

Parkdale Family & Children's Centre Solar Installation

Case Study Report

30 January 2018



Parkdale FCC Solar installation project

INTRODUCTION

A solar feasibility study in January 2017 undertaken by Moreland Energy Foundation (MEFL) recommended the installation of a solar array on the roof of the building to offset daytime energy use. The Parkdale Family and Children's Centre is a purpose built childcare centre that will also be used as a community hub and meeting space. The facility has been built in two stages with the rear section only more recently completed. The facility has 43 staff and 290 children with up to 137 children in the facility at any one time. The Parkdale Hub was assessed to be a preferred site for solar for its high daytime energy demand.

PROJECT OVERVIEW

Kingston Council contracted Urban Renewables for the installation of a solar photovoltaic (PV) system on Parkdale Family and Children Centre at 116 Warren Road Parkdale. The cost of electrical energy is a major operational expense for the Council and the energy is sourced from the electricity grid that contributes to greenhouse gas emissions. This system allows self-generation of electricity to reduce electricity consumption from the power grid, provide a net financial benefit and reduced carbon emissions. Installation took place in October 2017 and was completed by November 2017.

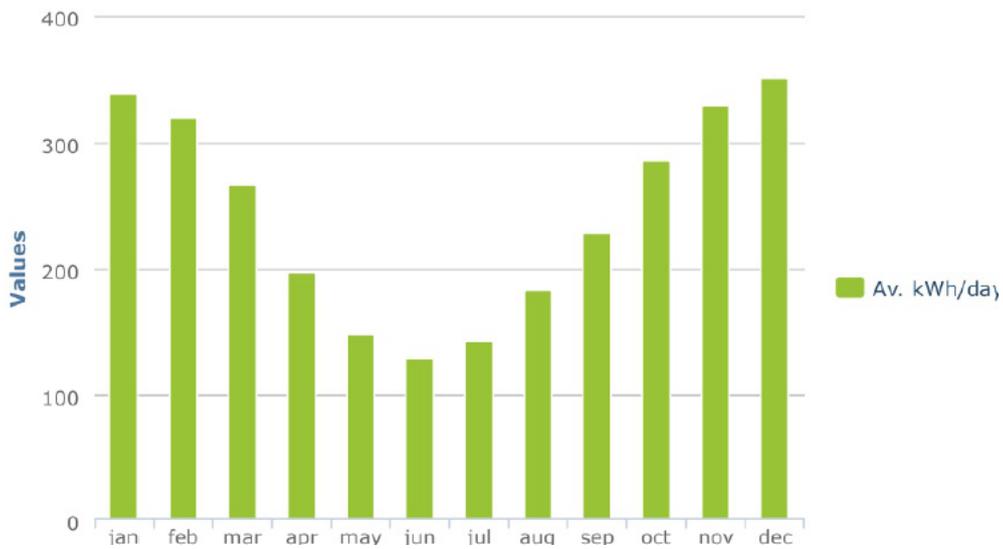
PROJECT DELIVERY

A 60.9kw system was installed. This comprises of 203 x 300watt photovoltaic cells. The system also has a 27kw and a 25kw Fronius inverter. This system size was chosen as optimal for production and behind the meter use for the site. (Paste the following link into browser to see a live feed and production and consumption data of Parkdale Solar)

<https://www.solarweb.com/Home/GuestLogOn?pvSystemid=4b04ca44-c43a-42fa-b5e9-1a078e77301d>

PROJECT SAVINGS AND PAYBACK PERIOD

- Electricity consumption for Parkdale hub for financial year 2016/17 was approximately 185,469kwh, with cost to council at \$39,000 per annum.
- The solar installation is estimated to save 88,506kwh electricity per annum that is produced by the solar and directly consumed at the site.
- Parkdale Hub is tracking to consume 95,000kwh from the grid compared to 88,506kwh consumed directly behind the meter from the solar system. The overall efficiency for the system will be 45 percent of total electricity production.
- Excess solar production will be sold back to the grid through the retailer. This is estimated at 18,000kwh annually.



(Solar production – daily averages) source: Urban Renewables projections

- The system is estimated to save the Parkdale Hub approximately \$10,000 per annum on electricity bills.
- This is also equivalent of saving 101 tonnes of CO₂-e emissions annually.
- A return on investment for this installation is a 5 year payback, with the project having a potential life of 25 years. Over the life of the solar system, the projected savings is set to be \$200,000 compared to business as usual (no rooftop solar).



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