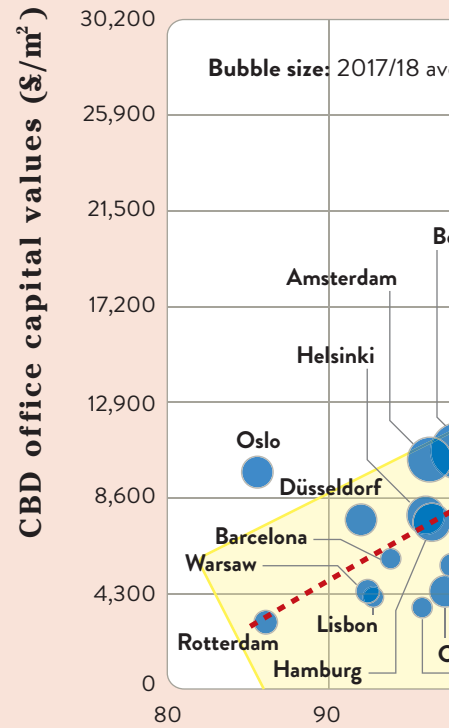


# WHERE IS THE MONEY?

Cities worldwide are growing at a rapid pace. But what is the infrastructure need and what are the opportunities for civil engineers? **Mark Hansford** investigates.

## EUROPEAN INVESTMENT: C



Source: Colliers International

## Future of Cities

**T**he proportion of the world's population expected to be living in cities in the future just keeps rising.

The United Nations (UN) now estimates that 68% of the world's population will be living in urban areas by 2050, up from 55% today. This is according to its most recent dataset released in May last year.

That population shift from rural to urban areas combined with overall population growth could add another 2.5bn people to urban areas in just over 20 years, with close to 90% expected to be accommodated by Asian and African towns and cities.

But realistically, where are the opportunities for engineers going to be? Pragmatically the thing to do is probably to follow actual investment. Property investment management firm Colliers International reckons the amount of real money invested in property annually could hit \$1.9 trillion by 2020.

"My message to investors is

### KEY FACTS

**65%**  
Percentage of global population forecast to be living in cities by 2050

invest in the big [urban] centres," says Colliers head of Europe, Middle East and Africa research Damian Harrington. "And follow the infrastructure."

Colliers' latest research into investment trends shows that the big global cities dominate the deployment of capital in property with New York and London leading the charge, ahead of Los Angeles, Tokyo and Paris. A further four markets – Hong Kong, Washington DC, San Francisco and Chicago join the global gateway club of nine that have amassed more than \$75bn of real estate investment since 2008.

These cities are seriously investing in traditional infrastructure, says Harrington.

He cites London and projects like

**“My message to investors is to invest in the big urban centres and follow the infrastructure**

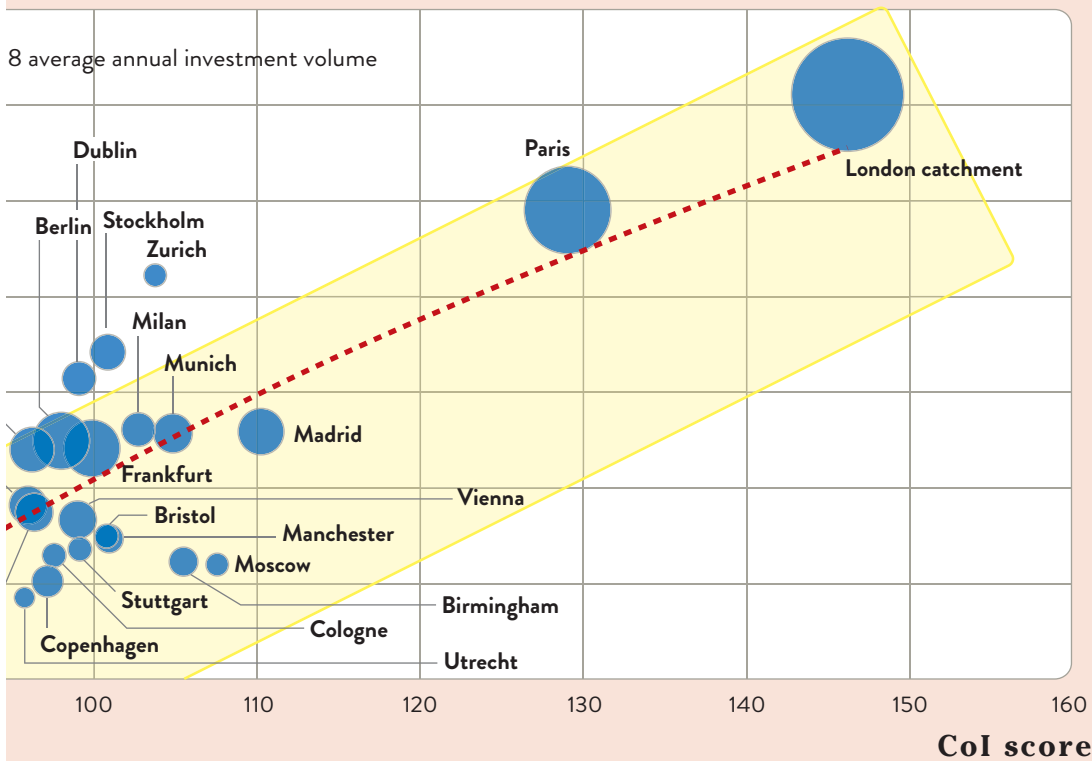
Crossrail and the Northern Line Extension, both of which, while still far from complete, have already driven demand for retail space in the “new inner suburbs” of Stratford, White City, and Battersea. Comparing demand in those suburbs between 2013 and 2015 and 2016 and 2018 is staggering – up around 490%, 330% and 300% respectively. And to prove it is not just an inner London thing he cites Croydon – where demand has gone up less than 30%.

London mayor Sadiq Khan is putting his money – or at least his pleas for money – into heavy infrastructure as the means to accommodating population growth in a way that retains the capital's global reputation as a place in which to live and work.

Transport for London (TfL) has earmarked \$41.3bn for Crossrail 2 over the next 20 years and a further \$19.6bn to build six line extensions across its Underground, Overground and tram networks by 2038.

Khan has in the last year launched a roadmap intended to make London “the world's smartest city”. But the only cash he has committed is \$365,000 to the City Data Analytics Programme. This will support the development, commissioning and

## COI V CAPITAL VALUES



**“ It is vital that the government listens to its own National Infrastructure Commission (NIC) and ensures that London gets the funding it needs**

promoter Société du Grand Paris’ last update in July 2017. But nonetheless work is underway with a fourth tunnel boring machine (TBM) poised for launch this month.

By 2020, 20 TBMs will be at work on the project.

It is a project designed to give the Paris conurbation a transport system commensurate with its growth momentum and ambitions, and while the Grand Paris Express project is still in its infancy, Harrington has already observed a 4% swing in demand for office space away from the central business district and towards the inner suburbs that will be served by the new lines.

Elsewhere, Singapore is held up by many as the prime example of a city that is using infrastructure investment to drive growth, expanding its rail network alone by over a third in the past six to seven years.

So it is unsurprising that the managing director of Colliers’ Singapore office Terence Tang agrees with Harrington: “Do not underestimate the value of infrastructure investment. Crossrail has already driven investment in places like Stratford; in France it will be the same with the Paris Grand Metro. Infrastructure is huge. Where investor money has gone it is where the infrastructure has gone.

“So the best place to put your money is where the government is putting money into infrastructure.”

Within Europe, the major German cities of Berlin, Munich and Frankfurt alongside Stockholm in Sweden form a contingent of the next big group of global cities by scale of property investment, witnessing between £38bn and £75bn in investment activity since 2008.

What is perhaps surprising is how far further back other UK cities such as Manchester, Birmingham and Bristol are in terms of actual

implementation of data science projects across different public sector organisations within the Greater London area. Rather, his real focus is on finding cash for his more traditional schemes.

TfL has had to manage the impact of an average reduction of around £700M per year in government grant. Since March 2018, TfL has become one of the only transport authorities in the world not to receive a direct government operational grant for day-to-day running costs. Worse for Khan and TfL, there is currently no certainty of government capital funding beyond 2020-2021.

Ahead of this autumn’s spending review, TfL says it will make the case to get that grant back to ensure critical infrastructure projects can continue. Khan himself has called on government to recognise that London must get its share of recommended spend on infrastructure of 1.2% of total gross domestic product.

“There is only so much that TfL can do when its government funding is slashed, it’s locked out of funding for road maintenance and faces no certainty over future government capital investment,” said Khan in March.

“At the spending review this year,

**Colliers’ has plotted a city’s desirability (Col score) versus rental prices. Cities to the right of the red line are desirable while offering good value**

it is vital that the government listens to its own National Infrastructure Commission (NIC) and ensures that London gets the funding it needs to continue to operate a world-class, affordable and sustainable transport network.”

While also talking up the smart city concept, in reality New York City’s leadership is similarly focused on big, traditional, infrastructure.

State governor Andrew Cuomo has set out a \$120bn five-year infrastructure plan starting in 2020, building on the city’s current \$75bn five-year plan. The plan has little to say about smart infrastructure, focusing on rail and metro upgrades, airports, highways, bridges and tunnels.

Harrington also points to Paris and its spectacularly ambitious Grand Paris Express. There, 200km of new metro lines – the equivalent of the existing network – are being built between now and 2030. Eighty five per cent of them are underground, and include 68 new stations, interconnected with existing transport networks.

Questions are being asked about the budget, which has grown from €19bn (\$14.4bn) at 2008 prices in 2010 to £26.5bn at 2012 prices in project

## “The best place to put your money is where the government is putting money into infrastructure

investment and perceived desirability.

Colliers has a Cities of Influence score (CoI), which reviews and ranks cities based on their occupier attractiveness, availability of talent, and quality of life factors alongside economic output and productivity. It puts the other UK cities a fair way behind London and Paris.

Many factors influence investors' decisions, and in fact, when you put it together, Harrington reckons the UK regions could come out as a good bet.

“If you put all these cities together and look at the CoI score, capital values, yields, economic outlook yield outlook, rent outlook, you get a good view of where you could be parking your money,” he says. When these factors are accounted for, Manchester, Bristol and Birmingham are in the top 10 ahead of European cities of Utrecht, Barcelona, Warsaw, Hamburg, Stuttgart, Munich and Cologne, he adds.

And those major UK regional cities are all planning for infrastructure boosts of their own: for Manchester and Birmingham it is the arrival of High Speed 2 (HS2) and expansion of their metro systems; for Bristol it is an ambitious £4bn underground metro.

The NIC is strongly backing their plans. Its National Infrastructure Assessment, published last June and still awaiting a detailed government response, calls for Crossrail 2 funding in London; money for Northern Powerhouse Rail linking the cities of Liverpool, Manchester, Leeds, Sheffield, Hull and Newcastle; and a \$43bn boost in funding for major cities between now and 2040, with cities given stable five-year budgets, starting in 2021.

There are ways to further boost attractiveness to investors – and this

## EUROPEAN CITIES: WHERE TO INVEST?

City	Liquidity (2017/18 Avg vol)	Col score	Cap value	Yield spread (PP)	Prime office yield (%)	Economic outlook (%GR)	Yield outlook	Rent outlook	Occ conditions outlook
Manchester	3119	101	7380	3.3	4.8	1.3	Down	Up	Landlord
Bristol	1864	101	7481	3.3	4.8	1.3	Down	Up	Landlord
Birmingham	3015	105	6175	3.3	4.8	1.3	Stable	Up	Landlord
Utrecht	1616	96	4304	4.0	4.6	1.7	Down	Up	Landlord
Barcelona	1806	94	6840	2.6	4.0	2.3	Stable	Up	Landlord
Warsaw	1831	92	5113	1.4	4.6	3.5	Down	Up	Tenant
Hamburg	5007	96	8775	2.8	3.2	1.3	Stable	Up	Landlord
Stuttgart	2334	99	6847	3.0	3.4	1.3	Down	Up	Landlord
Munich	5154	105	12 880	2.6	3.0	1.3	Stable	Up	Landlord
Cologne	1994	98	6464	3.3	3.8	1.3	Stable	Up	Landlord
Madrid	6704	110	12 960	1.3	2.8	2.3	Stable	Up	Neutral
Moscow	1979	108	6011	1.0	9.0	1.4	Stable	Up	Neutral
Rotterdam	1733	86	3488	4.4	5.0	1.7	Down	Stable	Tenant
Berlin	9893	98	12 472	2.7	3.1	1.3	Stable	Up	Landlord
Amsterdam	6544	96	12 000	2.6	3.2	1.7	Stable	Up	Landlord
Copenhagen	3616	97	5142	3.2	3.8	1.9	Stable	Up	Neutral
Düsseldorf	3594	92	8859	3.1	3.5	1.3	Stable	Up	Neutral
London	36411	146	30 525	2.3	3.8	1.3	Up	Up	Neutral

is where smart city thinking comes in.

Bristol aims to become a net zero carbon city by 2030; Manchester by 2038.

But the challenges are evident. “There is a huge shift away from oil-based transport, and gas-based heat and electricity grids in our cities will need to double in size and deliver three times as much energy,” says Utility firm Electricity North West engineering director Steve Cox.

The exact figures are uncertain; the NIC's analysis suggests that a 100% uptake of electric cars and vans could increase total annual electricity demand by 26% by 2050.

Recent analysis by the Centre for Economics & Business Research for smart meter lobbyist Smart Energy GB suggests that by 2035, electricity demand compared to 2005 levels will be 29% higher in London, 17% higher in Manchester and 13% higher in Bristol.

This suggests Cox maybe over-egging things a little. But he explains that within cities there will be hot spots. He cites Manchester, where his firm is currently working on a \$5M project to improve the airport's energy infrastructure as part of owner MAG Group's expansion programme. “If you look at some of the challenges that MAG Group faces, there are going to be something like 50,000 vehicles

**Colliers has considered nine different measures of a city's investment attraction. Blue boxes represent good reasons to invest. Using these measures Manchester, Bristol and Birmingham are strong bets**

at Manchester airport, and if you think they are all going to be electric vehicles, the recharging demand for those is several times the airport's existing electrical demand. And that's before HS2 drives more surface transport to the area.”

“I see in a lot of developers a strong desire to deliver sustainable, affordable development but some confusion around the technology roadmap and the infrastructure needed,” he says.

“Our role is as an infrastructure provider is to provide the investment to put that infrastructure in place to create the energy motorways that the city will need for its decarbonisation journey and make Manchester one of the smartest cities in the world.

“But affordability is a key challenge,” he observes.

The NIC says that without action to manage demand through the day, building the infrastructure needed to avoid power cuts would cost \$2bn per year, adding up to \$30 per year to consumer bills.

So that then looks like the focus for civil engineers in cities in the near to medium term future: quite traditional transport infrastructure projects supported by increasingly smart energy infrastructure projects.

Bigger, bolder smart city thinking is some way further off. **N**