

Residential density in world cities: how London compares

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London may have passed its historical 1939 peak population just under a year ago, but despite being Europe's largest city (depending on where both regional and municipal boundaries are drawn) it has relatively low residential density. New York City crams the same amount of people into roughly half the space, and suburbanisation and Victorian slum clearance mean that many inner London Boroughs are less dense today than they were in 1939.

Density is a fundamental measure of urban structure and determines the efficiency of its urban footprint. Higher densities can facilitate more sustainable public transport, walking and cycling, making it more efficient to provide services, while also promoting opportunity for urban vitality. These advantages depend, however, on high-quality urban design and effective city management to minimise the negative impacts of overcrowding, stress and pollution. Hong Kong, for example, benefits from extremely low travel times; but tightly packed tall buildings increase the challenge of reducing pollution in the city.

Hong Kong is unusual in having fairly consistently high density across the entire urban region. Only 6 per cent of the city's population live in areas with less than 5000 people per square kilometre (km²), compared to 36 per cent in London. However, tall buildings aren't the only built form to support higher densities. São Paulo is multi-centred and similar in its overall density pattern to Mexico City, yet São Paulo's skyline is dominated by high-rise apartment blocks, while Mexico City's is consistently low-rise.

The highest density cities typically have grown around a harbour with limited land availability, as is the case in New York. Hong Kong is bounded by both water and steep terrain. To some extent, the Green Belt acts as a constraint too. Policies, like the London Plan, which seek to intensify land use around public transport, also focus growth. In London's case this is inside the Greater London boundaries and on former industrial brownfield sites, suggesting densities will increase.

In a time of austerity increasing populations can be helpful given that many cities depend on residents' taxes to finance urban facilities and infrastructure. While some cities have maintained

residential levels in their central areas, others are losing population from these zones as their boundaries expand and as motorised growth facilitates urban sprawl.

Cities often have a high percentage of people entering to work each day, increasing employment density. London's population grows by 9 per cent during each work day. While not as high as Tokyo, where 20% of its population enter the administrative city every day, it increases the importance of governing cities to make sure that scarce space resources, like roads, pavements or public transport, are used both efficiently and equitably – challenges the next Mayor of London will need to address.

Cities specialising in knowledge-economy sectors such as finance and creative industries maximise competitive advantage by high-density environments. In these cities there is great demand for office space, and consequently high employment densities in their inner core areas. New York has the greatest employment density at 151,600 jobs per km², while Hong Kong (120,200 jobs per km², much closer to the residential density peak) and London (141,600 jobs per km²) are not far behind.

High employment density requires an extensive public transport network to enable millions of employees to flow efficiently in and out of central business districts on a daily basis. Despite Hong Kong's affluence, only 7 per cent of commuters use cars for a typical journey as a result of the efficiency of public transport. This would be unlikely without the city's dense urban form. New York and London display similar but less marked patterns, with 90 per cent of City of London workers using public transport and around 40 per cent of residents in New York's midtown Manhattan walking to work. This movement of people makes it vital that city government ensures efficient and equitable use of scarce space resources like roads, pavements or public transport. This is a challenge that the next Mayor of London will need to address.

Higher densities are one way of reducing travel times as they facilitate a tighter relationship between where people live and work. Reducing the costs of travel and opening up walking and cycling not only help to reduce pollution and boost health, but also may improve social equity within cities by increasing access to jobs and basic services. As transportation is a significant contributor to pollution, many cities are investing in reducing transport emissions wherever possible. This investment in clean, efficient public transport has economic benefit too: the Internet hasn't reduced the competitive advantage of efficiently packing people side-by-side. Without good accessibility between places of work and homes, agglomeration benefits would be less noticeable.

While London, New York and Hong Kong demonstrate some similarities in employment densities, London remains significantly different when it comes to the pattern of residential density (see figure x). The new Mayor and the revised London Plan face a challenge in reinforcing London's dynamic employment environment, while responding to the need to reduce transport emissions. Crossrail will help, but the biggest hurdle will probably be finding ways to spread density more equitably across the city while considering London's low-rise, low-density character.