

The Benefits of Trees

Class Discussion Led by David Coke

The Benefits of Urban Trees

- Broad Categories
 - Improved Physical Health
 - Cleaner Air
 - Cleaner Water
 - Less Storm Water Runoff
 - More money
 - Other
 - Improved Mental Health

Improved Physical Health

- Roger Ulrich, Director of the Center for Health Systems and Designs at Texas A&M discovered that patients with a view of trees from their hospital beds had shorter stays and took fewer pain medications.
- Kuo and Sullivan did a study that demonstrated ADHD symptoms were reduced after contact with green areas.
- Cornell University study showed green spaces boosted attention spans and increased student test scores.
- The University of Texas at El Paso added trees to their campus and saw improved student performance.
- The City of Fort Worth offers trees grown at their Tree Farm to FW ISD schools.
- Tree lined trails, side walks and streets encourage walking.

Improved Safety

- Neighborhoods with trees have less crime than those without.
 - People spend more time outdoors so less opportunities for mischief.
 - People feel better about their surroundings.
- Fewer incidents of domestic violence.

Comfort

- Energy effects on buildings:
- Reduced summer temperature and other microclimatic effects.
 - Shade and transpiration.
 - Can be reduced if they block breezes.
- Blocking/dispersing cold winter winds.
 - If blocking winter sun, can increase heating loads.
- Less electric/natural gas consumption result in lower emissions from power plants.
- Heat island affect in cities lowered.
 - Temperatures can easily be 7-14°F higher than in near by rural areas.
 - Proper placement of trees can lower this difference significantly.
- Heat absorbed by pavement, concrete, and buildings keep overnight temperatures higher as the heat is released.

Cleaner Air

- They release O₂ keep the carbon by breaking down CO₂ through photosynthesis.
- This sequesters carbon and reduces the greenhouse gas, CO₂.
- By breathing in particulates and chemicals and trapping them in the leaves, they reduce air pollution.
- They absorb gasses such as ozone, sulfur dioxide, and nitrous oxides.
- Cars parked in the shade emit fewer volatile organic compounds.
- Cooler parking lots mean cooler cities and fewer ozone days.

Cleaner Water

- Slower water carries less sediment to be washed downstream.
- Filter out contaminants from the soil.

Less Storm Water Runoff

- Trees intercept rainfall.
- They slow water allowing more time for absorption.
- Lessens the impact of a water droplet hitting the ground, reducing erosion.
- Lowers the burden on city's storm water drainage system.
- They take up and store water when available.
- They are particularly valuable when covering impermeable surfaces.
- Therefore, less flooding.

More Money

- They increase property values.
 - Real estate values are higher when there are large attractive, well cared for trees which were planted in the right locations.
 - Homes with good trees sell faster.
- Trees stimulate the local economy.
- They stimulate retail sales.
 - For example, if you've lived in Fort Worth long, you can see the improvements that have been made along Camp Bowie Blvd and the development that has occurred. That started with trees plantings along the street.
 - Surveys have shown people prefer to shop in shopping centers with tree landscaping and that they are willing to pay more for products and services.

Other Benefits

- Add color.
- Soften harsh building lines.
- Screen unsightly views.
- Provide a sense of solitude in an urban environment.
- Increase a sense of security.
- Contribute to the general character and a sense of place in communities.

Improved Mental Health

- Some people see trees as something magical, mystical, or even spiritual.
- Egyptians built gardens to “restore the spirit”.
- Modern science has correlated and explained the connections between our mental health and our contact with nature, trees in particular.
- Trees can create a gathering place for communities, increasing community ties:
 - More social gatherings.
 - Neighbors know each other more.
 - Stronger feelings of community and belonging.

Impressions?

- How did this first session go?