



## BREATHE, YOU'VE GONE GREEN.

### For health, wellbeing and better air quality

More trees mean better health. Trees can clean the air, cool the temperature, quieten the noise and lighten your mood. Planting more trees means investing in our future health and cutting the future costs of health care, too. It's also a strategy that benefits the most vulnerable in society.

**As you read this, pause for breath. The average human being will inhale 250 million litres of air during their lifetime, making clean air, alongside clean water and healthy food an absolutely fundamental part of any healthy society.**

Across the world however, we are moving rapidly in the wrong direction. There is mounting alarm that the quality of our air is failing and, as a result, lives are being cut short and local neighbourhoods, particularly in poorer areas, are bearing the brunt.

According to a new report from the Royal College of Physicians (RCP)<sup>1</sup>, every year around 40,000 deaths can be attributed to outdoor air pollution. Once you add indoor air pollution the toll climbs higher still. In its report, entitled 'Every Breath We Take', the RCP states that air pollution is now an urgent cause for concern on public health and has been linked to cancer, asthma, stroke and heart disease, diabetes, obesity, and even to dementia.

And here's the real wake up call in the report. Even though we're 'breaching' air quality limits set by the EU across a number of UK cities, it really isn't that meaningful a calculation. The fact is there is no safe limit, at all, for these pollutants.

The conclusion drawn by the RCP and others is that what we really need is urgent action, and a new Clean Air Act, to halt the inexorable rise of air pollution that is costing lives and weighing in hard on stretched NHS resources.

1. <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>



# 250m

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The average human being will inhale 250 million litres of air during their lifetime

**In cities like Manchester, airborne pollution comes largely from traffic and, more specifically, diesel engines. This pollution affects you throughout your life but is particularly dangerous for babies in the womb and toddlers, as their growing heart, brain, hormone systems and immunity can all be harmed.**

Older people, and adults with long-term health conditions, are also vulnerable.

Fairness is a factor. Pollution hits those who live in deprived areas hardest. These areas often have higher levels of air pollution, and it impacts those who live, learn or work near busy roads and those who, ironically, are least likely to own a car.

All this comes at a cost. According to the RCP, costs from exposure to air pollution add up to more than £20 billion every year for business, insurance, social services and most critically of course, the NHS.

# 40,000

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deaths per year can be attributed to outdoor air pollution

**Planting more trees and protecting those that we already have in our northern towns and cities is an important part of the solution. It's also considerably cheaper as a strategy than waiting until ill health hits and seeing the impact in our hospitals and health centres; the NHS is stretched enough already.**

Particulate matter (PM) is the microscopic particles that become trapped in the lungs of people breathing polluted air. It comes from a range of sources but in our urban areas, road traffic is the key culprit. Well considered and planned urban trees can, according to one study by US-based The Nature Conservancy, reduce particulate matter near a tree by between 7% and 24%. It also stated that, on average, trees can cool an urban area by 2°C<sup>2</sup>.



A study, led by Lancaster University, explored in more detail how the leaves of roadside trees could radically cut pollution by absorbing particulates, even inside people's homes. One of the more sinister facts about particulates is that if you live on a busy road, they can impact on you in your home.

The Lancaster-led study team lined a terraced street in their home town with silver birch trees in planters and measured pollution levels (PM1, PM2.5 & PM10) inside the homes before and after the trees had been put in place. They saw pollution levels in these homes drop by more than half once the roadside trees had been put in place.<sup>3</sup>

As ever, the right tree in the right place is the mantra to follow. Trees with 'hairy leaves' do a great job of cutting pollution, but care needs to be taken over creating dense canopies that could potentially stop particulates from dissipating. One recent study examining this factor led to ill-judged headlines about street trees 'causing pollution'; a particularly unfair conclusion to draw given that it's the road traffic creating particulate emissions. For older streets, the trees could well have been planted well before cars became such a major factor in our urban centres. Research has shown that this so-called 'canyon effect', where pollution gets trapped by buildings alongside roads, can be helped by planting trees and vegetation, cutting Nitrogen Dioxide pollution by up to 40% and particulates by up to 60%.<sup>4</sup>

**More trees mean a stronger society. An increase in mixed-use, accessible areas of woodland will bring direct and immediate health benefits. Happier and healthier communities are ones where green space – and particularly trees – have a major part to play. Across the North of England there is a clear health challenge to be grasped that's much wider than just air quality, and investing in community forests could be critical.**

Trees on average can cool an urban area by 2°C

Just one case study from Chicago comparing people living in flats with, or without, a view of trees and grass found that a greener environment reduced stress in children; increased concentration and self discipline; reduced symptoms of ADHD; increased the amount of play for local children; halved the incidence of violent crimes and domestic violence; increased strength of community; and increased the ability of the poorest single parent mothers to cope with major life issues.<sup>5</sup>

Trees make life more liveable. Woodlands are restorative environments, they can screen out noise from nearby traffic, they can absorb large numbers of people without seeming crowded, and offer a range of activities from gentle to vigorous, including walking, cycling, horse-riding, nature trails, picnics and mountain biking. It's nature's playground.

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2. [www.nature.org/healthyair](http://www.nature.org/healthyair)

3. Mather et al, *Environ. Sci. Technol.*, 2013, 47 (23), p 13737-13744

4. Pugh et al, *Environ. Sci. Technol.* 2012, 46, 7692-7699

5. <http://onlinelibrary.wiley.com/doi/10.1111/j.1758-0854.2011.01052.x/abstract>



Getting people active by greening their environment has to be a clear priority. Over the last two decades, obesity amongst the adult male population has increased from 13% to 27%. The figures are similar for women. By 2050 the forecast is for 60% of men, 50% of women and 25% of children to be officially classed as obese. The accompanying cost of this massive health problem has been forecast at £50 billion. Any measures that can get people moving and losing weight will be hugely beneficial to the public purse and the wider economy.<sup>6</sup>

Greening our towns and cities, and achieving a culture shift where more people, particularly in deprived communities, feel motivated to get out and get active in a woodland setting, is a well-established strategy throughout the community forests movement. But more needs to be done. Twenty-eight million people in England live within 4km (a cycle ride) of a publicly accessible woodland, yet there are still barriers to people enjoying them, with people feeling that woodlands aren't genuinely accessible or are too far away. This, coupled with a lack of knowledge about the facilities on offer or simple safety concerns can all play a part in people not taking advantage of them.

# 28m

people in England live within 4km (a cycle ride) of a publicly accessible woodland

**From mental health, to physical activity to the safety of the air we breathe, trees have a clear and urgent role to play in helping address a problem, which has a profound social and economic impact. In Greater Manchester this year around 1,300 people will die due to illnesses connected to air pollution.<sup>7</sup> In Leeds the estimate is even higher at around 2,500 deaths, costing the local NHS across the city £480 million.<sup>8</sup> The sooner we replicate Lancaster University's experiment and line every street with trees, the quicker we'll reap the very tangible benefits.**

6. [https://www.noo.org.uk/NOO\\_about\\_obesity](https://www.noo.org.uk/NOO_about_obesity)

7. Public Health England / Committee on the Medical Effects of Air Pollutants (COMEAP)

8. <http://www.yorkshireeveningpost.co.uk/news/leeds-named-hotspot-for-air-pollution-deaths-as-epidemic-costs-local-nhs-480m-1-7698344>

## About City of Trees

City of Trees is an innovative and exciting movement, set to reinvigorate Greater Manchester's landscape by restoring underused, unloved woodland and planting 3 million trees – one for every man, woman and child that lives in the City Region, within a generation.

Initiated by The Oglesby Charitable Trust and Community Forest Trust, this ambitious movement is securing a much greener, more resilient and pleasant environment that everyone can enjoy.

[cityoftrees.org.uk](http://cityoftrees.org.uk)  [@cityoftrees](https://twitter.com/cityoftrees)

This briefing is an adapted version of a manifesto originally authored on behalf of the Northern Forest. City of Trees would like to extend its thanks for the permitted use.

