



We are often asked to summarize the ‘benefits’ of planting trees, shrubs and flowers. We all intuitively know that more plants are good for us – but in a world that is driven by facts and figures, how do we quantify the impacts that plants have on our day to day lives?

Project Evergreen is a US based green industry group that has done a remarkable job summarizing why plants make a difference. They have broken the benefits down to three categories:

- The social benefits of green spaces, such as how plants impact our health or impact school grades.
- The environmental benefits of green spaces, how plants impact pollution and the creation of a cleaner world.
- The economic benefits of green spaces, talking about the dollar and cents impact plants make to housing values and our businesses.

Here are the findings of Project Evergreen, showing how plants and landscaped green spaces really do help us all be Green for Life:

## **LIFESTYLE FACT SHEET**

The Social Benefits of Green Spaces:

- Privacy and tranquility. Well-placed plantings offer privacy and tranquility by screening out busy street noises and reducing glare from headlights.<sup>1</sup>
- Lower crime and enhanced self esteem. Studies over a 30-year period in communities, neighborhoods, housing projects and prisons show that when landscaping projects are promoted there is a definite increase in self esteem and a decrease in vandalism.<sup>2</sup>
- Stress reduction. A study published in Environment and Behavior (Vol 35:311.330) indicates that “...by boosting children’s attentional resources, green spaces may enable them to think more clearly and cope more effectively with life’s stress.”<sup>3</sup>
- Green space is beneficial to children. Studying the effects of green space, a Cornell University researcher indicated that “children who had the greatest gains in terms of ‘greenness’ between their old and new homes showed the greatest improvements in functioning.”<sup>4</sup>
- Girls and greenery. A University of Illinois study found that girls exposed to green settings are better able to handle peer pressure, sexual pressure and other challenging situations as well as perform better in school.<sup>5</sup>
- Health benefits. There is growing evidence that horticulture is important on a human level. Plants lower blood pressure, reduce muscle tension related to stress, improve attention and reduce feelings of fear and anger or aggression.<sup>6</sup>
- Good landscaping increases community appeal. Parks and street trees have been found to be second only to education in residents’ perceived value of municipal services offered. Psychologist Rachel Kaplan found trees, well-landscaped grounds and places for taking walks to be among the most important factors considered when individuals chose a place to live.<sup>7</sup>
- Green spaces create communities. Studies conducted by the Human Environment Research Laboratory at the University of Illinois Urbana-Champaign indicate that “Green spaces are gathering places that create close-knit communities and improve well-being— and in doing so, they increase safety.”<sup>8</sup>

- Better atmosphere for learning. To test attentiveness, a university class rotated between 2 classrooms. One contained plants and foliage and one did not. Results at the end of the academic year showed inattentiveness was reduced by 70 percent in the room containing plants plus indications of better exam performance.<sup>9</sup>
- Health benefits in children. Researchers found that Attention Deficit Disorder (A.D.D.) symptoms in children are relieved after contact with nature. Greenery in a child's everyday environment—even views of green through a window—reduces ADD symptoms.<sup>10</sup>
- Safer neighborhoods. In a study conducted at a Chicago public housing development, residents of buildings with more trees and grass reported that they knew their neighbors better, socialized with them more often, had stronger feelings of community and felt safer and better adjusted than did residents of more barren, but otherwise identical buildings.<sup>11</sup>
- Mood enhancer. Gardening and yard work contribute to healthy, active living both physically and emotionally. Horticulture therapists have discovered that gardening provides a form of emotional expression and release, and it helps people connect with others.<sup>12</sup>
- Road rage reduction. An interesting effect found in recent studies on driving and road stress is called the “immunization effect”—the degree of negative response to a stressful experience is less if a view of nature preceded the stressful situation.<sup>13</sup>
- Social communities strengthened. Trees have the potential to reduce social service budgets, decrease police calls for domestic violence, strengthen urban communities and decrease the incidence of child abuse.<sup>14</sup>
- Doctors have shown that people recover faster in a hospital when given a landscape view, rather than seeing only the walls of adjoining buildings.<sup>15</sup>

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## ENVIRONMENTAL FACT SHEET

### The Environmental Benefits of Green Spaces:

- Urban advantages. More green space within a city's boundaries can improve the urban environment. Among the green space advantages listed in EcoPlanIT Madison: Green Space Goal (UW-Madison Department of Urban and Regional Planning) are: helping regulate air quality and climate...reducing energy consumption by countering the warming effects of paved surfaces...recharging groundwater supplies and protecting lakes and streams from polluted runoff.<sup>1</sup>
- Water quality protection. Proper landscaping reduces nitrate leaching from the soil into the water supply and reduces surface water runoff, keeping phosphorus and other pollutants out of our waterways and preventing septic system overload.<sup>2</sup>

- Reduced heat buildup. Trees in a parking lot can reduce on-site heat buildup, decrease runoff and enhance night time cool downs. Tests in a mall parking lot in Huntsville, Ala. showed a 31 degree F difference between shaded and unshaded areas.<sup>3</sup>
- Reduced soil erosion. A dense cover of plants and mulch holds soil in place, keeping sediment out of lakes, streams, storm drains and roads; and reducing flooding, mudslides and dust storms.<sup>4</sup>
- Improved air quality. Trees, shrubs and turf remove smoke, dust and other pollutants from the air. One tree can remove 26 pounds of carbon dioxide from the atmosphere annually, equaling 11,000 miles of car emissions. One study showed that one acre of trees has the ability to remove 13 tons of particles and gases annually.<sup>5</sup>
- 2,500 square feet of turf absorbs carbon dioxide from the atmosphere and releases enough oxygen for a family of four to breathe.<sup>6</sup>
- Lower attic temperatures. Trees shading homes can reduce attic temperatures as much as 40 degrees. According to the EPA, urban forests reduce urban air temperatures significantly by shading heat sinks such as buildings and concrete and returning humidity to the air through evaporative cooling.<sup>7</sup>
- Natural resource conservation. By using trees to modify temperatures, the amount of fossil fuels used for cooling and heating is reduced. Properly placed deciduous trees reduce house temperatures in the summer, allowing air conditioning units to run 2 to 4 percent more efficiently. The trees also allow the sun to warm the house in the winter.<sup>8</sup>
- Green roofs cool urban hot spots. Led by cities such as Chicago and Toronto, as well as a number of universities, evidence is mounting that green roofs (i.e. roofs totally or partially covered with vegetation) can play an important role in saving energy, reducing the urban heat island effect and adding more green space to a built environment.<sup>9</sup>
- Cooler summer days. Lawns will be 30 degrees cooler than asphalt and 14 degrees cooler than bare soil in the heat of summer.<sup>10</sup>
- Natural resource conservation. Homeowners can “grasscycle” by leaving grass clippings on the lawn when mowing. The clippings quickly decompose and release valuable nutrients back into the soil to feed the grass, reducing the need for nitrogen by 25 to 50 percent. Modern mulching lawn mowers make “grasscycling” even easier, and homeowners can reduce their mowing time by 30 to 40 percent by not having to bag clippings.<sup>11</sup>
- Reduced pollution. Trees naturally remove pollutants from the air, so every tree that’s subtracted from a city’s ecosystem means some particulate pollution remains that should have been filtered out. In Washington, that amounts to 540 extra tons each year.<sup>12</sup>
- Rainfall retention. A healthy, sodded lawn absorbs rainfall 6 times more effectively than a wheat field and 4 times better than a hay field.<sup>13</sup>
- Natural storm water management. A big tree removes 60 to 70 times the pollution than a small tree.<sup>14</sup>
- Reduced temperatures. In Atlanta, temperatures have climbed 5 to 8 degrees higher than surrounding countryside where developers bulldozed 380,000 acres between 1973 and 1999, according to NASA. Scientists fear the heavily developed corridor between Boston and Washington could be the next big hot zone.<sup>15</sup>

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## ECONOMIC FACT SHEET

### The Financial Benefits of Green Spaces:

- Green space can improve property value. This has been documented in a number of publications and studies including:
  - Smart Money magazine indicated that consumers value a landscaped home up to 11.3 percent higher than its base price.<sup>1</sup>
  - A study by Aspen Environmental Companies found that a landscaping investment is nearly always recovered and can help reduce time on the market.<sup>2</sup>
  - Money magazine says: “attractively landscaping your yard can be one of the most cost-effective ways to boost your home’s curb appeal,” and emphasizes the value added by trees.<sup>3</sup>
  - In Canada, researchers at Quebec’s Laval University created a detailed survey study of 760 home sales and found that landscaping attributes (trees, flowers, plants, hedges) can “command a substantial market premium.”<sup>4</sup>
- Fast growth, major economic impact. According to a USDA-funded research report, the environmental horticulture industry [Green Industry], “is one of the fastest growing segments of the nation’s agricultural economy.”<sup>5</sup> Its economic impact was estimated to include:
  - \$147.8 billion in output – \$64.3 billion in labor income – \$6.9 billion in indirect business taxes
  - 1,964,339 jobs – \$95.1 billion in value added
- Businesses benefit. Roadside Studies by the University of Washington stated that drivers indicated it was easier to locate roadside businesses when they were framed by trees and vegetation, rather than having this green material removed.<sup>6</sup>
- Parks improve property value. There is a significant link between the value of a property and its proximity to parks, greenbelts and other green spaces. Studies of three neighborhoods in Boulder, Colo. indicated that property values decreased by \$4.20 for each foot away from a greenbelt.<sup>7</sup>
- Green space helps decrease air conditioning costs. Here are some useful references:
  - According to the California Energy Commission: “Planting the correct trees, shrubs, vines and groundcover can make your home both warmer in the winter and cooler in the summer. In fact, the right type of tree can reduce your summer cooling costs by 20 to 40 percent!”<sup>8</sup>
  - Computer models devised by the U.S. Department of Energy predict that the proper placement of only three trees will save an average household between \$100 and \$250 in energy costs annually.<sup>9</sup>
  - The cooling effect of an average size lawn is equal to about 9 tons of air conditioning.<sup>10</sup>
- Views of plants increase job satisfaction. Employees with an outside view of plants experience less job pressure and greater job satisfaction than workers viewing man-made objects or having no outside view. They also report fewer headaches and other ailments than workers without the view.<sup>11</sup>
- Nature increases worker productivity. Psychologists have found that access to plants and green spaces provides a sense of rest and allows workers to be more productive.<sup>12</sup>
- Landscaping renews business districts. Greening of business districts increases community pride and positive perception of an area, drawing customers to the businesses.<sup>13</sup>
- Quality landscaping means quality goods. A recent study found that consumers would be willing to pay, on average, a 12% premium for goods purchased in retail establishments that are accompanied by quality landscaping.<sup>14</sup>
- Employment and tourism boost. Employment opportunities are associated with the creation and longterm maintenance of urban open space, as well as tourism dollars of visitors from parks, gardens and civic areas (Woolley 2003).<sup>15</sup>
- Increases retail activity. Studies have proven that greenery and flowers attract shoppers and residents to urban areas...spurring economic growth.<sup>16</sup>

- Business growth. Small businesses choosing a new business location rank the amount of open space and proximity to parks and recreation as the number-one priority in site selection.<sup>17</sup>
- Protects drainage systems. The crown of a large tree is a freestanding anti-flood reservoir, in some cases intercepting so much rainfall that more than 1,500 gallons a year evaporates instead of hitting the ground. Chop down the tree, and you increase the volume of storm water a city must manage— something that especially affects older cities with aging drainage systems.<sup>18</sup>

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