

AVG CITY BLOCK: 300 ft
AVG CITY LANE: 12 ft
AVG CITY SIDEWALK: 6 ft
TOTAL STREET WIDTH: 36 ft

TOTAL STREET AREA: 10800 ft^2
: 1555200 in^2

MAXIMUM INTERCEPT IS BASED ON MAXIMUM PLANT UPTAKE PER YEAR USING BOSTON IVY:

$$\begin{aligned}\text{Max Uptake} &= \text{Plant Uptake} \times \text{Total Street Area} \\ &= 60 \text{ in} \times 1555200 \text{ in}^2 \\ &= 93,312,000 \text{ in}^3\end{aligned}$$

To get maximum intercept by plants, 30% interception of falling precipitation was assumed.

$$\begin{aligned}\text{Max Intercept} &= 30\% \times \text{Max Uptake} \\ &= 0.30 \times 93,312,000 \text{ in}^3 \\ &= 27,993,600 \text{ in}^3\end{aligned}$$

$$\begin{aligned}27,993,600 \text{ in}^3 \times 0.00433 \frac{\text{gal}}{\text{in}^3} \\ = 121,184 \text{ gal}\end{aligned}$$

∴ BOSTON IVY CAN INTERCEPT 121,184 GALLONS OF WATER PER CITY BLOCK, PER YEAR.



the **AUBURN** project

WSU Integrated Design Experience 2011

PROJECT

DATE 1/24/2011

DESIGNER Jack B.

SHEET