

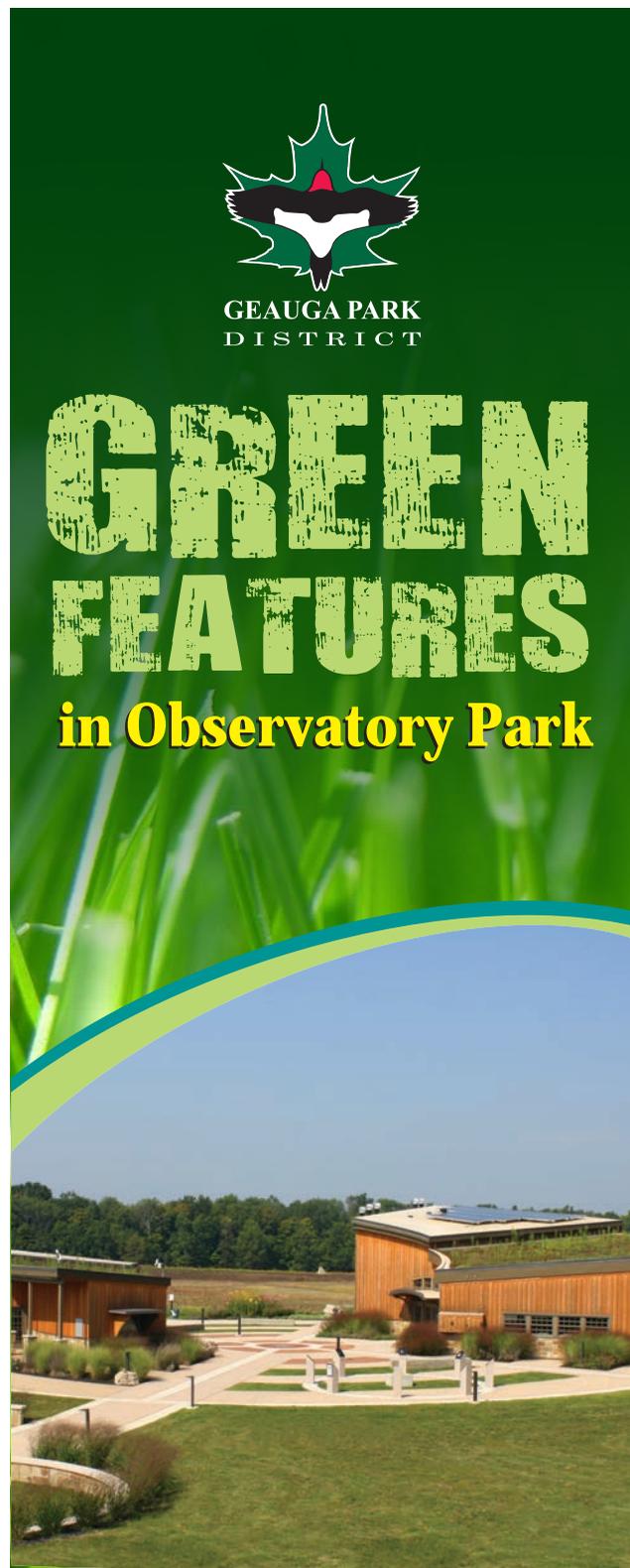
# Welcome to Observatory Park

Observatory Park is a 1,100-acre parcel that protects the headwaters of the Cuyahoga River, rare and endangered species of plants and animals, and the dark sky over Geauga County, having earned the distinguished designation as a Silver Tier International Dark Sky Park. Forested areas are joined with wetlands, meadows and shrublands that all contribute to biodiversity. The endangered swamp red currant, the uncommon Five-lined Skink, rare dragonflies and other unique species find sanctuary here. Within the central plaza, find the Oberle Observatory with its telescope and weather and seismic station; the Robert McCullough Science Center with its planetarium for programs about astronomy and the night sky; and access to trails featuring interpretive exhibits about weather and the planets to historical features such as henge stones and the corners of The Great Pyramid of Giza.

Observatory Park  
10610 Clay Street · Montville, Ohio 44064



[www.geaugaparkdistrict.org](http://www.geaugaparkdistrict.org)



Decisions were made early in the planning of Observatory Park to incorporate green features and alternative forms of energy production into the construction of site and its buildings. Doing so minimized the long-term costs to power and maintain the buildings and lessened the impact of development on the site and its natural systems.



## Light Emitting Diode (LED) Lighting



All onsite lighting is LED lighting, which consumes less energy and has a much longer bulb life than incandescent bulbs. This means reduced costs powering and maintaining the park's lighting over time.



# What's On That Roof?



## Solar Arrays

The Robert McCullough Science Center includes a solar array, which consists of multiple photovoltaic modules that convert solar radiation (sunlight) into usable electricity. This renewable source of power also offsets electricity usage in the Oberle Observatory.

## Green Roofs

Both the Oberle Observatory and the McCullough Science Center are topped with green roofs. Green roofs have many benefits, particularly reducing storm water runoff. How? These roofs act like sponges, absorbing excess rain water. As water slowly percolates through the soil, plants filter the water before it returns to the aquifer.

## Benefits of Green Roofs

- Reduce indoor noise by up to 40 decibels
- Reduce fire risk by including succulent green plants
- Conserve energy by reducing indoor temperatures by 6-8 degrees and air conditioning costs by 25- 50%
- Act as a protective shield from the elements, preventing ultraviolet radiation and photo degradation of roofing components
- Reduce the "heat island" effect created by traditional asphalt roofs, leading to a potential 200-300 percent extension of the membrane life expectancy
- Reduce temperature fluctuations and bring roof temperatures in line with the ambient air temperature



## E-Loos

"E-Loos," are alternative toilets that require no water, electricity or additives to work. Constructed

of black polyethylene plastic to absorb the sun's heat, they use directed convective airflow to evaporate and dehydrate human waste. By not requiring water, sewer or a septic system, E-Loos minimize the need for park infrastructure and provide an environmentally friendly way to handle human waste.

## Rain Barrel

An underground cistern captures water from the green roofs and drains, while a rain barrel captures water from the downspout. Both systems can be utilized for watering plants and other routine outdoor maintenance parkwide.



## Vertical Axis Wind Turbine

The vertical axis wind turbine at Observatory Park is a 1Kw turbine designed for average wind speeds just over 10 mph. The UGE-1kw features an attractive design that looks more art-like than a traditional windmill. Vertical axis wind turbines are extremely quiet and easier than horizontal axis turbines for wildlife to avoid. Thanks to the grid-tie system, energy produced from the turbine is fed back into the local electrical grid – in a sense, "spinning the electric meter backwards." Both the wind turbine and the solar array are renewable energy sources that offset the park's needs.

## Turf Paver System

In the main parking area, a turf paver system was installed, rather than asphalt pavement, to minimize the amount of stormwater runoff on the parking areas. It can accommodate up to 100 cars. Turf pavers allow rainwater to percolate into the ground rather than run off into a storm drainage system. The turf also minimizes the "heat island" effect associated with asphalt and concrete pavement.



## On The Grounds



## Native Plants

Native plantings were utilized around the buildings at Observatory Park and its Central Plaza to eliminate the need for irrigation and lessen the long-term maintenance of the landscape, minimizing the need to mow and use fossil fuels.