Urban Forest Accelerator Case Study:

The Evaluator
We'll figure it out for you

Tree Equity

What is tree equity? Tree equity is a concept of justice, stating that all members of society should have the same access to trees. What this means in principle is that local authorities and other bodies need to try and make sure that areas have similar levels of canopy cover. As the stereotype 'leafy suburbia' demonstrates, some wealthier individuals have much higher levels of greenery around their neighbourhoods than in inner city areas. Fixing this requires an equitable distribution of assets – namely trees.

Ultimately planting and nurturing more trees in areas with the least amount of canopy cover is needed.

Tree equity is generally calculated using a range of factors; percent canopy cover, air pollution, the indices of multiple deprivation and heat disparity.

The Woodland Trust have worked with American Forests and the Centre for Sustainable Healthcare to produce a tree equity score tool for the UK. You can find it at: Tree Equity Score UK.

WHY TREE EQUITY MATTERS?

Firstly, tree equity is about equity of access. There are many benefits to trees, and they should be accessible to all.

Birmingham Tree People shared their thoughts on Tree Equity:

"It's ensuring that everybody in the city can have that access to a space with trees in it and benefit from those services they provide, whether that be part of the just being in a green space...whether they realise the benefits or not, being in that green space and then benefiting from things like the urban cooling, benefiting from seeing biodiversity, the birds in the trees."

This drive for tree equity matters in many ways, particularly for the people who live there. **"It is primarily about their health and well-being and how trees and green infrastructure are a key part in tackling those climate impacts on deprived communities...they are the ones who are most impacted."**

Tree equity isn't just about fairness and being good for the community, it also makes financial sense. **"In our natural capital accounts, I think we've said that for every pound invested in green infrastructure in the city returns about 24 pounds in societal benefits."**

Tree equity is a vital component in improving life chances overall **"If we bring this part of the city up to 25 percent canopy cover, the benefits of this are, additional carbon sequestration, reduction in stormwater, surface water flooding. Living in proximity to this are, you know, 200 people who'll have that tree outside their houses. You know, they're going to benefit directly from the urban shade, the air cooling, the air quality interceptions."**

HOW HAVE BIRMINGHAM TREE PEOPLE USED TREE EQUITY

Using a Tree Equity map can help to immediately see where deprived areas are, and visually show which areas are of highest priority in terms of tree equity. Birmingham Tree People said, **"in terms of how we can map and display...the graphics that you get, have been invaluable."**

Using colours to help distinguish between higher and lower priority areas, means that people can see at a glance where to plant. Darker colours indicate the higher priority areas, which need to be the focus of tree planting, if equity is a goal.

Tree equity is a score-based system from 1 to 100 **"from the numbers...below 60 is the highest priority".** A score of 100 means the neighbourhood has met a minimum standard for tree cover in that area.

Treeconomics have worked with a number of local authorities and city councils to use this. This helped Birmingham and others to easily identify areas in need, **"Very dark red, it's quite visual. Here's the problem."** Enabling at a glance to pinpoint local areas with high needs.

Using a tree equity score can assist with deciding which places need help first and which should be prioritised. Treeconomics helped explain how maps support decision making; **"tree equity is the thing that's driving the decision ... we then overlay a residential element to that."** Using these two overlaid maps allows an understanding of exact locations and their LSOAs (Lower Super Output Area). Dividing down into LSOAs helps to visualise where the denser populations are **"That's about 1500 people, 650 households. We've got 639 of those across the city."** Explained Birmingham Tree People.

"Now, they've got the wards, sitting over the actual LSOA areas underneath, so a council can see the nuances within their ward, and also there's an aggregate [Tree equity] score for their ward." Said a member from Treeconomics, whilst demonstrating how to use a map overlay.

Local Authorities can be given an overall average tree equity score. However that value can be quite deceiving and it's not a good idea to use averages. It's better to use the minimum area score, as averages can hide low-scoring areas. For example, Treeconomics explain **"I don't like averaging the tree equity score, because if you have some high [scores] and some low [scores]"**, the high scores may outweigh the low scores and could potentially decrease the priority of an area. **"If you've got a forty in there you lose it. If you've also got a ninety in there, the whole thing, [will average out to] seventy ... so we take the minimum [score], so if there's a 45 in there, the whole thing's called 45."**

CHOOSING WHERE TO PLANT AT WARD LEVEL

There are some key areas that Birmingham Tree People have focused on **"we want to put another 50 trees in Bromford"** and places with **"Victorian terraced houses in Alum Rock or Aston...very harsh streets, small yards, small houses, busy roads, factory at the end of the road... those are the low-income [areas]"** . Using tree equity helps to clearly identify and focus on more low income areas rather than high income areas. The differences are clear, and numerical. **"Areas around Sutton are 49 percent canopy cover...Those are the places where the wealthy people live."**

Birmingham Tree People have not focussed purely on the worst scoring places in terms of tree equity, but they have also found places that need help for other reasons. For example; they have worked in areas that are losing a lot of trees and wanting to find ways to help sustain them. **"Alum Rock is one of the areas that may not necessarily be absolutely the worst or the next worst. However, when we looked at the level of trees that we were losing in there, it was one of the areas that we were seeing the highest level of attrition."**

Choosing where to plant trees can depend on funding. For example; if two places have similar tree equity scores, but one qualifies for match funding and one doesn't, this will have an impact. Tree professionals were pragmatic, realising that this is often the case.

The difficulty of prioritising where to help, for Birmingham Tree People, became a difficult matter when choosing between the highest priority or where funding can go further, **"you don't want to put all your energy into the hardest areas, because that makes your budget not go as far"** or the conflict between choosing a worse area where the population isn't as large, where the changes wouldn't affect as many people, or going more urban to increase the amount of people impacted. **"You could end up spending all your time and energy on some small area".**

Another factor on which areas to use to make decisions was how they can be targeted to positively impact as many people as possible **"could it [be] per head in the local...how many heads are there nearby? That will show the benefit of those more deprived areas...there's more people in a smaller area...more turnover".** There is often **"a bigger turnover in [the] inner city than in leafy suburbs"** acknowledged Birmingham Tree People.

CHOOSING WHERE TO PLANT AT STREET LEVEL

A GUIDE BY TREECONOMICS:

Planting trees in more urban areas comes with more challenges when choosing where to plant trees and considering how possible it is to do so. **"We divide them into three types of tree planting"** from 'Easy' to plant, to 'Standard' to 'Difficult' to plant. The differences are **"can you rock up to the space tomorrow [and just plant a tree]? Do you need to contract or into dig a hole? Or do you need to re-engineer the street?"** Re-engineering a street is the most difficult outcome as it can include services, underground pipes, narrow pavements that can't fit a tree, or allow access for pedestrians to walk along, and other difficulties.

When making decisions to plant trees, the ground must be suitable to be able to support a tree and the ease of planting the tree in that location **"It's split by surface, a natural and man-made surface... If it's a hard [man-made] surface, a contractor [is needed] to lift the paving slabs, dig a hole".** Natural surfaces are easier to plant in, but Tree Equity are focussing their planning on how to plant in more difficult locations.

Another area that decreases the number of locations where trees can be planted **"is underground services [that] we don't have the power to change...major re-engineering of a road."** To plant trees means that you need the access and ability to do so.

"We want to put new cycleways through. We want new tram systems through, and they all take up space. The beautiful thing with trees is they take up way less space at street level than they do up in the air with the canopy."

Treeconomics will tend to suggest planting on pavements which are two metres wide, taking into consideration **"being able to walk, push prams, wheelchairs [and] the guideline for minimum accessibility requirements."**

CHOOSING WHICH TREES TO PLANT

A GUIDE BY BIRMINGHAM TREE PEOPLE

"Which trees are planted is going to be dictated by the available space, the above ground space, the below ground space, and what else is already there" explained Birmingham Tree People. All trees are different and choosing the right tree, to be able to fit onto areas such as pedestrian pavements, is crucial.

Looking at what trees are already planted has influenced Birmingham Tree People to think about what trees should or should not be chosen. **"Parts of the city are dominated by hybrid limes...because they are one of the few trees that cope [with] poor air quality"** however, Hybrid Lime trees come with many management issues. In the current climate, looking at trees that are resilient to climate change, pest and diseases, can also be a good place to start.

What trees are good to avoid? **"We're using data around [the UKs] composition of trees, we're already heavy on trees in the rose family, so we need to be focusing on something else to provide resilience."** sharing the cautionary tale, **"In the 70s, Dutch elm disease came in, took out all of the elm trees in the city ...[in] Birmingham around 10% of our street trees were ash"**.

Established and mature trees are replaceable but losing them takes years to regain their benefits. **"Because they're all mature, it's going to take 60-70 years for new trees to get to functioning the same way".**

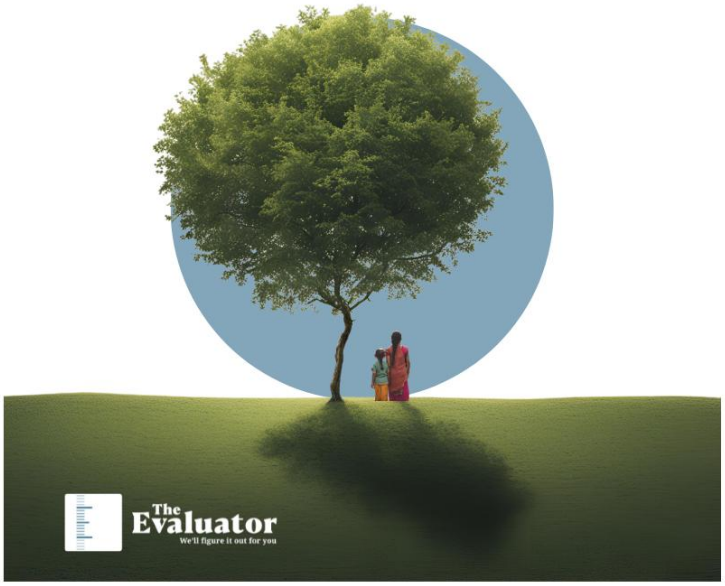
Minimising that risk and **"planting a diversity of species [means] not losing that many in any one go [due to] a new pest or disease, or a climatic change".**

Birmingham Tree People try to procure and plant bio-secure trees, but that isn't always the case with amateur gardeners and imported plants. This runs the risk of some deadly pests **"Asian Longhorn beetle larvae - it's such a prolific species...you have to fell every tree within a 50-metre radius to control it"**, Purchasing bio-secure trees does have a knock-on effect on the pricing of trees, **"The more bio secure, the more expensive"**.

"UK native species aren't great for growing in an urban environment". This led to looking at trees globally, for species that will be able to cope with predicted heat. For example, Birmingham Tree People are now looking at species like **"beech that were very predominant in the Chilterns are starting to fail...but as those beech trees can't survive in that climatic environment, they're going to move further north."** Where they might just find a happy new home in Birmingham.

Birmingham Tree People believe that bigger trees have a larger ecological impact on the surrounding environment than smaller trees. Big trees are also less likely to be removed than smaller trees **"We've changed our model completely to planting big trees."**

Planting big trees comes with their own challenges, **"The problem is big trees need several people to dig a big hole, it will take them about half an hour to an hour because it [needs] to be a big hole"** as a lot of trees needed planting, to increase the canopy cover in certain areas, a contractor is likely to be and paid to dig the holes. Another problem is **"the trees are too big to get off the wagon by one or two people...the city council staff [need] to take them off the wagon"**



COMMUNITY ENGAGEMENT IN TREE PLANTING

Planting bigger trees does have an impact on community engagement for the organisation too. This means that creative activities have to be included **"to engage people in tree planting [but not] necessarily planting the tree...so our work has been thinking about poems, songs, decorating trees...celebratory things that you can do to say we've planted a tree [and] it's a big deal".** This has knock-on impacts on capacity too, which is often challenging for a small organisation.

Tree equity isn't just about planting trees, but also where to focus attention. Birmingham Tree People wanted to focus on keeping and looking after the trees already planted **"the biggest benefits you're going to get [are] from keeping the trees that you've already got"** therefore, **"if area is on the verge of becoming really bad, can you do something about that now?"** said the organisation. They used mapping and aerial analysis and **"we could see that there was tree loss occurring, particularly in gardens"**. Engaging the community to think about the benefits of keeping the trees in their gardens is an important plan for the future.

TREE EQUITY WORK IS LONG LASTING

Creating more equitable access to trees will bring benefits for decades to come. **"Conservatively a third of the population of that area [are] going to benefit from it, in the thousands, not the not the hundreds."** Plant a **"tree this year and if you've established it well, it's going to be there for the next 60, 70, 80 years"** explained Birmingham Tree People, with a concluding thought that **"The societal benefits are much greater and the knock-on impacts for reduction in cost of NHS, increased productivity for workforce, reduced sick leave [are huge] This is about changing people's lives by giving them something green in their day-to-day existence."**