

Sun Shadow Analysis on Toronto Municipal Building, 2017

City of Toronto would like to install solar panels on some of their municipal buildings including their parking lots. Shadow Volume Analysis was conducted on a parking lot of one of the municipal buildings in order to calculate the area that is covered by shadow for most of the year. In order to do so, two opposite times of the year were selected: June 21st and December 21st. Shadow Volume Analysis was performed for each of these days for the time frame of 10am to 2pm. The following plan developed in AutoCAD shows an averaged shadow coverage and usable area for an entire year.



Usable Area:

Total parking lot area:
4,737.729 sq metres

Total shadow area in
parking lot:
1,014.001 sq metres

Total usable parking lot
area:
3,723.728 sq metres

Shadows with the longest
distance coverage and
widest angle coverage
were taken into
consideration for this
calculation in order to
make sure every extent
was included.

Author:
Gayathri Ganesan,
May, 2017

Source:
City of Toronto,
2017

