

Plainfield Park District

PRAIRIE ACTIVITY & RECREATION CENTER (PARC) March 2024



Net Zero

Net
Zero

How PARC
Operates

Annual
Overview

Monthly
HVAC

Monthly
Lighting

Monthly
Plug Load

Monthly PV

Cumulative

Net Zero Energy

The PARC has been designed as a Net-Zero Energy building, incorporating the latest energy-efficient construction materials and an 18,000-sf series of solar roof panels which will generate enough energy to offset the building's utilities. It was the first Net Zero Energy park district designed building in Illinois.

1 Harvest energy onsite



662 solar panels – 542 on the roof, 68 on the parking lot canopy, and 52 on the solar awning – capturing clean, renewable energy that is converted to 391,972 kWh of energy per year.



Energy-producing treadmills that turn up to 74% of user-generated energy into clean, renewable energy.

2 Maximize energy efficiency through a high-performance building envelope



Airtight insulation with R-values R-28.25 to R-60 – the higher the R-value, the higher the insulating effectiveness.



Triple pane windows to keep the heat in on cold days and out on hot days.

3 Conserve energy inside with mechanicals and devices



High-efficiency VRF HVAC System that heats and cools only the spaces that need it.



LED lighting throughout the building that uses 75% less energy and lasts up to 25x longer than incandescent lighting.



Daylight and occupancy sensors that provide only the amount of artificial light needed for each space.



Power sensors that eliminate "phantom loads" by cutting off the flow of electricity to appliances, equipment, etc. not in use.

The Plainfield Park District received a grant of \$1.0 million from the [Illinois](#) Clean Energy Community Foundation to help make PARC a Net Zero facility.

How PARC Operates

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

Monthly Lighting

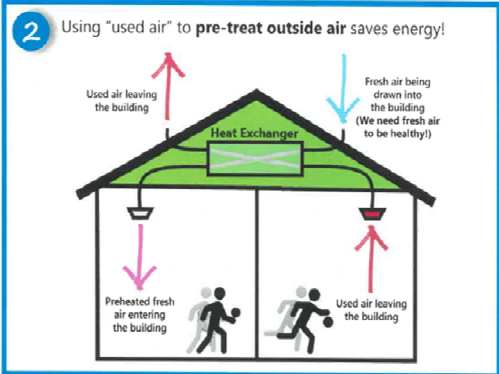
Monthly Plug Load

Monthly PV

Cumulative

1

The windows in this building are special! They're small, so they let light in, but not too much when it's hot outside. They're also "coated" to protect the interior of the building from the heat of the sun.



3 A lifetime of energy savings...

1 LED Light Bulb lasts 25 years!

2½ CFL Light Bulbs

25 Incandescent Light Bulbs

4

Extra insulation in the walls and on the roof is like putting a blanket around the building...

The roof has 10" of insulation!

...keeping it warmer in the winter and cooler in the summer.

Annual Overview

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

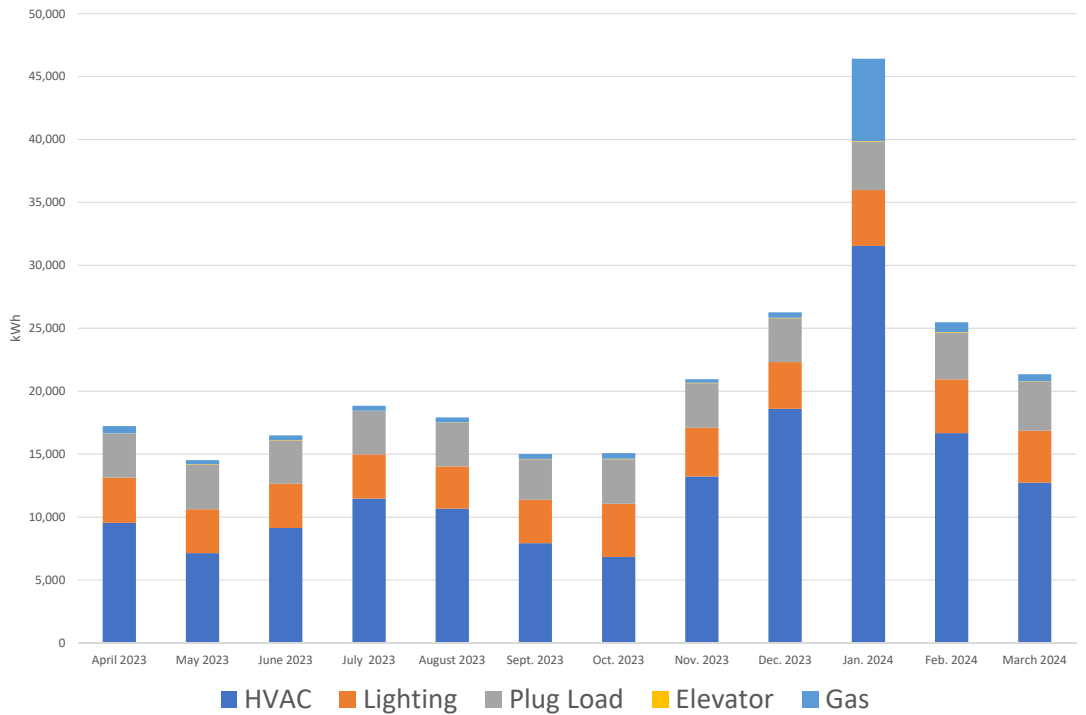
Monthly Lighting

Monthly Plug Load

Monthly PV

Cumulative

Overview Energy Usage



Monthly HVAC

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

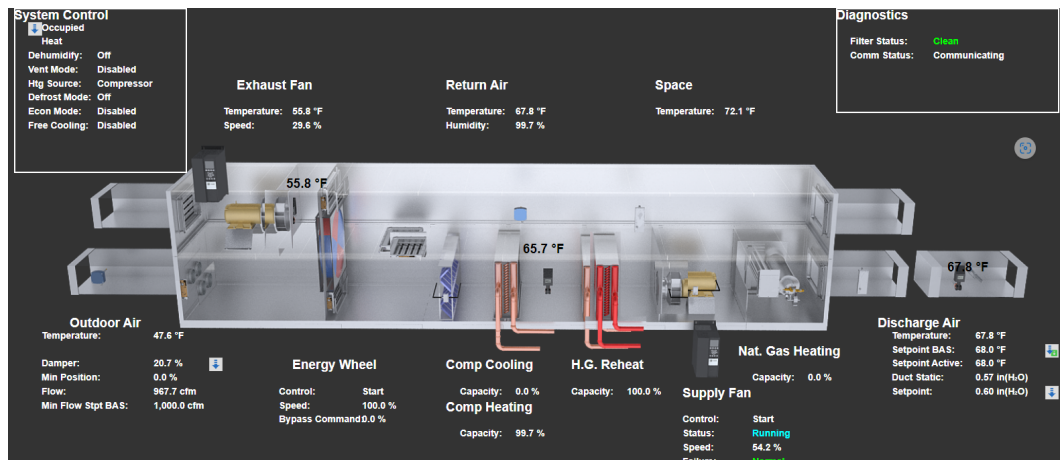
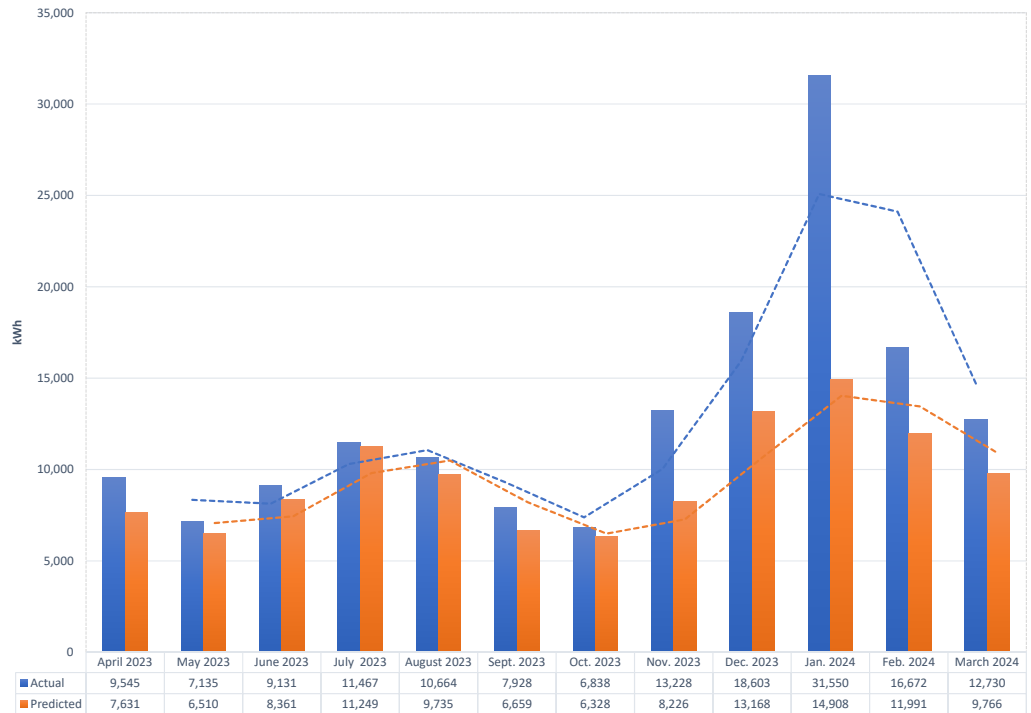
Monthly Lighting

Monthly Plug Load

Monthly PV

Cumulative

HVAC



*HVAC = Heating, Ventilation and air conditioning

Monthly Lighting

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

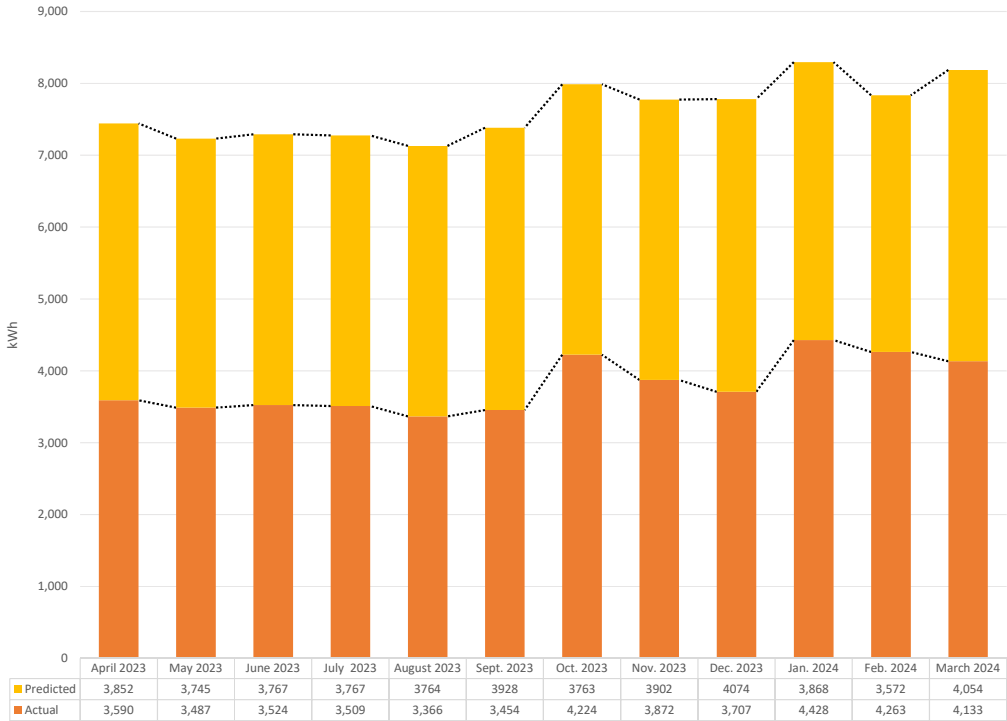
Monthly Lighting

Monthly Plug Load

Monthly PV

Cumulative

Lighting



Monthly Plug Load

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

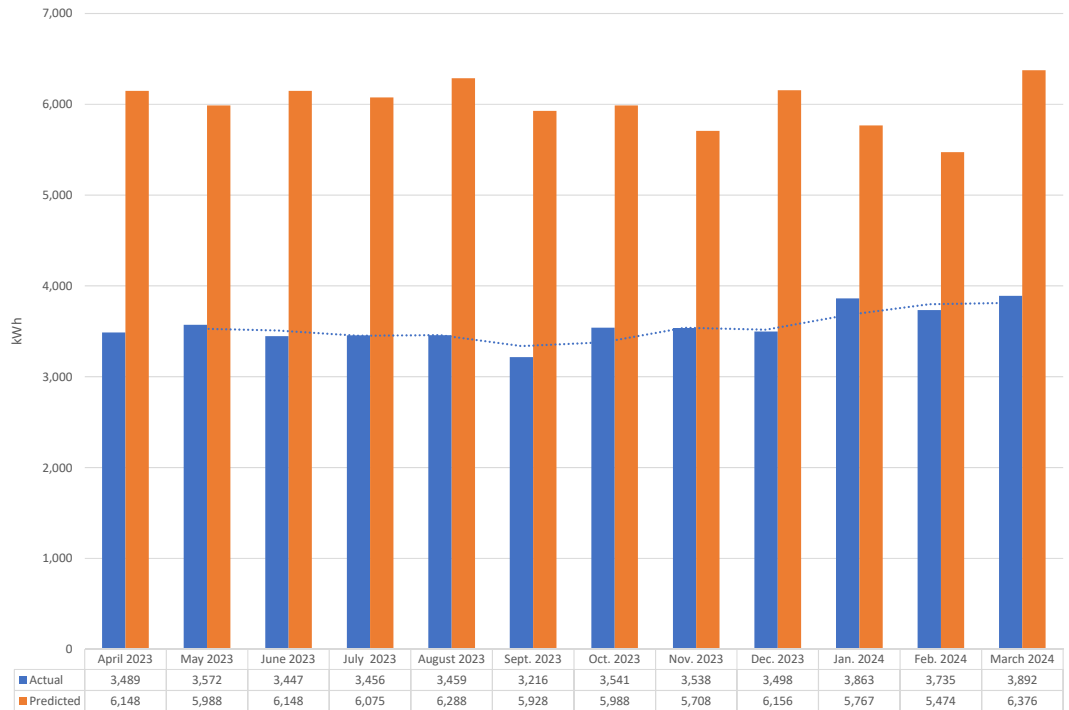
Monthly Lighting

Monthly Plug Load

Monthly PV

Cumulative

Plug Load



Monthly PV Production

Net Zero

How PARC Operates

Annual Overview

Monthly HVAC

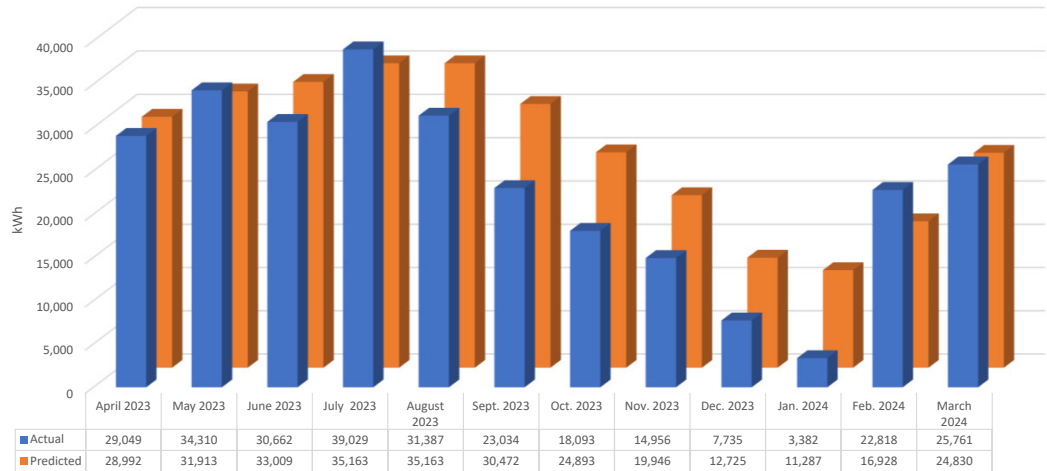
Monthly Lighting

Monthly Plug Load

Monthly PV

Cumulative

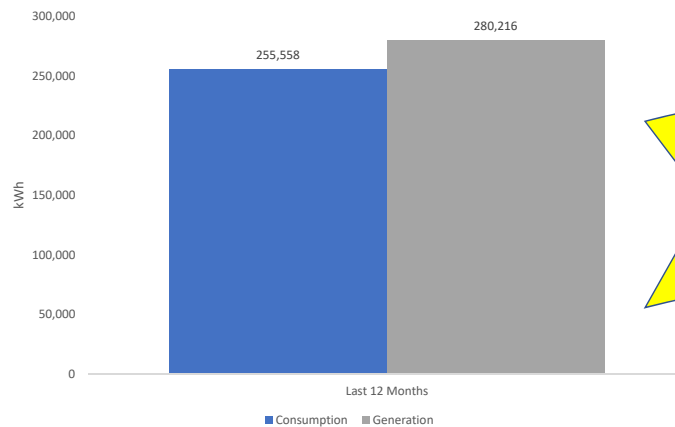
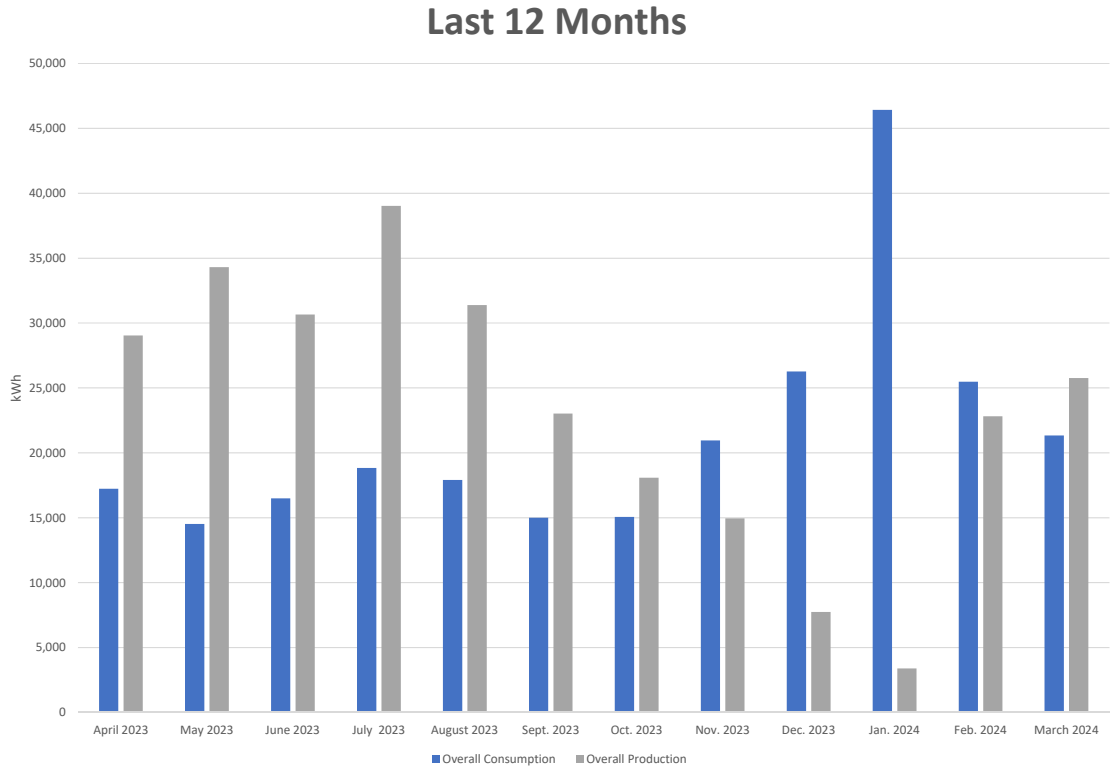
PV Production



*PV=Photovoltaics, generating electricity using solar power

Cumulative

- Net Zero**
- How PARC Operates**
- Annual Overview**
- Monthly HVAC**
- Monthly Lighting**
- Monthly Plug Load**
- Monthly PV**
- Cumulative**



Current Status
-24,658

* Data of each month here represents the cumulative of labeled month and previous 11 months. Eg: Jan-21 represents the cumulative data of Feb-20 to Jan-21.