

# SUSTAINABLE CITIES

Our cities have become larger, busier and more complex and the needs of their inhabitants and the drain of resources on the planet are often at odds. It's no wonder, then, that as we look to the near future, there is a movement to create cities that work more in harmony, both with the Earth and with our fellow city-dwellers.

BY GEORGINA WILSON-POWELL

**IN 2014, MORE** of the world's population lived in a city than not. By 2050, two-thirds of the world's population (estimated to be over nine billion by then) will be urban citizens. Recognising that cities need to be more sustainable is the easy part; figuring out how to change them and starting the process is like trying to change an oil tanker's course – slow and laborious, but entirely necessary. But there's even debate around what sort of sustainability is best – does it cover just the environment or the economy as well?

The World Economic Forum uses three pillars. They are People, Profit and Planet. The People pillar takes into account life expectancy, education and literacy, income inequality, living standards and crime rates. The Profit pillar looks at transport infrastructure, how easy it is to do business, tourism and GDP and a city's connectivity, both outwardly with other communities and inwardly with internet speeds. Lastly, the Planet pillar ranks energy consumption, use of renewable energy, greenhouse gas emissions, drinking water and sanitation as well as air pollution and natural disaster risk, such as from rising sea levels.

Every year it ranks the best 100 cities in a sustainable index, and while no city scores highly on all the above requirements, some cities do crop up again and again. The five most sustainable cities in 2016, according to the World Economic Forum were Zurich, Singapore, Stockholm, Vienna and London. Let's look at what these cities did to be in the top five.



## ZURICH, SWITZERLAND

Zurich often comes top in a lot of surveys that look at the best places to live (which now equates to being a sustainable city). It has invested in renewable energy and public transport such as trams (while discouraging car use in the city). This latter measure, which was well planned, has transformed the city. Now just over a quarter of all journeys are made by car, lessening its carbon footprint and allowing for a quarter of the city to remain forest, another feather in its cap.

## SINGAPORE

The city-state is well known for setting out grand visions and plans (the first Green Plan was issued in 1992), but this commitment to a sustainable future is fuelling its change to a seriously sustainable economy. By 2030 it wants to achieve recycling rates of 75 per cent, for 80 per cent of its buildings to be certified energy efficient and to see a 35 per cent improvement in energy efficiency. It's also developing a CleanTech hub and using the Internet of Things to improve its impact on the environment. As one of the world's five busiest ports, Singapore has always desired to be a world leader in going green and its success is not only commendable but is influencing other Asian cities, especially in China.



**CLOCKWISE:** An aerial view of Zurich city centre; Zurich's public transport is used by 70 per cent of inhabitants; the Sihlwald Forest has been left to nature. The beech forest provided Zurich with firewood for hundreds of years but no trees have been felled here since 2000; a Tesla Supercharger station in Zurich; Singapore city skyline; by 2030, Singapore wants to achieve recycling rates of 75 per cent; a view of the Tree House Condominium, a 24-storey tower that houses the largest vertical garden in the world; An aerial panorama of Stockholm, Sweden; shared bikes are lined up in the streets of Stockholm; car sharing is a collaborative initiative that refashions mobility as a personalised micro-sharing experience in Stockholm.

## STOCKHOLM, SWEDEN

Stockholm set out six sustainable goals in 2012 that included moving to energy-efficient transport (which now includes buses that run on biogas) and better waste management (90 per cent of waste is now recycled). It also wanted to reduce greenhouse gas emissions by three tons per city resident. Stockholm is often thought of as the blueprint for a sustainable city with many futuristic programmes already in place – green architecture presides over mixed-use developments, there's car sharing, plenty of urban parks, data-driven technology is in place (everything is measured, from the electricity a building uses at any one time to an apartment's monthly waste), vertical greenhouses are popping up all over the city to help ease the burden of food miles and fuel emissions, and the city has invested heavily in research and design for new projects. →

## Lifestyle Environment

### VIENNA, AUSTRIA

Vienna is a hub of sustainable thinking but it doesn't just follow others in going green – it's leading the charge. The city is actually one of the country's largest organic farms with 860 hectares given over to urban food production. It's the place to discover sustainably sourced everything, from cosmetics to chocolate, and even its clean energy plants were rebuilt as eco-architecture after a fire in 1989. Hydropower supplies half the city's homes, while living walls and vertical farms have really blossomed. More than half of the municipal architecture in the city is covered with greenery, providing flowers for bees and improving the air quality.



FROM TOP: Vienna, Austria; more than half of the municipal architecture in the city of Vienna is covered with greenery; London's skyline.



### LONDON, UK

London wants to be the benchmark for a sustainable big city by 2020. It's focusing on attracting more green entrepreneurs, creating a CleanTech hub in the city that is a world leader and investing in circular economies (which eradicate waste) and increasing access to green spaces (which, believe it or not, actually make up two-thirds of the busy city). It's fallen from a better position in the index because it hasn't overcome the serious challenges of declining air quality and providing affordable housing.

**AS BEFITS THE** umbrella term 'sustainable city', there are numerous projects in the pipeline across the world to create more sustainable cities.

Fab City is a project initiated by MIT's Center for Bits and Atoms, the Fab Foundation and the Institute for the Advanced Architecture of Catalonia – they've come together to help lay out a road map for cities to become locally productive and globally connected. Cities from Sacramento to Shenzhen have signed up to produce at least 50 per cent of what they consume and use more recycled and digital materials in building. Remember the oil tanker metaphor: it's not about a quick change, but it's thought this can be achieved by 2054.

The UN has made the issue of sustainability one its goals, and by 2030 wants to ensure everyone has a safe, clean place in which to live, with access to green spaces, basic services and public transport, and that cities have improved air quality and brought down the number of people at risk from natural disasters.

Sustainable programmes are underway in so many forms in so many cities that it's hard to find a metropolis that isn't looking to change. But these changes can take on many different forms and approaches.

For Johannesburg, the powerhouse of the South African economy, it's about improving urban infrastructure, improving land management, housing, and the

environmental impact that all of those things have. In Vietnam's Ho Chi Minh, a city with a population of nearly eight million and responsible for 45 per cent of the country's manufacturing, sustainable policies have focused on improving the city's flood defences and getting 100 per cent of its households connected to clean water, electricity and waste management systems, which improves both the communities themselves and the immediate environment.

Lisbon in Portugal is focusing on making itself a tech and entrepreneurial hub for Europe by using new technology to create smart buildings that are energy efficient, more green transport options and moving towards a data-

driven government where more automation is used (to control public lighting or traffic monitoring systems).

Lisbon has embraced the Internet of Things and Big Data and is using them effectively to create a greener way to manage and plan.

There are many facets to being a sustainable city that it can feel like an uphill challenge. But it's not hard to realise that a cleaner, greener, more enjoyable environment is going to attract more talent and with that comes a better GDP.

Finally, what's good for the economy is good for the environment – now it's just a matter of how quickly each city can make these two things marry up – for people and the planet. ♦