doc answers: How does your design relate to your career path? Your family or community? And, your own interests and future goals?