PARK DISTRICT of OAK PARK

AUSTIN GARDENS ENVIRONMENTAL EDUCATION CENTER

SUSTAINABLE FEATURES

Geothermal/Ground Source Heat Pump

- Two, 500' deep vertical wells were dug below the building
- This closed loop system uses underground continuous piping loops that are filled with an anti-freeze-like liquid that helps transfer the ground temperature to the geothermal heat pump.
- **Uses the earth's constant temperature, approximately 55 degrees year-round, to provide heating and cooling.**

Solar Photo-voltaic System

- Features a solar array of 19.6 kW
- 70, 280-watt panels with micro inverters are mounted to the standing seam metal roof.
- The Park District can monitor the power output of each individual panel from a web-based program.
- **The goal is to generate enough power to offset the building's usage—Net-Zero Energy**.

Rain Water Harvesting System with Cistern

- The 1500 gallon cistern collects rain water from the roof to be used for flushing toilets and irrigating the lawn.
- Includes a day tank inside the building where the water is treated with ultraviolet light prior to usage.
- The cistern overflow feeds a nearby rain garden
- **The building has no need for storm water treatment by the Metropolitan Water Reclamation District**.

Highly Efficient Building Envelope

- The windows are triple glazed for optimal rating.
- The base envelope design is similar to passive house ratings.
- Insulation in the roof is > R 60 Value
- Exterior Walls are > R 40 Value, minimum of 8.5" of insulation in all walls.
- The building foundation and slab has 3" to 4 ½" of rigid insulation.
- **The tighter building envelope results in lower energy needed to heat and cool the building**.

Exterior Features

- Two rain gardens on either side of the building accept the extra rain water from the roof that is not collected in the cistern. These rain gardens are a big reason for our independence from a storm system connection.
- Low mow/No mow areas with native grasses provide a sustainable area that requires little maintenance as well as natural beauty.
- All plantings are native to the area and are designed to thrive in the environment they are planted in.
- 500 square foot green roof on lower roof section. This has many important features for both water and environmental factors. There are 250 modules on the roof and they not only hold rain water, but clean the water before letting the excess go into the cistern. They produce oxygen, lower the heat on the roof, provide extra insulation, improve the performance of the nearby photo-voltaic system, are aesthetically pleasing, prolong the life of the roof, reduce storm water, improve the urban heat island effect and more.

Urban Timber Re-use

- The Park District removed three large ash trees from Rehm Park last fall due to Emerald Ash Borer. Fortunately, we were able to salvage the wood from those trees to mill into the interior trim of the AGEEC. The trees would normally be ground into mulch and only last a few short years, but these trees will remain inside the building for the life of the center.