



Green City Blueprint

The Brazilian city of Curitiba has remained an unparalleled model of urban sustainability for more than 30 years. But new challenges lay ahead, reports **Mark Atkinson**.

ENVIRONMENTALLY, CURITIBA HAS long been lauded as a textbook case study. Today, cities from Sydney to Reykjavik are flying the eco-city banner, yet Curitiba's story began more than 40 years ago.

In 1966, town planners, disenchanted with the conventional, costly development of highways, malls and skyscrapers, envisaged a city plan conducive to both the environment and quality of life. But not until one of the original architects, Jaime Lerner, was elected as mayor in 1971, did one of the most radical and innovative cases of urban sustainability begin to take shape.

Working on a limited budget, Lerner provided neighbourhoods with 1.5 million

tree seedlings to plant and look after. Creating two dozen parks with lakes to catch the run off from low-lying areas solved the city's persistent flood problem. Unable to afford the equipment and fuel to mow the parks, Lerner deployed sheep to keep the grass at bay. Proceeds from the wool funded children's programmes.

Developers were given permission to add extra storeys onto their buildings. In return they developed green areas around their buildings or contributed towards the funding of low-income housing. Disused factories were turned into sports facilities, which also stopped squatters from occupying the areas and creating slums.

When Lerner instructed that a portion

of the city centre be pedestrianised – the first pedestrian area of any city in the world – shopkeepers were immediately resistant. Initially advised by public works officials that the project would take four months to complete, Lerner achieved the near impossible, completing the project in three days. When he heard that some disgruntled residents were planning to drive into the car-free district before the completion of work, Lerner, with the cooperation of local teachers, gathered together several hundred children and parents to draw pictures in the street. This has become a tradition that continues today.

Lerner quickly recognised the need for a transportation system to move people

quickly and cheaply to and from the city. Discovering that a subway would cost more than 100 times that of a bus system, he came up with 'Speedybus'.

"We tried to understand, what is a subway?" Lerner recalled recently in the press. "It has to have speed, comfort, reliability and good frequency. But why does it have to be underground? Underground is very expensive. With dedicated lanes and not stopping on every corner, we could do it with buses."

A system of bi-articulated buses feeds out from the city centre on five main arteries. Connecting the arteries is a number of routes running in concentric circles. Different buses provide their own distinct functions: express buses with few stops, inter-district buses, and those linking passengers to the express routes.

Fares – standard across all routes – are taken at Curitiba's famous tubular bus

stops prior to boarding. This eliminates the need for drivers to collect money and doubles the number of passengers per hour. Extra-wide doors mean people can get on and off more quickly. To further efficiency, passengers enter bus stops at one end and exit through the other. Speedybus, it is believed, transports as many people as a subway at a fraction of the price.

THE LATE 1980s saw another major milestone when Curitiba became the world's first city to operate a citywide recycling service. Split into organic and inorganic recyclable products and collected by separate trucks, two thirds of all the city's garbage go to its recycling plant – also built of recyclable materials. The plant is staffed largely by immigrants and people with disabilities that may otherwise have found it difficult to get work.

As part of the city's 'green exchange'

programme, low-income earners bring their recyclable products to trucks that visit their neighbourhoods in exchange for food or bus tickets. "The recycling programme costs no more than the old landfill, but the city is cleaner, there are more jobs, farmers are supported and the poor get food and transportation," observes Donella Meadows for *Whole Earth Review*.

The passing of time, however, brings new challenges. What was a population of 350,000 in 1965 has now grown to 1.8 million. Yet, observes Arthur Lubow in the *New York Times*, bus usage is down. "We are losing bus passengers and gaining cars," one Curitiba urban planner tells Lubow. The status symbol of cars, it seems, has a stronger pull than the case for sustainability.

The city's recycling programme has also been declining during recent years to its current rate of 22 per cent of the



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city’s garbage – still impressive by global standards. Yet Curitiba still stands out as a global model for sustainability, consuming an estimated 23 per cent less fuel per capita than the national average, with 16 parks, 14 forests and more than 100 green areas for residents to enjoy.

Carlos Beta Richa, the city’s current mayor, appears as deeply committed as Lerner to maintaining the city’s sustainable heritage. The answer to transport

congestion, he believes, lies in integrated transport systems that simultaneously address the issues of climate change.

Richa is currently developing ‘green lines’, where natural vegetation borders fuel-efficient transport systems in order to increase biodiversity and help absorb carbon emissions. As with Lerner’s original mandate, quality of life and sustainability, asserts Richa, remain at the very top of Curitiba’s agenda. ■

New Frontiers

Urban areas account for 75 per cent of global energy consumption, suggest estimates. Below are some of the many cities that are working towards reducing their eco-footprint.

REYKJAVIK, Iceland aims to be fossil fuel-free by 2050. Current initiatives include the use of renewable geothermal (underground steam plant) and hydropower (water) sources for electricity, heating and hot water, and putting hydrogen buses on the streets.

VANCOUVER, Canada, with 200 parks and 28 kilometres of waterfront, recently topped a poll of the world’s most liveable cities. Targets include reducing its ecological footprint to 20 per cent below the levels of the Kyoto agreement. Already a leader in hydroelectric power, the city is currently investigating the use of wind, solar, wave and tidal energy.

LONDON, England plans to cut CO₂ emissions by 60 per cent within 20 years. According to the former mayor, the city’s congestion charge for driving within the city centre reduced the number of private cars by 38 per cent during its first year, while cyclists increased by 80 per cent.

BARCELONA, Spain requires all new buildings to meet 60 per cent of running hot water requirements through solar energy. The city promotes the benefits of moving around by foot, while a dedicated website calculates the time to walk between two given points. As a result, walking constitutes around 37 per cent of all journeys.

FREIBURG, Germany, renowned as an eco-city and a centre for environmentally related industries, only permits the construction of low-energy buildings with rooftop solar panels to provide electricity and hot water. Vauban, a new residential district, is largely car free through the consensus of residents, a five kilometre per hour speed limit and a tramway connection to the town centre.