

Public Works DIGEST

Volume XXVII, No. 1
January/February/March
2015



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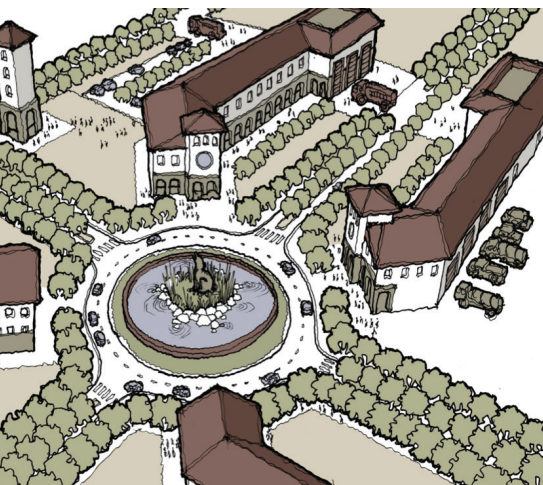


Illustration of planning practices used to create resilient communities



Public Works DIGEST

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JANUARY/FEBRUARY/MARCH
2015



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Management Command
2405 Gun Shed Road
Fort Sam Houston, TX 78234-1223

Public Works Digest is an unofficial publication of the U.S. Army Installation Management Command, under AR 360-1, The Army Public Affairs Program. Method of reproduction: photo-offset; press run: 1,600; estimated readership: 5,000. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.

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Why Trees? The Value of Street Trees in Master Planning

by Jerry Zekert and Courtney Cross

Visual preference surveys consistently show that people have a strong preference for places with trees.

When people think of great streets, trees are always an attribute. The value of trees is much greater than purely aesthetic, though that is definitely a factor; trees provide safety and shade and compounding benefits are associated with each of these characteristics.

Safety Benefits. A 2008 study by the Texas Transportation Institute building upon over a decade of evolving research indicates street trees greatly improve roadway and pedestrian safety, as well as enhancing pedestrian comfort and walkability. Street trees create a visual edge to the driving environment, thus providing both a visual and physical buffer to protect pedestrians. Psychologist Daniel Berlyne's research suggests that the rhythm of street trees also provides an optimal visual complexity, which could enhance driver attentiveness to the streetscape. If you want to slow traffic and improve pedestrian safety, then plant street trees at regular intervals.

Energy Benefits. According to a 1985 study of microclimates in urban centers, the canopy of a tree intercepts approximately 90% of solar radiation, decreasing temperatures by up to 41 degrees Fahrenheit. Trees help maintain

cooler microclimates and reduce the urban heat island effect. Shading pavements and cladding increases the lifespan of materials due to reduced thermal exposure. According to Dan Burden's article on the 22 Benefits of Urban Street Trees, street trees that shade buildings can improve building energy use and reduce utility costs by 15-35%. Comfort of pedestrians and building occupants is also improved when people too are less subjected to direct sun exposure, improving walkability and outdoor comfort. Tree canopies slow the fall of rain, which reduces infrastructure expenses from storm-water runoff, and also provides some shelter from storms.

Social Benefits. From a social standpoint, a three-year study by the American Planning Association showed that trees reduce stress and aggression. This means that trees can help improve resiliency on installations. This may be one reason why the former Commanding General at Fort Bliss, Major General Dana Pittard, ordered his staff to plant 20,000 trees at the installation. Fort Hood has also embarked on an impressive tree planting program and has been named a Tree City USA. Trees enhance the character of outdoor spaces and improve views. A study of Chicago public housing conducted in 1997 at the University of Illinois showed that green spaces with trees reliably drew larger groups of people and a greater diversity of ages than places without trees. This suggests that natural features, like trees, are vital to the success of outdoor spaces.

The Master Planning Impact. Street trees will help installations meet key master planning strategies including sustainable planning and healthy community planning. Trees will also help installations meet the FY13 National Defense Authorization Act requirement for more sustainable design and development. Hence:

- Planners and landscape architects should prioritize street trees over almost all other landscape elements.
- Where appropriate, street trees should be included in programming documentation.




Majestic street trees at Wheeler Army Airfield shade the streets, sidewalks, and historic buildings along Wright Avenue.

- Master plans should show street trees on almost all roads on an installation. Rather than spend money on complex shrubs, specimen trees, and ground covers, just plant street trees.
- In order to boost the efficacy of shading, specify trees with a dense canopy and a high branch height. Low maintenance varieties with deep root structures, which produce less debris, are advisable to keep roadways and sidewalks clean. Native or climatically adapted species will require less water and be more likely to mature and flourish.
- For optimal coverage, trees should be planted at regular intervals, 25' to 30' on center, along as many streets as possible, but at minimum in publicly used and high-traffic areas.
- Planting trees between curbs and sidewalks is best since, from this location, trees can help shade both the street and sidewalk.

So next time you look at a tree on your base, don't think of its beauty first, think of its ability to reduce energy costs, capture stormwater, enhance pedestrian safety, and improve the social environment.

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ments in Installation Planning Standards

- Participate in design reviews to make sure that the width and window requirements are followed in detailed designs

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