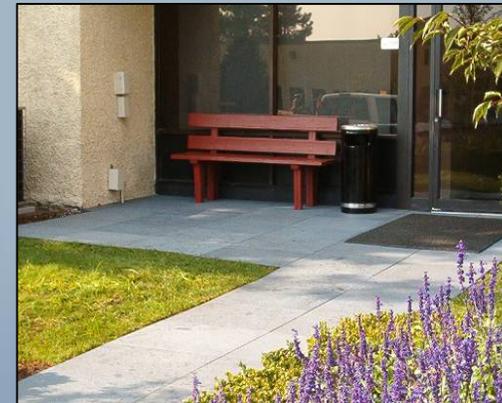




# What you are looking at...



# Is not what you think it is...

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# The Problem



## TREE ROOTS BREAK CONCRETE



Santa Monica, CA



New Rochelle, NY

Trees were once planted too close to sidewalks. Now it is an urban epidemic.



# Concrete Near Trees



Will look like this in 4-7 Years...



# City of Santa Monica



| Duration of Study | Street            | Number of repairs | Number of Repeats | % of Repeats  | Maintenance Frequency of Repeats in Years | No. of Tri-Peats     | % of Tri-Peats |
|-------------------|-------------------|-------------------|-------------------|---------------|---|----------------------|----------------|
| 14 years          | Yale St           | 144               | 38                | 26.4%         | 6.7                                       | 5 tri-peats          | 3.47%          |
|                   | Princeton St      | 119               | 22                | 18.0%         | 5.7                                       | 4 tri-peats          | 3.36%          |
|                   | 17th St           | 179               | 32                | 17.9%         | 5.0                                       | 1 tri-peats          | 0.56%          |
|                   | Washington Ave    | 106               | 19                | 17.9%         | 4.7                                       | 3 tri-peats          | 2.83%          |
|                   | 14th St           | 155               | 10                | 6.5%          | 4.7                                       | 3 tri-peats          | 1.94%          |
|                   | Pine St           | 73                | 10                | 13.7%         | 5.8                                       | 2 tri-peats          | 2.74%          |
|                   | Pier Ave          | 113               | 20                | 17.7%         | 6.1                                       | 1 tri-peats          | 0.88%          |
|                   | Pearl St          | 226               | 31                | 13.7%         | 5.6                                       | 7 tri-peats          | 3.10%          |
|                   | Marine St         | 186               | 40                | 21.5%         | 7.0                                       | 5 tri-peats          | 2.69%          |
|                   | Maple St          | 88                | 15                | 17.0%         | 7.7                                       | 1 tri-peats          | 1.14%          |
|                   | Franklin St       | 115               | 13                | 11.3%         | 5   | 1 tri-peats          | 0.87%          |
|                   | Delaware Ave      | 88                | 9                 | 10.2%         | 5.5                                       | 0 tri-peats          | N/A            |
|                   | Ashland Ave       | 210               | 33                | 15.71%        | 5.9                                       | 6 tri-peats          | 2.86%          |
|                   | 22nd St           | 384               | 52                | 13.54%        | 4.8                                       | 4 tri-peats          | 1.04%          |
|                   | 11th St           | 197               | 15                | 7.61%         | 5.7                                       | 1 tri-peats          | 0.51%          |
|                   | 21st St           | 167               | 33                | 19.76%        | 7.7                                       | 4 tri-peats          | 2.40%          |
|                   | 20th St           | 214               | 27                | 12.62%        | 5.8                                       | 2 tri-peats          | 0.93%          |
|                   | 7th St            | 140               | 20                | 14.29%        | 6.0                                       | 0 tri-peats          | N/A            |
|                   | Grant St          | 125               | 25                | 20.00%        | 7.2                                       | 2 tri-peats          | 1.60%          |
|                   | Hill St           | 268               | 56                | 20.90%        | 6.7                                       | 10 tri-peats         | 3.73%          |
|                   | <u>Oak St</u>     | <u>183</u>        | <u>36</u>         | <u>19.67%</u> | <u>6.4</u>                                | <u>4 tri-peats</u>   | <u>2.19%</u>   |
| <b>Totals:</b>    | <b>21 Streets</b> | <b>3480</b>       | <b>556</b>        |               |   | <b>66 tri-peats</b>  |                |
| <b>Averages:</b>  |                   | <b>166</b>        | <b>26</b>         | <b>16.0%</b>  | <b>6.0</b>                                | <b>3.1 tri-peats</b> | <b>2.04%</b>   |

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# Cities Unable to Keep Up



## Portland Press Herald

Wednesday, April 12, 2006



Staff photo by John Patriquin  
David Gaudet of South Portland's public works department shows an example along Highland Avenue of a sidewalk that needs repairs because roots are pushing up its surface.

“Of the 74 miles of sidewalks in the city, 29 % or 21 miles are in dangerous condition...

“The sidewalks are unusable...growing tree roots are to blame.”

David Gaudet,  
Portland Public Works



# Concrete = Demo & Replace



- **Guaranteed to break**
- **Chronic problem**
- **Costly**
- **Creates waste**
- **Loud**
- **Polluting**

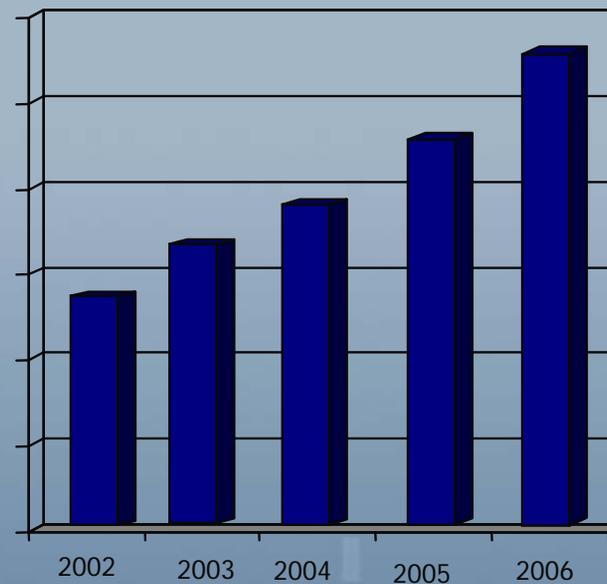


# Cost of Concrete



**88% increase since 2002**

**Per Cubic Yard/US  
Dollars**





# Legal: Twice the Cost of Maintenance



\$2.26

Legal



\$1.00

Maintenance

Source International Society of Arboriculture

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# Injury and Lawsuits Result



Settlements from residents who sued after getting injured on the sidewalks have cost the city nearly **\$400,000** over the past three years



The city has already paid **\$619,000** for "slip-and-fall" lawsuits caused by sidewalk trees in the current fiscal year, which ends June 30. In the previous fiscal year, Oakland paid \$350,000 to settle similar suits.

In one case, Oakland paid **\$195,000** to settle a suit by Joan Amy, who **tripped and fell** in the 200 block of Athol Street, near Lake Merritt, on April 17, 2001. **The sidewalk there was broken and buckled by a city-owned tree, according to the Oakland city attorney.**



**San Mateo, CA** – Cracked sidewalks are a big safety issue, but they can pose an even bigger liability issue for the city, **having cost it more than \$77,000 since 2001**. Pedestrian safety was one of the biggest concerns behind the city's sidewalk program.

**Almost all trip and fall cases are because of sidewalks uplifted by tree roots**



In the past decade, **the city has spent an average of \$20,000 a year** on trip and fall claims with about one claim filed per quarter, according to officials.



# Concrete



What is your REALLY cost of concrete...

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# City of Santa Monica



| Items                                  | Unit Cost      |
|--|----------------|
| Unit cost of concrete sidewalk repairs | \$10.00/ sq ft |
| Cost of labor and materials            | \$6.00/sq ft   |
| Break out and disposal                 | \$2.00/sq ft   |
| Arborist fees                          | \$1.00/sq ft   |
| Internal Department Cost               | \$1.00/sf ft   |



# Now, a Solution



## RUBBERSIDEWALKS



**Modular, interlocking,  
recycled rubber paving  
system:**

- **Unbreakable**
- **Maintainable**
- **Eliminates trip & fall**
- **Ends chronic break out**
- **2'x2.5'x1.875"**



# Prevents Storm Water Run-off



- Porous through seams and edges =  
.25 inches per hour



# Preserves Urban Forest

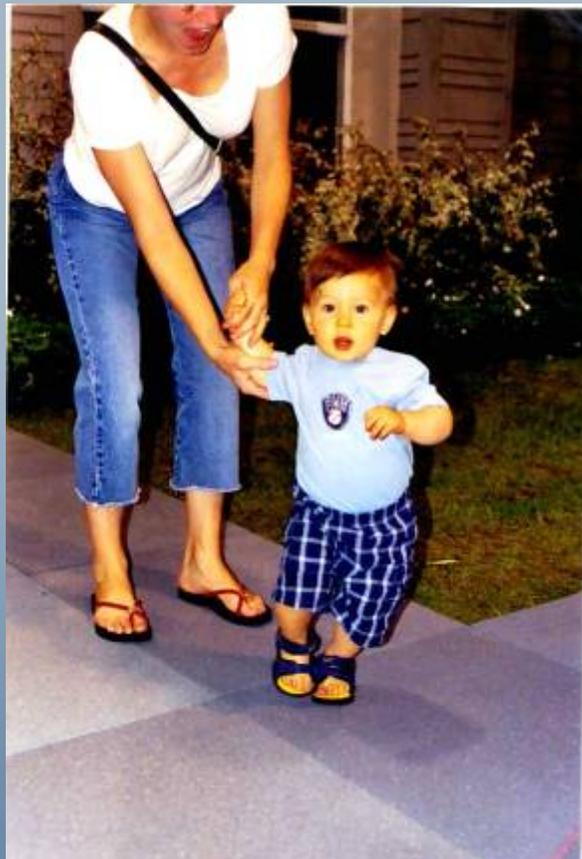


- Healthy trees saved instead of cut down
- No damaging tree root trimming

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# PROVIDES SAFETY



**FIRM...  
YET SHOCK  
ABSORBING**

- **Safe transition onto and off adjacent concrete**
- **Nothing breaks on Rubbersidewalks, not bottles, not bones**



# ADA Compliant



- **Non-Skid surface**
- **Low vibration**
- **Safe transition**
- **4' width minimum**



# TEMPORARY SIDEWALK NEEDS



**Construction sites,  
temporary development,  
utilities maintenance**



# Diverts Waste Tires from Landfill



**100% recycled tire rubber, fabricated  
into dense, durable modules**



**Santa Monica, CA**

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# Saving the Urban Forest



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# Negative Press To Cut Trees Down



**SANTA BARBARA NEWS-PRESS**  
  
[newspress.com](http://newspress.com)

**Chopping down ficus one at a time?  
OUR OPINION  
5/24/04**

A community uproar saved ficus trees on upper State Street. These healthy and mature trees -- with big green canopies providing shade for people and shelter for wildlife -- won't come crashing down. For now, that is.

But residents need to be vigilant about future attempts to cut down ficus because some people would rather not deal with ficus roots that can raise up sidewalks.



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# Why Should We Care About Trees



- Adds to Cities' Assets
- Improves Air Quality
- Water Quality Reduction
- Lowers Temperatures
- Increases Property Values
- Lowers Crime Rates
- Helps Wildlife Habitat
- Reduces Noise Levels



# Air Quality



- Trees remove dust and other pollutants from the air.
- In fact, one tree can remove 26 pounds of carbon dioxide from the atmosphere annually
- the equivalent of 11,000 miles of car emissions

\*Source: NYC Parks and Recreations



# Water Quality Protection

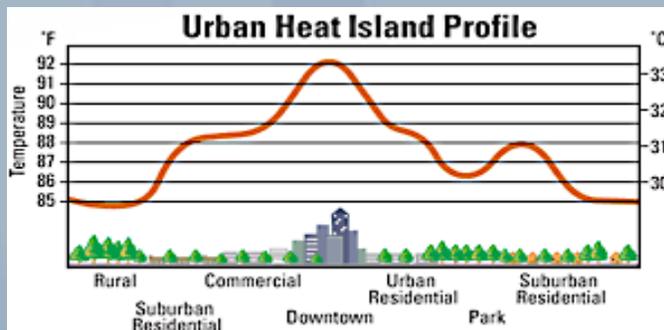


- Urban trees capture rainfall on their leaves and branches and take up water, acting as natural storm water capture and retention devices.
- Street trees intercept 1,525 gallons per tree.
- The total value of this benefit to New York City is over \$35 million each year.

\*Source: NYC Parks and Recreations



# Heat Island



- Lowers Temperatures
  - Reduce Air Condition Needs by 30%
  - Annual Energy Reduction
    - \$50 per tree\*
  - Reduces Air Temperature 2-8 Degrees\*\*

\*Source: NYC Parks and Recreations

\*\*Source: Lawrence Berkeley National Laboratory, NASA and American Forests



# Property Values



- *Smart Money* magazine indicated that consumers value a landscaped home up to 11.3 percent higher than its base price.

\*Source: NYC Parks and Recreations



# Economic Benefits



- ONLY City Amenity that appreciates over time
- New York city receives \$5.50 in economic benefit for \$1.00 spent on their trees

Source: New York City Parks and Recreation

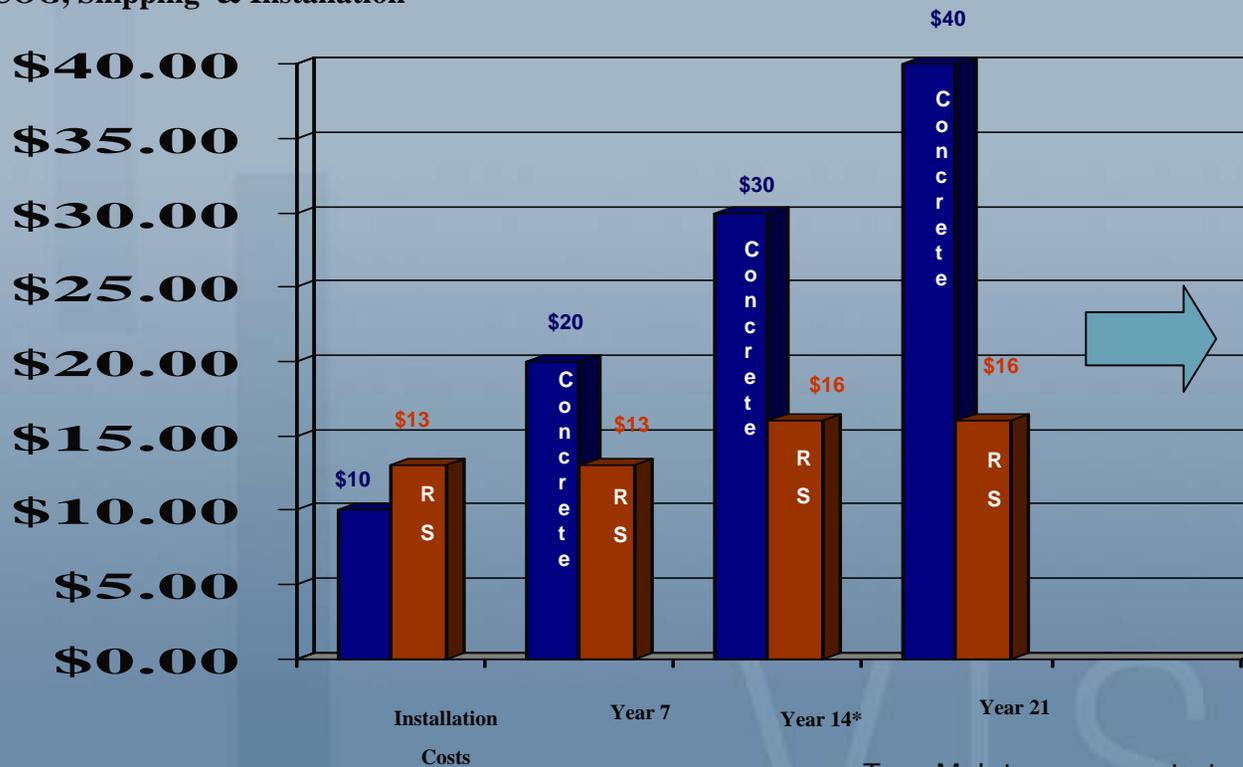


# Save \$20 pr/sf over 20 years



## Per Sq. Ft./US Dollars

COG, Shipping & Installation



Year 0 -\$3.00

Year 7 \$7.00

Year 14 \$14.00

Year 20 \$24.00

• Tree Maintenance cost at \$3.00 per/sf



# Sample Pilot Programs



## 1000 Square Feet

- Pilot Program
- \$9000 (parts and accessories)
- 10 sites
- \$9.00 sf, FOB

(Shipping Cost will be confirmed)



# What It Means To Your City



1,000 Sq. Ft. of Rubbersidewalks  
= 10 Trees Saved  
= \$650 In Economic Benefit  
Annual per Tree

Source: City of Los Angeles



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# INSTALLATION

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## The System

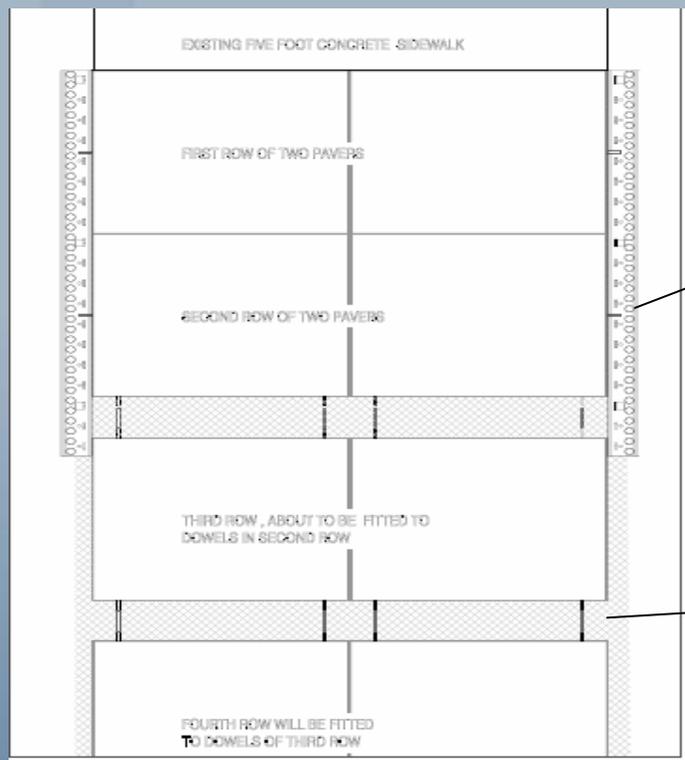
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# Modular/Interlocking





# Step 1-Break Out



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# Step 2 Prepare Bed





# Step 3 – Set & Lock Modules





# Step 3 – Cuts



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# Ready to Walk On



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# Contractor Support



Seattle DOT

- Installation Training DVD & Manual (in English and Spanish)
- CAD Drawings
- Spec Sheets



# Current Installations



Alameda, CA  
 Alhambra, CA  
 Albany, CA  
 Burbank, CA  
 Bakersfield, CA  
 Berkeley, CA  
 Camarillo, CA  
 Calvaras County, CA  
 Cerritos, CA  
 Concord, CA  
 Dublin, CA  
 Fillmore, CA  
 Fremont, CA  
 Glendale, CA  
 Hesperia, CA  
 Inglewood, CA  
 Lemon Grove, CA  
 Lompoc, CA  
 Long Beach, CA  
 Los Angeles, CA  
 LA Unified School District  
 Manteca, CA  
 Menlo Park, CA  
 Morro Bay, CA  
 Motion Pictures Fund  
 Novato, CA  
 Oakland, CA  
 Redwood City, CA  
 Riverside, CA  
 Sacramento, CA  
 San Fernando, CA  
 San Francisco, CA  
 San Leandro, CA  
 San Marino, CA  
 San Diego, CA  
 Santa Barbara, CA  
 Santa Fe Springs, CA  
 Santa Monica, CA  
 Stockton, CA  
 Thousand Oaks, CA  
 Ventura, CA



**Over 250,000 sf in over 90 cities, 20 states, 170 Installations, spec'd by city engineers, public works, and 'green' architects**



**Baltimore, November 2006**



**Washington, DC August 2006**



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**San Fernando, CA**

**July 2004**

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# Rubbersidewalks



**Dan Joyce**

**714-964-1400**

**[www.rubbersidewalks.com](http://www.rubbersidewalks.com)**

**[danjoyce@rubbersidewalks.com](mailto:danjoyce@rubbersidewalks.com)**

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