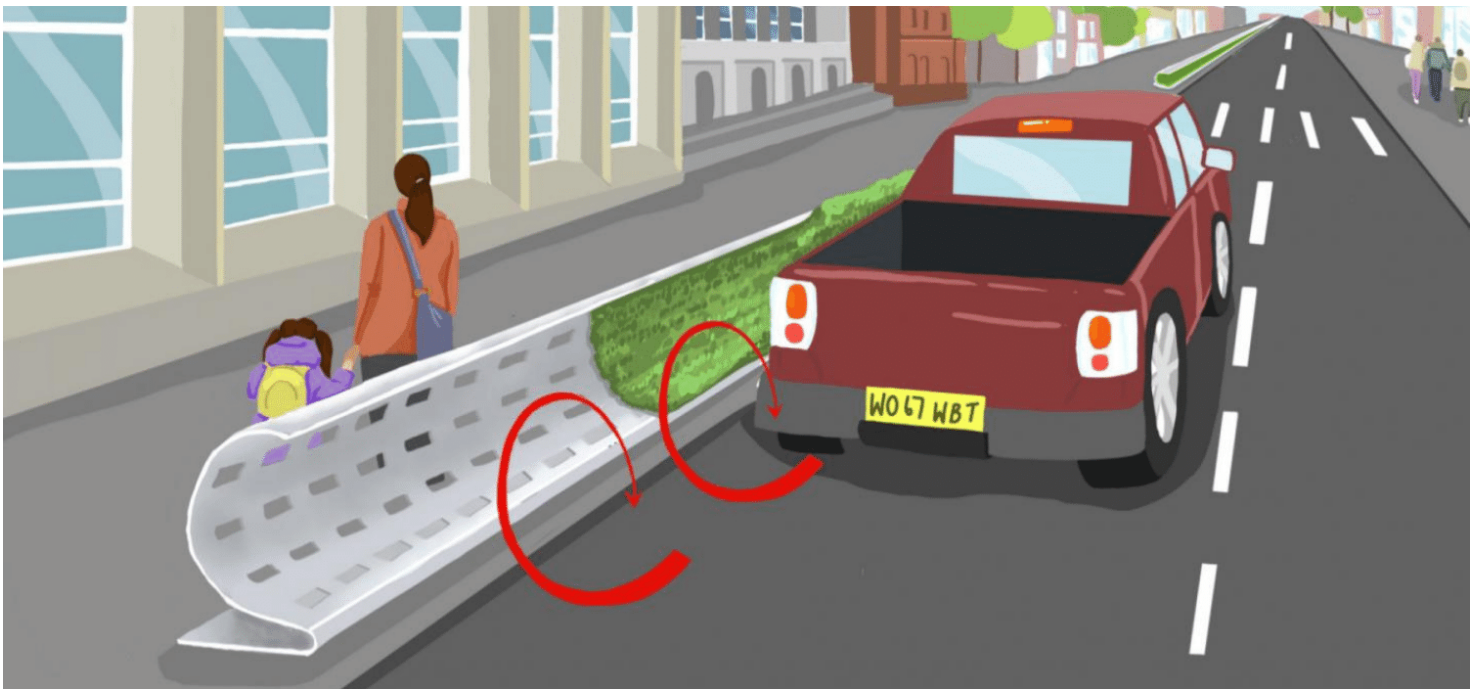

Researchers found that curved structures would more effectively disperse and reflect pollutants back onto the roads | Photo source Imperial College London

ROADSIDE BARRIERS DEFLECT POLLUTION FROM PEDESTRIANS

HEALTH & WELLBEING

Researchers have developed a curved barrier to deflect harmful air particulates away from pedestrians and back onto the roads

Spotted: A team of researchers at Imperial College London have been using airflow modelling techniques to study the effects of unique roadside structures and have developed a curved barrier to deflect harmful air particulates away from pedestrians and back onto the roads. Dr Tilly Collins, of the university's Centre for Environmental Policy, started researching the effects of roadside walls after noticing the severe pollution in the air when watching her child play netball in a school playground alongside a busy London A-road. She made the alarming discovery that these walls create vortices where the air quality gets worse, as pollutants are trapped in them.

Air pollution is becoming an increasingly dangerous global health challenge, which many researchers are working to tackle. The health concerns that have risen from poor air quality have proven to be more significant in lower-income communities, which are more likely to be situated near heavy traffic areas, and amongst children, who are more readily exposed to air pollution due to their proximity to the ground, where heavier pollutants settle over time.

The team then explored ideas surrounding urban design that would mitigate these vortex effects, and the result was the curved barriers. Inspired by airfield baffles and the curved sound-walls on German and Dutch motorways, the team at Imperial found that curved structures would more effectively disperse and reflect pollutants back onto the roads. Furthermore, these barriers will also mitigate noise pollution and would be able to act as scaffolds, to increase green infrastructure in large cities.

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Takeaway:

In London, poor air quality causes 9,400 premature deaths and costs the health service between €1 to €3 billion a year. It is therefore vital that we find innovative solutions such as the curved barriers to mitigate these dangerous impacts. Imperial College's invention is able to tackle these challenges head on, by providing immense benefits to the general public. Not only do they provide pedestrians with better air quality, but they also mitigate noise pollution and can add greenery into the infrastructure of cities.