



v3 - LEED 2008

# Landscaping in mid-rise buildings

MSSc2 | Possible 4 points

Glossary

## Intent

Design landscape features to avoid invasive species and minimize demand for water and synthetic chemicals.

## Requirements

### Prerequisites

**2.1 No Invasive Plants.** Introduce no invasive plant species into the landscape.

*Note: Invasive plant species vary by region. Consult the local Cooperative Extension Service or state agencies. A list of regional resources is available from the U.S. Department of Agriculture, at [www.invasivespeciesinfo.gov/unitedstates/state.shtml](http://www.invasivespeciesinfo.gov/unitedstates/state.shtml). Not all nonnative species are considered invasive.*

### Credits

*Note: Points shown below are for buildings that are fully landscaped. A project that has not completed the designed landscaping may earn up to 50% of the points for each credit as long as 50% or more of the designed landscaping is completed upon certification. In this case, 100% completion of the landscaping must be required by homeowner association or other rules within a specific time period not to exceed one year after occupancy. Erosion controls and soil stabilization measures must be robust enough to be effective for one year. The builder or project team must also develop a landscaping plan that meets the requirements in SS 2 and provide it to the homeowner.*

**2.2 Basic landscape design** (1 point). Meet the following requirements for all designed landscape softscapes:

- a. Any turf must be drought-tolerant.
- b. Do not use turf in densely shaded areas.
- c. Do not use turf in areas with a slope of 25% (i.e., 4:1 slope).
- d. Add mulch or soil amendments as appropriate.  
Mulch is defined as a covering placed around plants to reduce erosion and water loss and to help regulate soil temperature. In addition, upon decomposition, organic mulches serve as soil amendments. The type of mulch selected can affect soil pH.
- e. All compacted soil (e.g., from construction vehicles) must be tilled to at least 6 inches."

**2.3 Limit conventional turf for mid-rise** (maximum 2 points, as specified in Table 2). Limit the use of conventional turf in the designed landscape softscapes.

### AND/OR

**2.4 Drought-tolerant plants for mid-rise** (1 point). Install drought-tolerant plants. Both points must be earned under SS 2.3 in order to earn this credit. Install drought-tolerant plants such that at least 90% of the installed plants are drought-tolerant.

### OR

**2.5 Reduce overall irrigation demand by at Least 20% for mid-rise** (maximum 3 points, as specified in Table 3). Design the landscape and irrigation system to reduce overall irrigation water usage. The estimates must be calculated and prepared by a landscape professional, biologist, or other qualified professional using the method outlined below.

Percentage of designed landscape softscape area that is conventional turf	Points
21-40%	1
20% or less	2

Reduction in estimated irrigation water usage	SS 2.5 points	WE 2.2 points	Total points
20-24%	1	0	1
25-29%	1.5	0	1.5
30-34%	2	0	2
35-39%	2.5	0	2.5
40-44%	3	0	3
45-49%	3	0.5	3.5
50-54%	3	1	4
55-59%	3	1.5	4.5
60% or more	3	2	5

**Method for calculating reduction in irrigation demand****Step 1.**

Calculate the baseline irrigation water usage:

$$\text{Baseline Usage} = \text{Landsaped Area} * \text{ET}_0 * 0.62$$

where  $\text{ET}_0$  = Baseline Evapotranspiration Rate (available from local and state Departments of Agriculture)

**Step 2.**

Calculate the design case irrigation water usage:

$$\text{Design Case Usage} = (\text{Landsaped Area} * \text{ET}_L \div \text{IE}) * \text{CF} * 0.62$$

where  $\text{ET}_L = \text{ET}_0 * K_L$  and  $K_L = K_S * K_{MC}$ . Refer to Tables 4 and 5 for values for  $K_S$  and  $K_{MC}$ , and to Table 6 for values for IE. For CF, use estimated value based on manufacturer's specifications for percentage water savings.

**Step 3.**

Calculate the percentage reduction in irrigation water usage:

$$\text{Percentage Reduction} = (1 - \text{Design Case Usage} \div \text{Baseline Usage}) * 100$$

**Step 4.**

Refer to Table 3, above, to determine points earned.

Table 4. Species factor			
Vegetation type	Species factor (Ks)		
	Low	Average	High
Trees	0.2	0.5	0.9
Shrubs	0.2	0.5	0.7
Groundcover	0.5	0.8	1.0
Turf	0.6	0.7	0.8

Table 5. Microclimate Factor			
Example microclimate impacts	Species factor (K <sub>MC</sub> )		
	Low	Average	High
Shading	0.5	0.8	1.0
High sun exposure	1.0	1.2	1.5
Protection from wind	0.8	0.9	1.0
Windy Area	1.0	1.2	1.5

Table 6. Irrigation Efficiency		
Irrigation type	Irrigation efficiency (IE)	
	Low	High
Fixed spray	0.4	0.6
Impact and microspray	0.5	0.7
Rotors	0.6	0.8
Multistream rotators	0.6	0.8
Low volume and point source (e.g., drip)	0.7	0.9