



LANDSCAPE PERFORMANCE SERIES

Seattle Children's PlayGarden – Seattle, WA Methodology for Landscape Performance Benefits

Environmental

- ***Captures and infiltrates 150,040 gallons of stormwater runoff annually from 7,500 sf of impervious surfaces, saving an estimated \$300 in city stormwater management fees each year.***

The amount of runoff captured from the roof was calculated using the Washington State Department of Ecology Rain Harvesting Toolkit: <http://www.ecy.wa.gov/programs/wr/hq/rwh.html>

The square footage of the extensive green roof combined with the overall amount of impervious surface that is connected to the infiltration system equals a total area of 8,800 square feet. The calculator provided the amount of water generated monthly from these impervious areas based on annual precipitation data for the Seattle area. These monthly volumes were summed per annum to calculate the total amount of stormwater runoff.

Cost savings are based on classifications for drainage costs per 1,000 square feet developed by Seattle Public Utilities:
http://www.seattle.gov/util/Services/Drainage_&_Sewer/Rates/DrainageRates/RateSchedule/index.htm

With an estimated 30% of impervious surface, and an integrated low impact stormwater solution, the cost of stormwater drainage on the 50,761 sq. ft. site is calculated by using the Light Low Impact rate of \$23.47/ 1,000 sq. ft., multiplied by 50.761; or approximately \$1200 each year. The same method is applied to compare the cost of drainage to the same size parcel with a regular infrastructural approach to drainage, approximately \$1,500 in annual costs. This results in an annual savings of \$1,500-\$1,200 = \$300.

Social

- ***Yields an estimated 940 lbs (0.4 tons) of fruits and vegetables each year, which has an estimated value of \$1,100.***

Expected crop yield is estimated using a basic formula developed for vineyards and adapted for produce.

$$Y = P \times C \times W$$

Where Y= Predicted Yield

P= Number of plants (square footage of garden plot/ 2 to account for average 12" spacing between plantings)

C= number of edible parts/ plant (i.e. Corn, 1-2, potato 5-7)

Based on the variety of crops planted at PlayGarden, the average parameter for C is 3.

W= averaged weight of edibles from each individual plant

The calculator produces an average annual potential yield for the productive area based on crop variety. It does not account for environmental conditions that may improve or reduce crop yields annually.

The value of the productive yield was generated using the vegetable calculator:
http://www.plangarden.com/app/vegetable_value/

The calculator generates a total price (national average) based on size of garden, vegetables grown and density of plantings. We utilized the “Grocery” selection to generate the lowest potential value.

The value is based on the average annual potential yield for the productive area (not accounting environmental factors affecting yield). The unit value provided is also based on a national average of unit costs. Prices will fluctuate based on location and season.

- ***Provided therapeutic conditioning and outdoor education to nearly 400 children since opening in the Fall of 2010. Due to increasing demand, more capacity in the curriculum and programming is being incorporated for 2011/2012.***

Since the Fall of 2010 when the PlayGarden opened more than 200 able-bodied and children with disabilities have come to the site to participate in education programs. Due to growing interest two extra session of summer camps (20 children each) were added for 2011. For the 2011-2012 more than 170 children have been enrolled in summer camp and preschool programs.

Participation numbers were collected from participation and enrollment records provided by the Seattle Children PlayGarden’s Executive Director, Liz Bullard.