

Do you think that cities can ever become sustainable?

In relation to cities, sustainability refers to development that lets the people living now get the things they need but without reducing the ability of people in the future to get what they need i.e. growth in a way that doesn't irreversibly damage the environment or use up resources faster than can be replaced. For example, an urban area that is growing by generating all its power from finite sources will exhaust its supply and could accelerate climate change. Megacities require so many resources that it is unlikely they will ever develop in a truly sustainable way, but there are things that can be done to make them develop in a way that is more sustainable. In order for urban areas to become more sustainable the key issues that need to be tackled are overcrowding, transport problems, crime and pollution.

Exploring sustainability projects at different points along the urbanisation pathway in cities such as Shanghai (LEDC), Putrajaya (NIC), Chattanooga and London (MEDC) will give an insight as to whether city sustainability is more likely to be achieved in MEDCs or LEDCs. Whilst MEDCs may have the necessary resources and technology to make an impact on becoming more sustainable, their starting point is a much bigger ecological footprint. Therefore, there may be more potential in LEDCs becoming sustainable as they have a more appropriate use of intermediate technology.

Shanghai, at the heart of China's economic surge, has realised that a key aspect of sustainability is transport. Their major challenge was to reduce energy demands and greenhouse gas emissions but at the same time maintain mobility within the city. The city developed an eco-friendly transport system which includes a network of 11 metro lines at a total of 325km which is integrated with a bus based mass transit system, reducing the need for people to use personal cars. ▲ railway link to the new international airport, which involves the world's first commercial magnetic levitation trains capable of reaching 550kmh reducing travel time and greenhouse gas emissions, has been built. ▲ reduction in the number of cars on the roads has occurred due to increasing licensing fees and restricted access to the city centre, whilst the electronic guidance system helps avoid congestion and keeps road traffic flowing. Whilst it is common for cities to encourage people to cycle by introducing cycle lanes, the 9 million cyclists in Shanghai may soon face a ban from major roads as the authorities struggle to control congestion and reduce the rising car ownership of the middle classes proving that their attempts to become more sustainable are failing. Furthering the transport systems, Shanghai is planning to create a new city designed to be completely sustainable, it will be called Dongtan and will be the size of Manhattan. It was to have been built on Chongming Island, near Shanghai, in the Yangtze River Delta. The first phase, comprising a city of 25,000 people, was due to have opened for the Shanghai Expo in 2010. By 2030 it was intended to house 500,000 residents. However no construction of the eco-city has taken place yet, so the project has fallen much behind schedule. It is claimed to be the world's first genuinely eco-friendly city powered by renewable energy sources (mainly HEP) and will be as close to carbon

neutral as possible. However the waters are rich in aquatic life and it is an important feeding ground for migrating wetland birds, the construction of this city may cause a loss in habitats and safe resting places for the birds causing a loss in species diversity making this eco-friendly city not as sustainable as was hoped.

Malaysia has become one of the many countries that have deliberately created a new capital city. In 1995 it was decided that the national government function should be moved from Kuala Lumpur, which remains the country's financial and commercial centre, to a greenfield site 25km south of the city. Putrajaya has a population of 67 964, and is located within a high tech zone 15km wide and 50km long known as the Multimedia Super Corridor (MSC), Malaysia's 'silicone valley' stretching southwards from the centre of KL and includes KL international airport, Putrajaya and Cyberjaya (a 'smart' city specialising in education, research and high tech business). The spine of the MSC is an electronic superhighway (fibre optic network) that provides high speed computer links. A large lake is being created, surrounding an artificial island, which will play an important role in flood and pollution control, an environmental benefit, as well as providing recreational and aesthetic value. 40% of the 500 hectare site will be left as green space in an attempt to counteract any greenhouse gases emitted. The main five precincts will be situated in the core and will contain offices, banks, shopping centres and sports complexes. The peripheral area will contain residential neighbourhoods with housing for all incomes, with community centres, parks, places of worship, schools, hospitals and other amenities. There will only be a small amount of housing available for those on low incomes which means there will be a degree of exclusion as the city will be mostly enjoyed by the affluent. The city aims to be indigenous with a modern look, based on new town ventures in the US and UK, with the running efficiency allowing a relatively low rate of consumption of natural resources. However, the environmental impacts will be considerable as the construction and development of the city will involve utilising and modifying a Greenfield site. Nevertheless, high levels of recycling and better flood and pollution control will have positive effects on the environment.

Cities in the MEDW will have a hard time ever becoming truly sustainable as they use vast amounts of energy to power the technology used every day. Chattanooga in Tennessee is a classic example of how a city can become more sustainable. In 1969 the US Environmental Agency named Chattanooga as the 'dirtiest city in America', just over 21 years later it was applauded as the nation's best 'turn around story'. Credit for the re-imaging of the city has to go to the partnership between the city authority and the Lyndhurst Foundation (sponsored by coca-cola) as well as many individuals. It has tackled issues such as building affordable housing, providing public education and alternative transport systems, conserving natural parks and green areas to help reduce the ecological footprint, reducing pollution and improving recycling facilities and development of the riverfront. Top down strategies such as the Clean Air Act which forces manufacturers to invest heavily in pollution-control equipment, and bottom up measures e.g. Vision

2000 programme which calls for all citizens to visualise the city as they would like it to become, from the responses an agenda evolved resulting in major developments. 10km of waterfront along the Tennessee River was redesigned into an urban park cutting through the heart of the city, made up of playgrounds, spaces for outdoor performances, fishing piers and shaded walkways, transforming the once rundown downtown area. The Tennessee aquarium has attracted many visitors, encouraging the development of the old warehouses surrounding it into shopping malls, restaurants and apartments. Transport has been improved to be more sustainable, by means of an electric shuttle bus service capable of moving a third of downtown commuters at a tenth of the cost of diesel vehicles. It is claimed to be the electric bus capital of the world, with the city manufacturing 22 seater buses that are marketed all over the world. Over 3000 inner city housing units have been renovated, and a zero emissions eco industrial park and a grass roofed convention centre have also been constructed. The sustainability of the city has been enhanced especially in terms of outputs. The environment has benefited greatly from the substantially reduced industrial and vehicle emissions as well as increased green space leading to a decrease in the ecological footprint. Residents have benefited from renovations of the housing and the downtown area.

I believe that whilst these urban areas and many others are attempting to become more sustainable, there is still much more that can be done to improve sustainability. For example, housing can be built to be carbon neutral by using solar panels and insulation to reduce the ecological footprint. Public transport could be improved further to produce little or no harmful gases, such as London buses which run on Hydrogen. Renewable energy sources should be used more such as LA uses HEP from Hoover Dam, and whilst renewable energy sources will never generate enough power to support large cities, they should definitely be used more by cities that have large ecological footprints. I feel that as we are so dependent on technology in today's society, cities will never truly become sustainable.