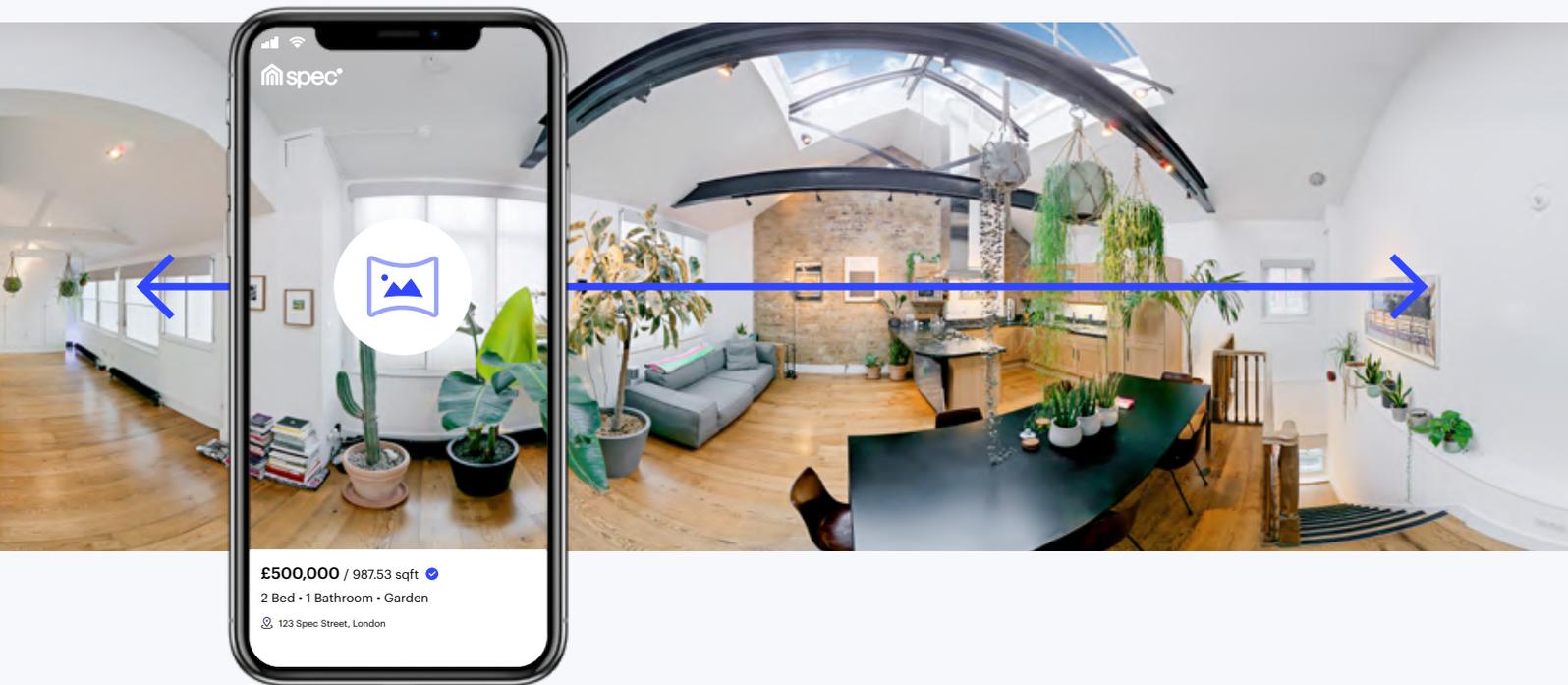


Building the new standard:

How Spec virtual viewings are reducing carbon emissions



The climate and air quality crisis facing the UK



Carbon dioxide emissions need to fall by **45%** from 2010 levels by 2030^[1].



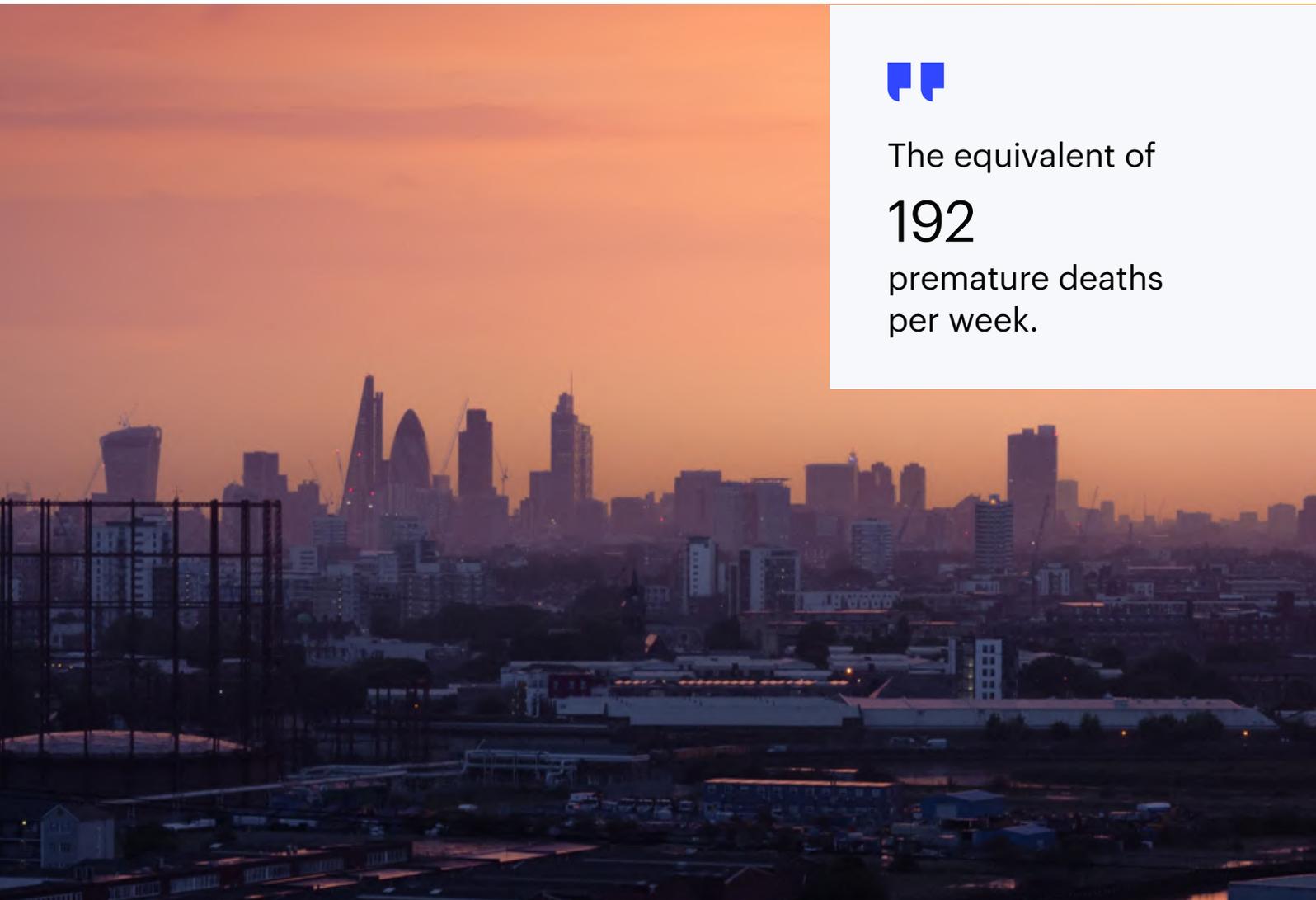
Emissions from road transport account for **21%** of the UK's carbon footprint^[3].



These emissions from road transport are linked to **10,000** premature deaths in the UK annually^[5].



The equivalent of **192** premature deaths per week.



Key research findings:

The potential impact of Spec virtual tours to take cars off the road in the UK



51,500
cars off the road every year.



Equivalent to removing
the carbon footprint of
11,800
households.



A reduction of
410,000,000
miles driven.



The equivalent to driving
16,465 times around the world.

Building the new standard:

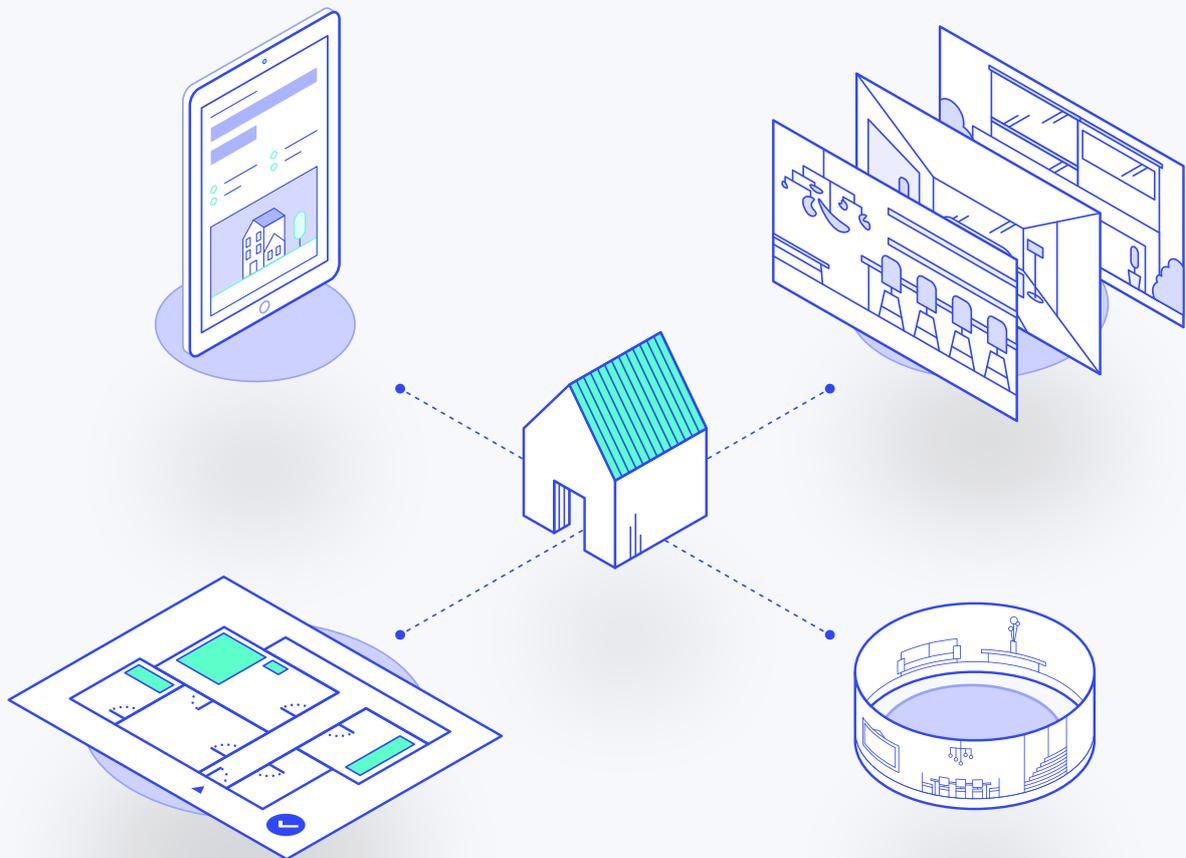
How Spec is taking cars off the road



Changing behaviour with immersive, trusted digital assets

Whether it's global warming or dangerous local air pollution, the fewer journeys people take in cars, the better the outcome for individuals and the planet. One of the first benefits delivered with Spec is a change in perception of how we view properties.

We're seeing the physical journey to the property for a viewing happen less frequently, as people make more use of Spec's game-changing virtual tours and Spec Verified accurate floor plans to view properties remotely.



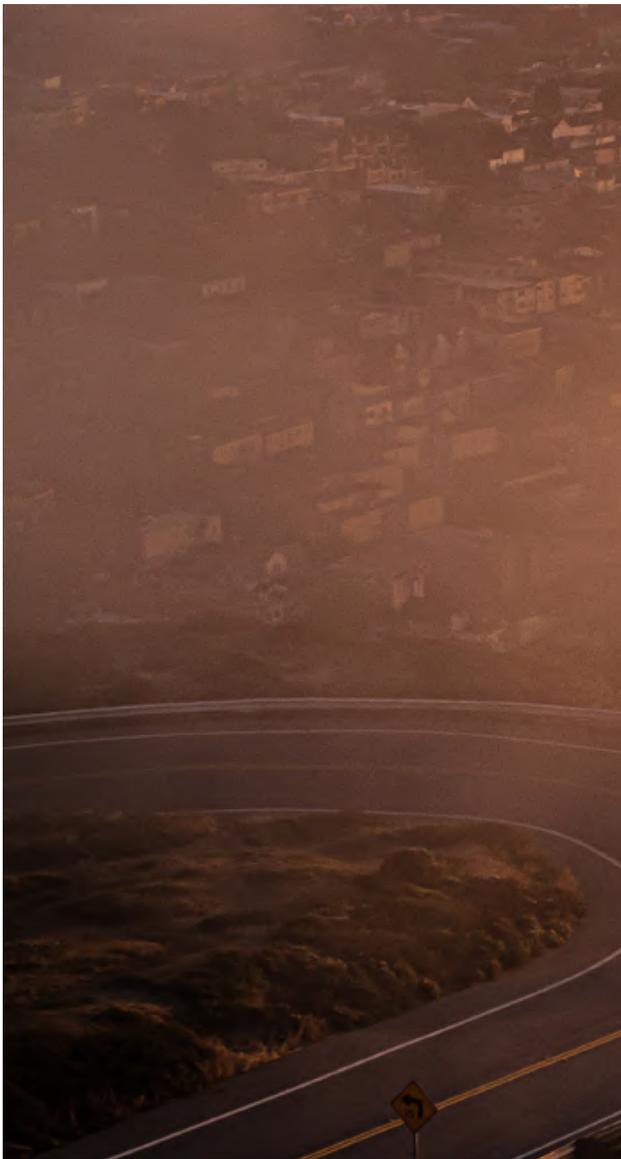
Why fewer car journeys matters now more than ever

The climate catastrophe is the defining issue of our time. So says the UN, which also notes the need for significant action to reduce human made greenhouse gas (GHG) emissions and avoid a catastrophic future.

The UNFCCC's Fifth Assessment Report found there would be clear benefits to people by

limiting average global warming to 1.5°C compared to 2°C. But to achieve 1.5°C will take significant and systematic change.

Human-caused carbon dioxide emissions would need to fall **45% from 2010 levels by 2030** — and net zero emissions would need to be achieved by 2050 [1].



Carbon dioxide emissions needs to fall by

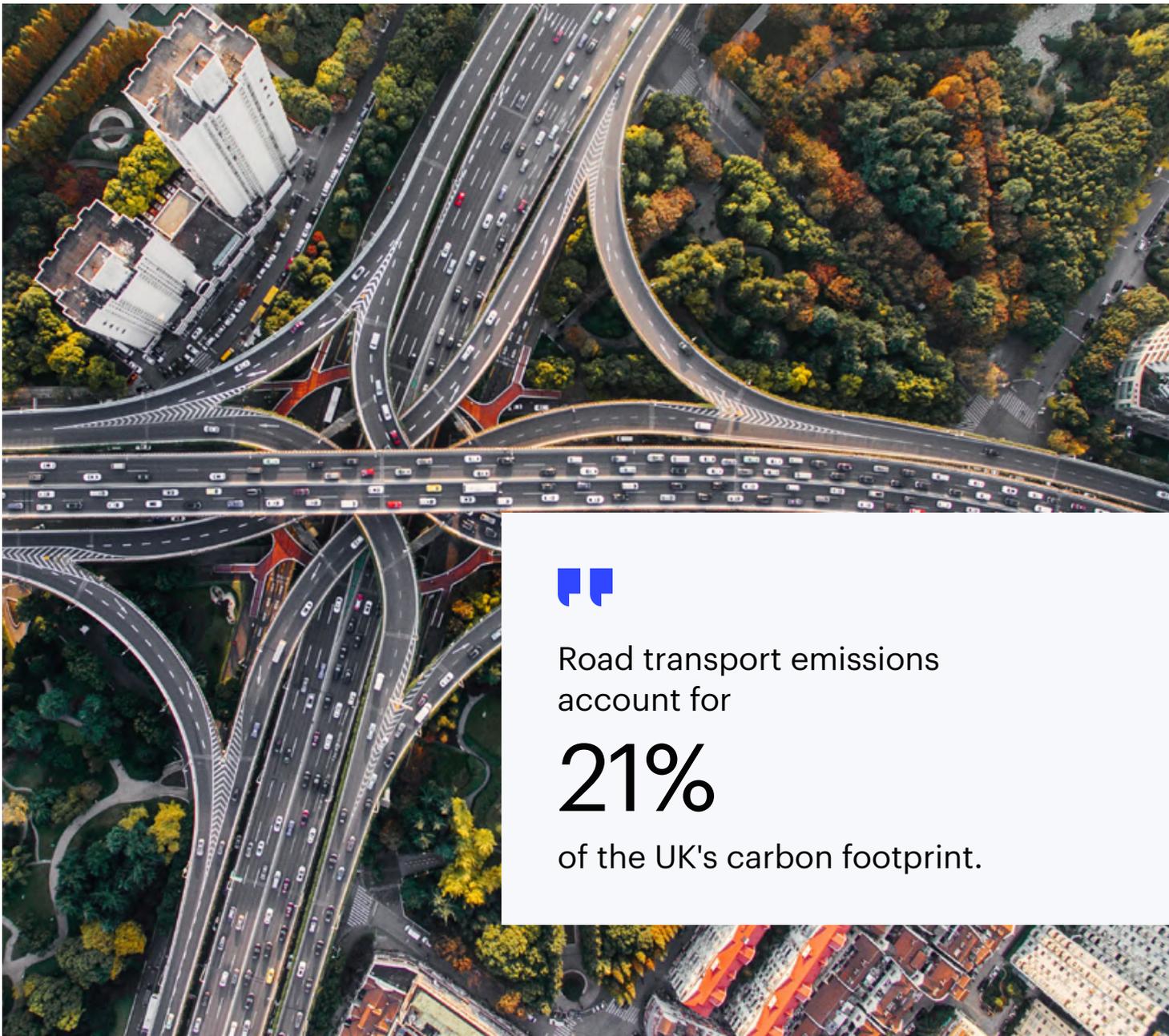
45%

by 2030.

Fundamental changes are needed

Responding to the need for action, in 2019 the UK government became the first major economy to set its **2050 net zero emission commitment** into law [2]. Achieving net zero GHG emissions by 2050 will require changes in the way our energy is produced, our economy is structured and the way individuals live.

Currently road transport emissions account for a **massive 21% of the UK carbon footprint** [3]. Reducing this part of our footprint will require a combination of improving vehicle technology and fewer miles driven.



Road transport emissions account for

21%

of the UK's carbon footprint.

Poor air quality has tragic consequences

Exposure to high levels of air pollution can have tragic consequences on people's health. Not to mention the burden it places on the health service and disruption it causes to business.

The Royal College of Physicians meta-analysis of the impacts of air pollution found air pollution adversely affects the health of people of all ages [4], including the following:

- Children living in highly polluted areas are **four times more likely** to have significantly reduced lung function in adulthood
- Outdoor air pollution is associated with new-onset asthma for both children and adults
- In particular, children living or going to school in close proximity to a major road face a **29% increased risk of new-onset asthma** and exposure to high outdoor air pollution increases the chance an adult will develop type 2 diabetes
- Low air quality worsens existing heart conditions and leads to cardiovascular disease, which is the **biggest killer in the UK**
- Short-term exposure to particulate pollutants increases the likelihood of stroke and mortality from a stroke on the day of exposure



The RCP's study also found reducing exposure to air pollution can reverse the effect of reduced lung function. That means **cleaning up pollution in urban areas will not only stop further cases of illness, it will also help people recover from the effects of historic air pollution.**

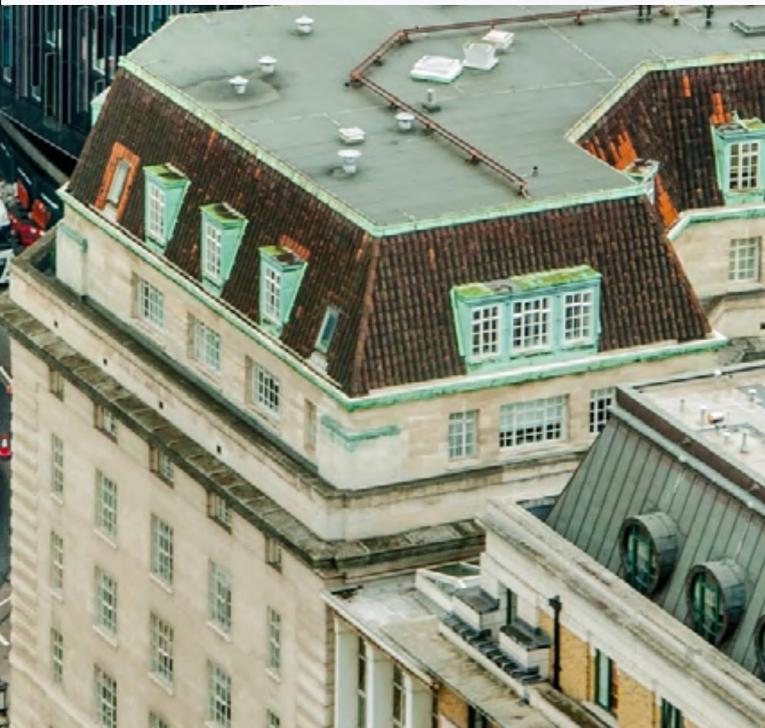
- Across the UK over **one in ten roads** breach the legal limit for nitrogen dioxide pollution and **95%** of these roads are in cities [6].
- The effect of outdoor air pollution costs UK society is astonishing - **up to £71 billion a year.**
- The release of particulate matter (PM2.5) and nitrogen oxides (NOx) is linked to around **40,000 premature deaths per year, of which a staggering 10,000 are attributable to road transport** [5].



The release of emissions from road transport is linked to

10,000

premature deaths in the UK.



Looking to the future, Public Health England estimates around **2.5 million** new cases of coronary heart disease, stroke, lung cancer and other health conditions could be attributable to air pollution by 2035 if pollution levels don't decrease [7].

Reducing emissions from road transport is pivotal to the UK Government's 2019 Clean Air Strategy. This strategy focuses on improving vehicle standards and investing in cleaner transport methods.

The picture is clear

Reducing the number of miles driven on the UK's roads is vital to cleaning up our air and transforming our nation's health.



If pollution levels don't decrease, by 2035, there'll be around

2,500,000

new cases of heart disease, stroke, cancer and other health conditions due to air pollution.



Spec's journey to replace tens of millions of physical viewings

Trust is at the heart of how we reduce the number of physical property viewings taken. And trust is the very thing at the heart of the Spec experience. It's central to how its virtual viewings and Spec Verified assets are changing the way properties are bought, sold, rented and lived in.

Spec is committed to a zero-emission transportation strategy for our Digital Surveyors. So they use existing and

emerging technology to move around the city emission-free. Route optimisation software makes them more efficient and eliminates unnecessary journeys.

Spec uses revolutionary 3D cameras as part of an affordable, end-to-end proprietary technology solution. We quickly deliver professional photos, mm-accurate floor plans, and virtual tours for each residential property captured.



The floor plans are Spec Verified. That means they come from a source of truth for residential property measurement. That's because Spec Verified floor plans are guaranteed accurate to a property's true size and that's truly game changing for house hunters. As Spec's mismeasurement white paper found that properties are on average mismeasured by 54sqft, with 1 in 8 being 100sqft wrong [9].

They eliminate the need for disclaimers such as "for illustrative purposes only" and "all measurements are approximate". So that when prospective renters and buyers engage with Spec digital assets they do so with a heightened level of confidence in what they're looking at.

Building trust between parties based on an authentic feeling of being in a space and guaranteed accurate measurement data, allows decisions to be made about properties without the need for physical visits.

By replacing every single first physical viewing with a virtual viewing, we take **51,500** cars off the road, remove the carbon footprint of a remarkable **11,800** houses from the atmosphere and prevent an astounding **410 million** miles from being driven.

This directly results in a dramatic reduction in cardiovascular disease, diabetes, stroke, lung cancer, Asthma and other life-limiting illnesses and, ultimately, premature deaths.



Transforming the fundamentals of property transactions

Based on 2017 and 2018, there are around **26.8 million property viewings across the UK**. All of which could be replaced with virtual viewings [10] & [11].



In a year across the UK

26,800,000

property viewings could be replaced with virtual viewings.



Meanwhile, Spec's virtual viewings are changing the way properties are bought, sold and rented.

If each of the **26.8 million property viewings** detailed above were replaced with a virtual viewing, that in turn would lead to a combined reduction in driving by estate agents and prospective renter/buyers of **410 million miles** driven across the UK — every year.





With the trust inspired in people by Spec Verified assets and virtual tours we could see miles driven in UK reduced by:

**410,000,000
miles a year**



The mileage figures mentioned above are **the equivalent of taking 51,500 cars off the road in the rest of the UK**. This would dramatically reduce local air pollution and the associated human health impacts.

It would also be the equivalent of reducing GHG emissions by **95,300 tonnes of carbon dioxide**. That's the same carbon footprint as 11,800 UK households or a medium-size town.



In a single year, the adoption of Spec virtual tours across the UK would result in the equivalent of

taking

51,500 cars

off the road

reducing greenhouse emissions by

95,300 tonnes

the same carbon footprint as

11,800 homes

Building the new standard:

Future benefits of Spec on society

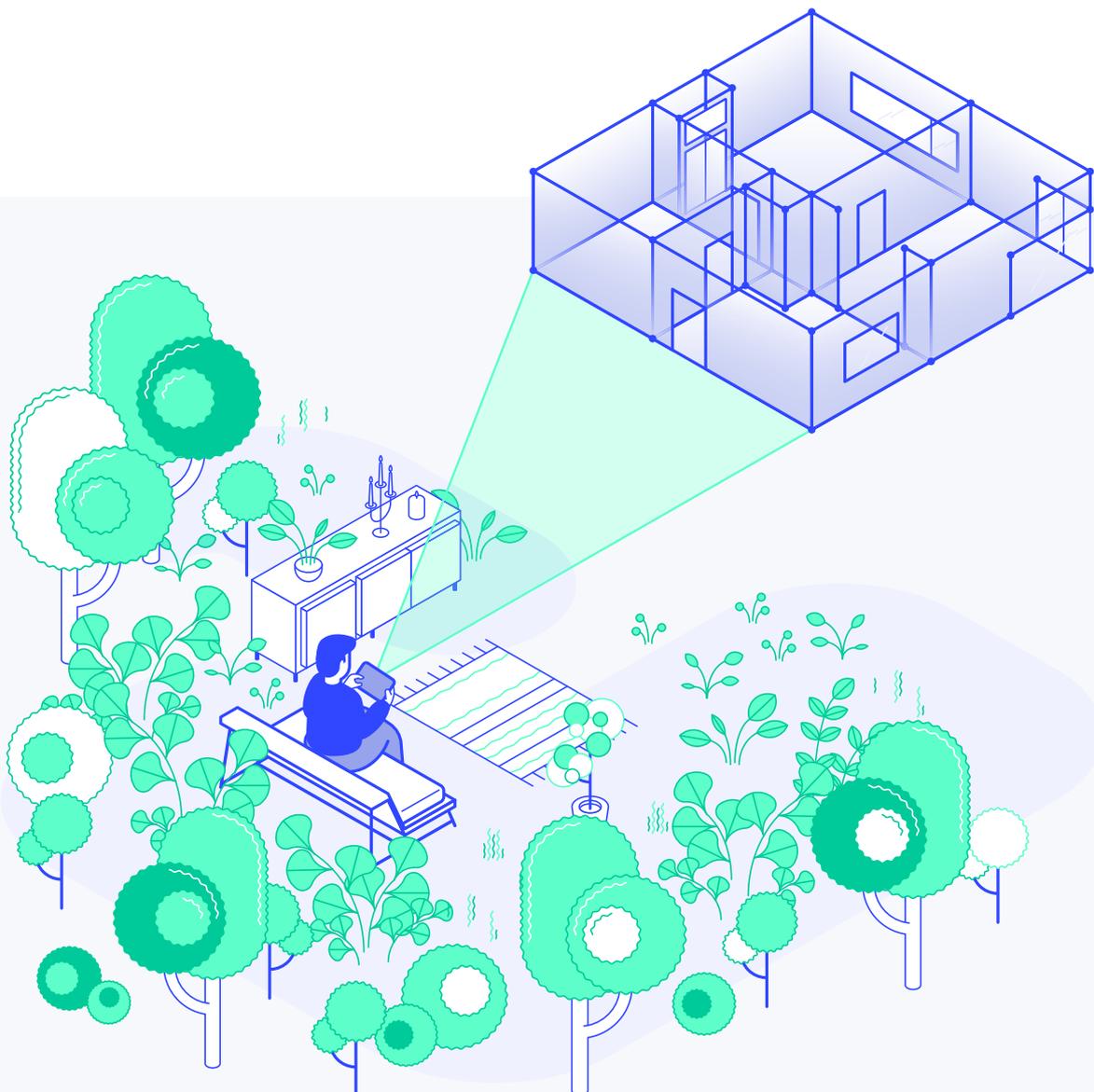




Spec will not only reduce carbon emissions and save lives through the property industry, but across industries and on a global scale.

Increased efficiency across the property transaction process is just part of an emerging set of new and creative ways people and businesses can interact with their homes and properties. Behaviours and their resulting impact will be radically transformed through the use of Spec assets, as [Impact pathway B](#) shows.

In the near term, a large number of vehicles will be taken off the road thanks to Spec. That's because of the declining number of trips taken to view any given property. Not just by prospective buyers and renters. But by insurers, mortgage surveyors and businesses involved in the property transaction chain. Indeed, this form of behaviour change is already happening, with significant numbers of Spec customers now transacting based on their Spec Verified assets and virtual tours.

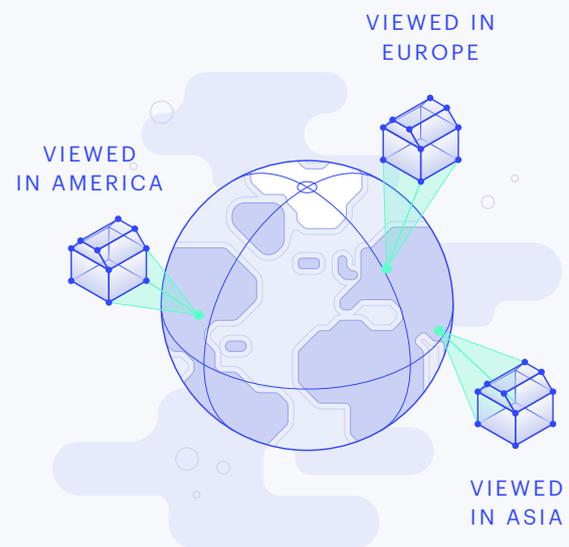


The more Spec grows, the more it will be able to track the number of avoided physical viewings and report the associated benefits. The data is already emerging and the benefits are becoming tangible.

And these kinds of positive impacts are not confined to UK customers. Estate agents are offering the full set of Spec digital assets and virtual tours to international house hunters too. With the heightened confidence that comes with Spec Verified assets, these customers can make informed decisions without ever having to board a plane.



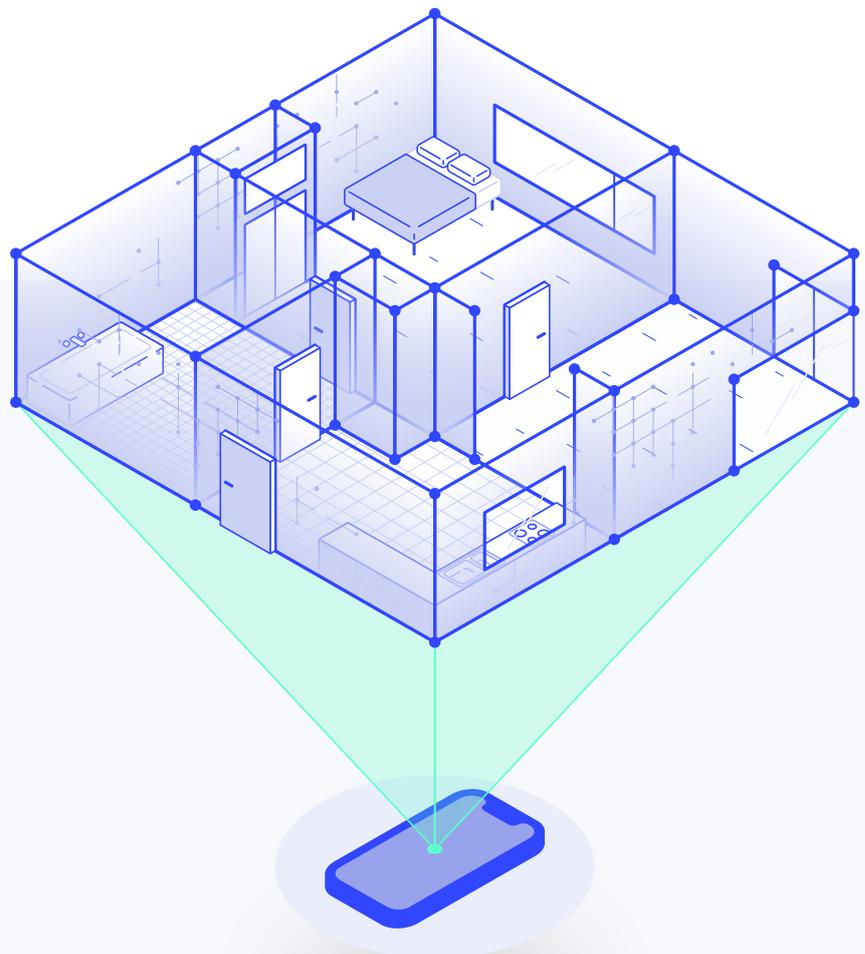
A property captured by Spec in London



The same London property viewed virtually by house hunters around the world

As Spec's reach grows, other valuable applications will also start to play a wider role. Particularly in reducing household energy consumption. Spec's datasets add a new dimension to virtual shopping, integrating Spec Verified accurate internal-space measurements into purchase pathways. So that there will be fewer shopping trips for items such as furniture, white and other electrical goods. This added ability to ensure products fit and look right will also lower the likelihood of returns.

These changes add up to a vital reduction in GHG emissions, air pollution and UK traffic congestion. All of which will have a positive impact on both local communities and society as a whole. They will contribute to reducing the impact of climate change, improving people's health and increasing the amount of time people and businesses have at their disposal.



Summary and next steps



Spec: the way forward

From its immersive virtual tours to its Spec Verified digital assets, Spec is revolutionizing the way property is bought, sold and rented. In particular, Spec is now ushering in an era of trust and familiarity with remote due diligence. As detailed in this white paper, the positive impact of this change stands to be enormously positive when it comes to lowering GHG emissions and improving air quality.

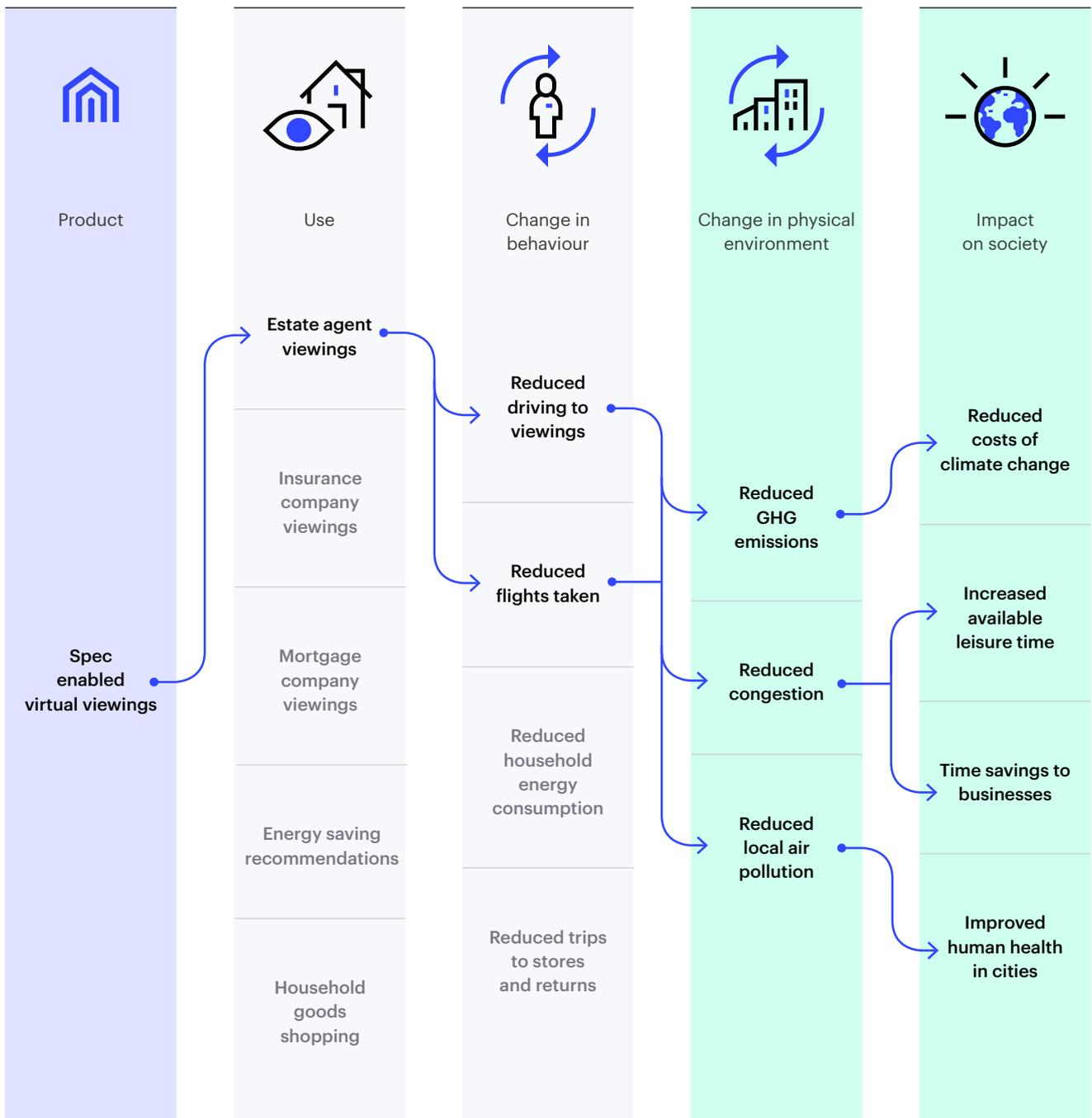
Spec is a trusted partner that can help environmentally conscious property businesses and organisations improve their impact on the planet.

Socially conscious estate agents, sellers, buyers and renters should demand a high-quality, accurate virtual viewing to save everyone time and reduce the environmental impact of property transactions — on both a local and global scale. *It's the responsible thing to do.*

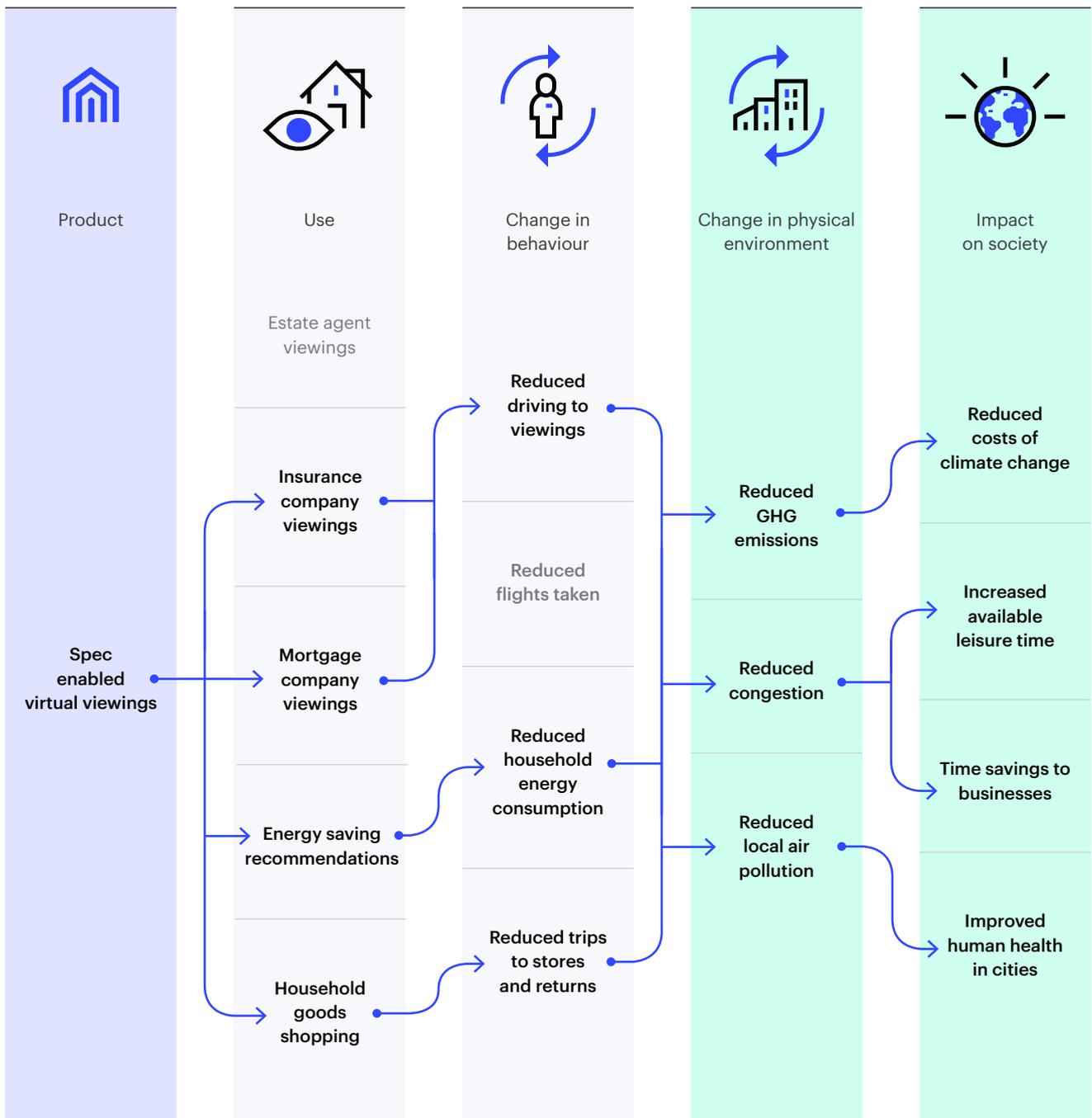
Spec is committed to collaborating with partners across the property world to ensure that its technology is used to maximise the benefit to society. Spec is seeking partners to collaborate and innovate with that will change the global property market, making the world we live in a more sustainable place.



Impact pathway A: Real estate viewings



Impact pathway B: Future adjacencies



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8. Department for Environment, Food and Rural Affairs - [“Clean Air Strategy 2019”](#), 2019
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About Spec

At Spec, our purpose is to inspire peace of mind for every sales and rental experience.

We partner with estate agents to deliver feature-rich marketing assets and verified property measurements. By taking transparency to a new level, we're helping agents build trust with their customers.

Our vision is to build the new standard for the residential property industry across the board, and around the world.

Spec represents the future; transparent, principled, prosperous.

To find out more, visit www.spec.co



About Pupil

Spec is a product of Pupil and is powered by Pupil technology. Pupil is a spatial data company. We capture and publish 3D information about real-world interiors. And we do it on an industrial scale.

Pupil's purpose is to empower people with better data about real-world interiors. Our spatial technology is digitising interiors with a level of accuracy and consistency nobody's seen before. We're helping make the world a smarter, safer and more sustainable place.

To find out more, visit www.pupil.co