



# Great Lakes Naval Station Hybrid Solar System

## Introduction

In 2019, SunDrum Solar commissioned a 1,300-collector hybrid solar PV-T Campus at Naval Station Great Lakes in North Chicago Illinois. The systems provide hot water to dormitories and base laundry. The commissioning phase included demonstrating winter performance where the systems were exposed to (-28F) temperatures. The systems have provided over 4000 therms of energy during a cold winter month while providing over 5500 therms of energy during a summer month. The thermal systems include 6 dormitory systems and one additional system supporting the base laundry. The largest Dormitory system consists of 240 SunDrum Solar's SDM100-400 800Wt collectors mounted behind Hanwah Q-Cell 330W PV panels, plus two 10 ton water-to-water heat pumps, with 4000 gal of solar preheat storage. During the summer the system demonstrated the capability of providing 57 Therms of energy per day, reducing the amount of steam required to heat hot water. The laundry system comprises over 7000 PV panels of which 100 have SDM100-400 collectors mounted behind them. This over 2MWe system has put to use the retired, on site, landfill. Providing useful electricity to the base and hot water to their laundry.



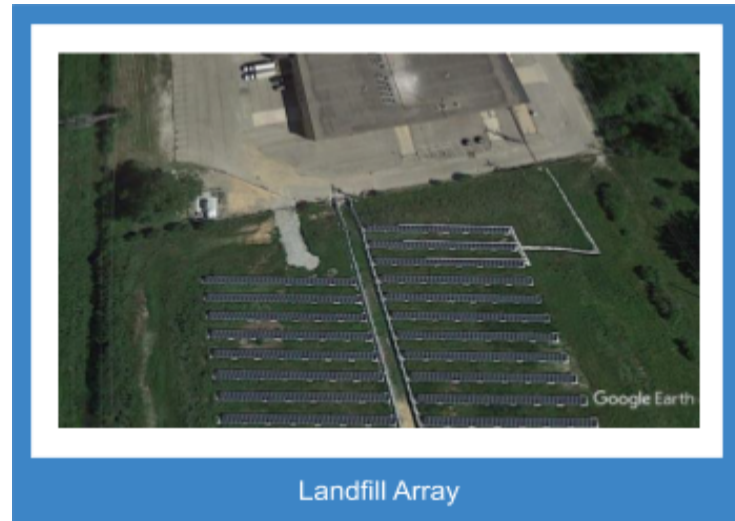
Dormitories

## System Information

- Location:** North Chicago Illinois, USA
- Application:** DHW + Laundry
- Rated Power Output:** 3.8MW, (1MWwt, 2.8MWe)
- Yearly Energy Output:** 1,925MWht
- Yearly CO2 Reduction:** 2,304,000lbs
- Solar Collectors:** 1,300 SDM100-400, 800Wt
- System Format:** Indirect Closed Loop
- Storage Capacity:** 24,500gal
- Backup Heating:** Steam



Mechanical Room



Landfill Array