

PROJECT-BASED LEARNING: DESIGN AND BUILD A RAIN GARDEN

Part 2: Site Investigation and Inventory

Activity A - Rain Garden Site Inventory

Read through the site inventory notes below before conducting the inventory. You will record some of this information on your printed Google map of the area. Then use the checklist on page 3 to keep track of your work and include any additional notes.

1. Take physical measurements of the most important site features that will affect your design. Make sure you note where boundaries and site elements intersect at 90° angles, as these are the easiest to recreate accurately when we draft our base maps in Step 3. Typical elements that need measuring include
 - a. Physical boundaries of the site: fences, building edges, retaining walls, edges of pathways, road or parking lot curbs, etc.
 - b. Extent of the **catchment area** that will contribute rainwater runoff into the rain garden. This step is critical for the volume and sizing calculations that we will perform in later.
2. Record other important features on the map that will affect the design and construction process:
 - a. Note the locations of important trees and plants, including a record of the tree trunk diameter at breast height (DBH).
 - b. Identify the sources of water for the rain garden, whether a downspout (roof leader) from an adjacent building whose roof runoff we are going to treat or a curb cut or pavement edge from a parking lot that is draining into the site
 - c. Indicate the direction of the site's slope or drainage patterns - where is the water flowing when it hits the ground?
 - d. Note entrances and exits to and from the site, whether they are building doorways or adjacent paths.
 - e. List any seating or public gathering areas where users congregate and use the site. (it is important to know how people currently enjoy using the site or surrounding areas so that you can either support or enhance their experience.)
 - f. Note any underground or above-head utility locations, drains, catch basins, and other physical infrastructure elements that may affect the design. Examples of utilities include gas, electrical and cable lines, water mains or sewer pipes. Look for manholes, grates or areas where you can see a cable or conduit entering the soil. Your teacher should have called 811 to confirm the presence of any hidden utilities.
 - g. Note locations of views into the site from the adjacent building windows, gathering areas, neighboring houses, etc.
 - h. Identify the areas of the site that are sunniest and most shady, this will inform the plant species that you will select later in the project.

- i. Note any additional site features that may affect our design work such as fire hydrants, telephone poles, parking spaces, dumpsters and trashcans, outdoor lighting, etc.

Rain Garden Site Inventory Checklist

Note the following information on your printed Google map. Record additional information below or in your notebook, as needed:

- Physical boundaries of the site: fences, building edges, retaining walls, edges of pathways, road or parking lot curbs, etc.

- Extent of the catchment area that will contribute rainwater runoff into our rain garden.

- Locations of important trees and plants, including a record of the tree trunk diameter at breast height (DBH).

- Sources of water for the rain garden:
 - downspouts from an adjacent building
 - curb cut or pavement edge from a parking lot that is draining into the site

- Direction of the site's slope or drainage patterns - where is the water flowing when it hits the ground?

- Entrances and exits to and from the site (e.g., building doorways or adjacent paths).

- Seating or public gathering areas where users congregate and use the site. Also note activities people currently engage in that might impact or disturb the rain garden, such as informal pathways or shortcuts, or nearby playing fields where there might be a risk of stray balls rolling into your intended garden area.

- Underground or above-head utility locations, drains, catch basins, and other physical infrastructure elements that may affect our design.

- Views into the site from the adjacent building windows, gathering areas, neighboring houses, etc.

- Areas of the site that are sunniest and most shady

- Additional site features, such as fire hydrants, telephone poles, parking spaces, dumpsters and trash cans, outdoor lighting, etc.