

## Case Study: Urban Forestry

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*The Urban Forest. London Government Website*

“Every year, 36 million trees come down in cities across the United States due to old age, disease and new development, resulting in economic losses up to \$786 million each year. Much of this wood could become valuable products, but instead often gets chipped, thrown in a landfill or burned as firewood. Rethinking urban wood waste could be an unexpected climate and economic solution, turning a burden on the climate and city budgets into a financial engine for reforestation across the broader landscape.”

World Resources Institute (Gartner and Christensen 2020)

Urban forestry refers to trees in the urban environment. London has, for example, an urban forest (London Urban Forest Partnership 2020). As London councils need to cut down trees for legal reasons or due to failing tree health, sawmills have been collecting these trees to turn into wood suitable for cabinetmaking and other similar purposes (Legislation.gov.uk 2021).

### **Benefits**

Because such trees have to be cut down, rescuing their wood for a high-value use has opened a new opportunity to realise a circular economy. As the wood needs a minimum amount of transportation the carbon footprint of urban wood is extremely low. Vibrant Cities Lab, in Washington DC, has led research on the benefits of urban wood, highlighting:

“Urban wood reuse can reduce greenhouse gas emissions, improve environmental quality, reclaim abandoned housing, stimulate new local enterprise and increase career opportunities for hard-to-employ individuals.” (Vibrant Cities Lab, 2021)

Another benefit of urban wood is the availability of rare and high-quality wood species. The species planted in cities are usually chosen for their aesthetic qualities, whereas forestry plantation trees are selected for speed of growth and ease of harvesting.

Urban trees are allowed to mature, it being in the interest of council tree officers to ensure their trees live long and healthy lives to reduce planting and removal costs. Urban trees are therefore more likely to reach a girth that makes them viable for sawmills.

Some species are extremely well suited to urban conditions. The London plane, a hybrid species, was originally planted in the city due to its hardiness and pollution resistance. In addition, its unique lace grain makes it a very desirable wood for cabinetmakers.

Walnut trees release chemicals in the soil to inhibit biodiversity and so reduce competition, which is problematic in most woodland management contexts. But as street trees are often isolated, walnut trees are great candidates to be planted in the urban environment. This would help the species to recover in England; the English Walnut tree is currently classified as 'Near Threatened' by the International Union for Conservation of Nature (Meier 2020). Walnut wood is dark, well grained and has excellent working properties, which makes it highly desirable to craftspeople, with walnut lumber selling for up to four times the price of oak (Brown 2011). A walnut tree takes at least 60 years to mature. In comparison pine trees typically take 25–30 years in the same environment (Gardening Channel 2021) to reach the required size to harvest. Consequently, planting pines is the investment preferred by many forest managers. There is also growing demand for urban orchards to feed local urban populations; walnut trees could provide a regular nut supply.

Instrument makers have found salvation in urban trees, due to these trees' capacity to fill in as replacement tonewoods. A tonewood is known for its aesthetically pleasing sound properties and such woods are a necessary material for musical instrument makers. Only certain types of trees are suitable and most of these are found close to the equator. However, recent research has shown that rosewood trees (traditionally a highly prized wood for guitar-making) replanted in the Amazon Forest after deforestation grew too rapidly, due the lack of shade. They lacked the compact grain and associated tonal characteristics found in rosewood harvested from old growth forest where young trees had been shaded by mature growth (Errede 2017). However, in urban environments, due to the shade of surrounding buildings, trees grow slowly and develop a close grain that gives tonewood properties, making many urban species suitable replacements for use in music instruments.

### **London's Urban Wood Supply**

Urban forestry relationships have been established in London. Bruce Saunders (Saunders Seasonings n.d.) is a sawmiller and maker who has established connections councils and tree surgeons to salvage urban trees. Saunders' promotes his lumber products as low carbon hardwoods and has received awards for his work. Bruce comments on his website:

“Over 5,000 mature trees are felled in London every year – oak, London plane, sycamore, ash and more. Most are simply chipped and burned. It's a huge waste. And when you consider 93% of hardwood sold in the UK is imported, it's also an environmental opportunity missed.”

Cabinetmakers such as Sand Buchanan (Sand Buchanan 2021), use urban forestry timber in studio cabinet making businesses.



*Left: Saunders Seasoning. Right: Furniture by Sand Buchanan*

Sand comments on the value that the individual histories of each piece of local wood bring to his practice and his journey towards sustainability:

“Only by understanding where they [materials] come from can you begin to understand the impact you are having by using them. Knowing which wood, estate, or street my timber has come from, I can understand why it was felled. In the case of my timber, it is because of storm damage, disease, or as part of a regulated woodland management plan. (...) Through my work, I hope to play a small part in supporting the forestry industry in the UK and am a firm believer that if we don't use it, we will lose it.” (Clanford 2020)

### **International Urban forestry**

The urban forestry model is winning supporters internationally. There is a growing trend for using urban wood to make musical instruments, as some rare species are now more readily available from urban forestry than any other source.

Clark's head of wood technology, Karl Krauss, head of a municipal council near Melbourne, Australia, saw his council removing sycamore-maple trees (Gibson and Warren 2021). He recalled their historical use in Renaissance instruments and salvaged them for a limited run of guitars.

In California, Taylor Guitars Inc. recently introduced three “Urban Ash” models made from trees felled by municipal governments in California and Arizona (Miller 2020). Taylors commitment to urban forestry now also extends to supporting city tree planting events, including replanting Shamel Ash, the same species they are now using to make guitars.

## References

- Brown, P., 2011. *Specieswatch: The English walnut*. The Guardian. <https://www.theguardian.com/environment/2011/apr/25/specieswatch-english-persian-walnut>. Accessed 03.12.2021.
- Clanford, D., 2020. *Sand Buchanan on childhood influences, material sustainability and the healing power of design and making..* Material Source. <https://www.materialsource.co.uk/thinking-about-where-their-furniture-comes-from-who-made-it-where-the-materials-are-sourced-and-the-story-behind-it/>. Accessed 03.12.2021.
- Errede, S., 2017. *Sustainability and Musical Instruments*. Department of Physics, University of Illinois. [https://courses.physics.illinois.edu/phys406/sp2017/Lecture\\_Notes/P406POM\\_Lecture\\_Notes/P406POM\\_Lect16.pdf](https://courses.physics.illinois.edu/phys406/sp2017/Lecture_Notes/P406POM_Lecture_Notes/P406POM_Lect16.pdf). Accessed 03.12.2021.
- Gardening Channel, 2021. *How Fast Do Pine Trees Grow?*. <https://www.gardeningchannel.com/how-fast-do-pine-trees-grow/>. Accessed 03.12.2021.
- Gartner, T. and Christensen, B., 2020. *Bringing New Life to Fallen Urban Trees*. World Resources Institute. <https://www.wri.org/insights/bringing-new-life-fallen-urban-trees>. Accessed 03.12.2021.
- Gibson, C. and Warren, A., 2021. *Friday essay: the guitar industry's hidden environmental problem — and the people trying to fix it*. The Conversation. <https://theconversation.com/friday-essay-the-guitar-industrys-hidden-environmental-problem-and-the-people-trying-to-fix-it-159211>. Accessed 03.12.2021.
- Legislation.gov.uk, 2021. *Highways Act 1980*. <https://www.legislation.gov.uk/ukpga/1980/66>. Accessed 03.12.2021.
- London Urban Forest Partnership, 2020. *London Urban Forest Plan*. [https://www.london.gov.uk/sites/default/files/londonurbanforestplan\\_final.pdf](https://www.london.gov.uk/sites/default/files/londonurbanforestplan_final.pdf). Accessed 03.12.2021.
- Meier, E., 2020. *Restricted and Endangered Wood Species*. The Wood Database. <https://www.wood-database.com/wood-articles/restricted-and-endangered-wood-species/>. Accessed 03.12.2021.
- Miller, K., 2020. *Taylor Guitars Take On a Shade of Green*. Bloomberg Green. <https://www.bloomberg.com/features/2020-taylor-guitars-sustainability/>. Accessed 03.12.2021.
- Sand Buchanan. 2021. *Sand Buchanan*. <https://sandbuchanan.co.uk/>. Accessed 03.12.2021.
- Saunders Seasonings, n.d.. *Hardwood Timber London - Repurposed Timber*. <https://www.saunders-seasonings.co.uk/>. Accessed 03.12.2021.
- Vibrant Cities Lab, n.d.. *Sacramento, CA: Sequestering Carbon Through Urban Lumber Salvage*. <https://www.vibrantcitieslab.com/case-studies/sequestering-carbon-through-urban-lumber-salvage/>. Accessed 03.12.2021.
- Vibrant Cities Lab, n.d.. *Benefits*. <https://www.vibrantcitieslab.com/research/benefits/>. Accessed 03.12.2021.