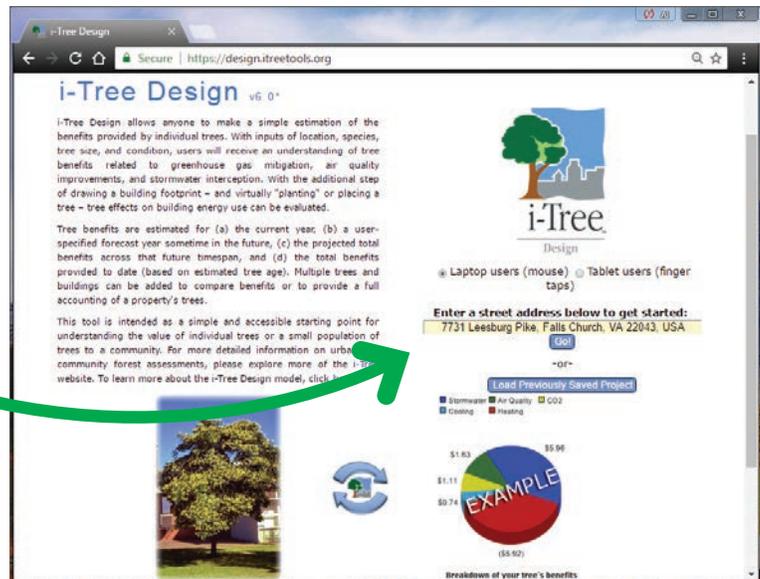


STUDENT PAGE

HOW TO USE i-TREE DESIGN

On a computer, navigate to <https://design.itreetools.org/>. Enter your school address or the specific address of the area you are studying (including the street address and city). A pop-up dialog box will appear to confirm the address.



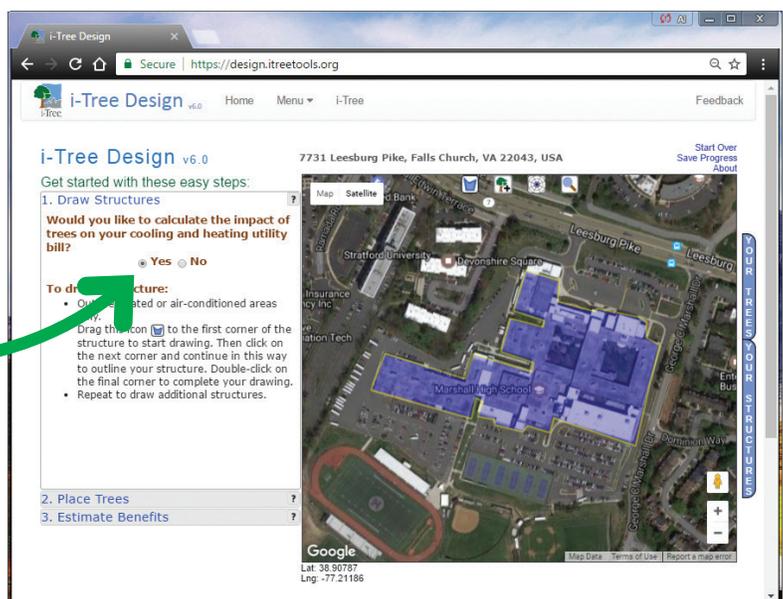
1. DRAW STRUCTURE

Trees affect the heating and cooling costs associated with a building by modifying climate, producing shade, and reducing wind speeds. These effects depend on the species, size, and location of a tree. On the next screen, you will be asked, “Would you like to calculate the impact of trees on your cooling and heating utility bill?” Click “Yes.”

You will then be instructed to “draw” the building structure. Basically, this means outlining the building. When you draw a structure, outline heated or air-conditioned areas only because trees have no effect on energy use in structures that are not heated or cooled, such as unheated garages.

To draw a structure:

- Zoom in as needed.
- Drag this icon  to the first corner of the structure to start drawing.
- Click on the next corner, moving around the perimeter of the building in one direction. Continue in this way to outline your structure.
- **Double-click** on the final corner to complete your drawing.
- Select characteristics about the structure in the “house information” pop up.
- Repeat to draw additional structures.



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HOW TO USE i-TREE DESIGN (CONTINUED)

If needed, you can:

- Hit the “Delete” key to delete your last point.
- Hit the “Esc” key to cancel drawing your structure entirely.

Additional tips and tricks:

- Click the “Your Structures” tab on the right-hand side of the screen to View/Delete structures.
- Click this button  to toggle between the current structure and the address.
- Click this button  to access more information about the steps.

Hint: Although “placing” each tree that you want to assess may seem time consuming, it is worthwhile because the program will automatically add up the energy-saving benefits and dollar value for all the trees, and you will be able to print reports with detailed data, graphs, and more!

Tree benefit zones: As you describe your tree, you will see colored zones around your structure(s) that represent energy benefits. The benefit zones are colored according to the potential monetary value of energy savings provided by the tree. You can hover over each zone to see energy benefit information displayed on the map. Click this button  to turn the benefit zones on and off.

2. PLACE TREES

To complete this section, you will need the data collected from the outside tree assessments that was entered on the Tree Value Worksheet Student Page. Start with tree #1 on your worksheet. Use the drop-down menus to indicate the tree’s species, diameter/circumference, condition, and exposure to sunlight.

Model the tree(s) future crown growth over time: Click on the “Model Crown Growth” button for a time-lapse view of how the tree crown will grow.

For each tree on the property that you want to assess, you will have to “place” it on the map. Do this using the “add a tree”  icon.

To place a tree:

- Drag the icon  to the location on the map where you would like to place your tree. (*Zoom in if needed*)
- Repeat to place additional trees. (*Change tree descriptors for each new tree.*)
- Hover over any tree you have placed on the map to display its benefits.
- Click the “Your Trees” tab on the right-hand side of the screen to View/Delete trees.

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HOW TO USE i-TREE DESIGN (CONTINUED)

3. ESTIMATE BENEFITS

Enter the number of years in the box for which you would like to calculate the projected benefits into the future. Press the “Calculate” button to get the results. (For consistency, use the same number of years for each tree you enter, e.g., 10 years). You can project tree benefits for up to 99 years into the future. These projections are based on typical growth patterns of each tree. Results will include estimates for the current year, the specified future year, projected totals across that future timespan, and the total benefits provided to date.

Hint: Use the “Display Results For” yellow bar at the top of the page to select results for “All Trees” or an individual tree.

The screenshot shows the i-Tree Design v6.0 interface. The browser address bar displays <https://design.itreetools.org>. The page title is "i-Tree Design v6.0" and the location is "7731 Leesburg Pike, Falls Church, VA 22043, USA". A navigation menu on the right includes "Start Over", "Return to Setup", "View Report", "Print", "Save Result", and "About".

The main content area features a horizontal tabbed interface with "Overall Benefits" selected. Below the tabs is a 3D pie chart titled "Breakdown of tree benefits" showing the following values:

Benefit Category	Value
Stormwater	\$30.70
Winter Savings	\$11.32
Summer Savings	\$26.70
CO2	\$6.96
Air Quality	\$1.22

Text on the right side of the interface states: "This 14-inch diameter red maple will provide overall benefits of \$77 in the current year." Below this, a paragraph explains that while some benefits are easy to quantify, others like human health are difficult. It notes that the results are initial approximations. A second paragraph states: "Benefits of trees do not account for the costs associated with trees' long-term care and maintenance." A third paragraph says: "If this tree is cared for and grows, it will provide \$97 worth of annual benefit in 10 years. See 'Future Year (2027)' tab at left for details." An image of a red maple tree is shown with the caption "Red maple Acer rubrum".