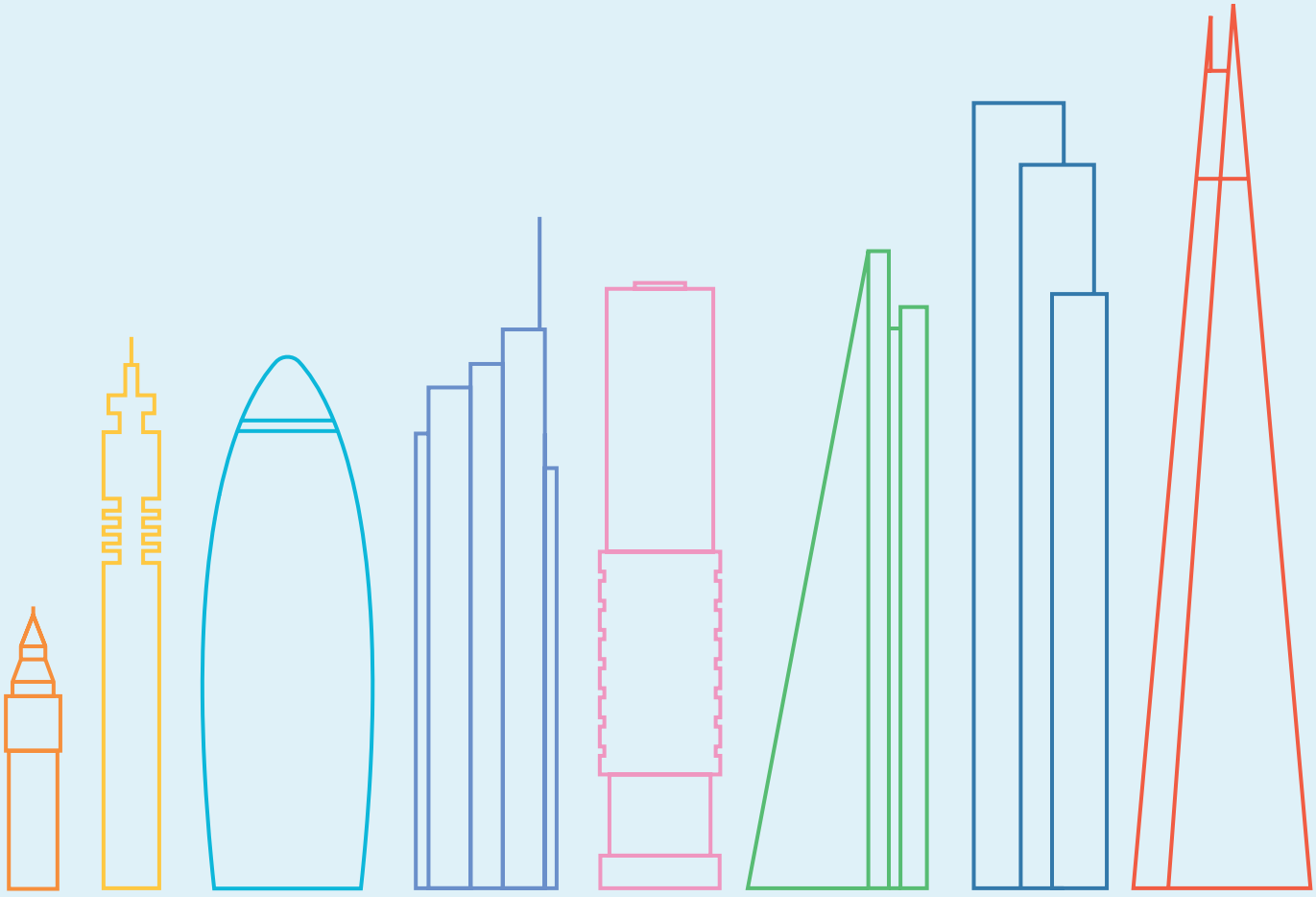


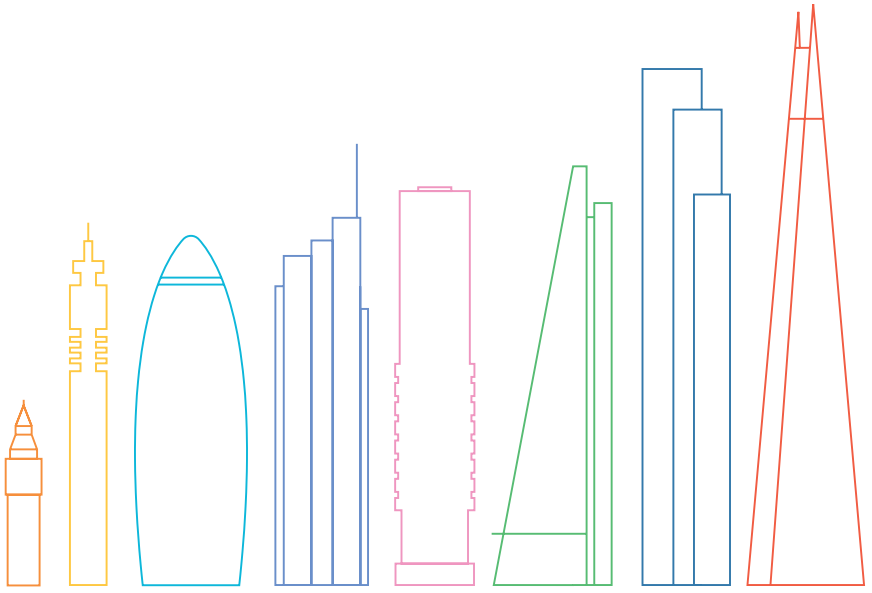
NLA LONDON TALL BUILDINGS SURVEY

2018

PROGRAMME CHAMPION AND
RESEARCH PARTNER

PROGRAMME CHAMPION

PROGRAMME SUPPORTER



LONDON TALL BUILDINGS SURVEY 2018

This NLA Research Paper is published by New London Architecture (NLA) in April 2018. It is an annual publication delivering up-to-date figures and analysis of the London tall buildings pipeline and is part of the year-round NLA Tall Buildings programme, bringing together industry experts and the public to discuss one of the capital's most debated topics.

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#NLATallBuildings

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CONTENT

EXECUTIVE SUMMARY

510 tall buildings in the pipeline - up from 455 of 2016

A record number of **115 schemes are now under construction** across the capital, but **starts are down 25%** from the previous year, with construction taking longer to reach completion

Over 100,000 homes could be provided with the entire tall buildings pipeline by 2030 - equivalent to 1.5 years of housing supply according to the new London Plan housing targets of 66,000 new homes a year

Southwark, Newham and Croydon see record increases with tall buildings pipelines respectively as **48, 39** and **27**

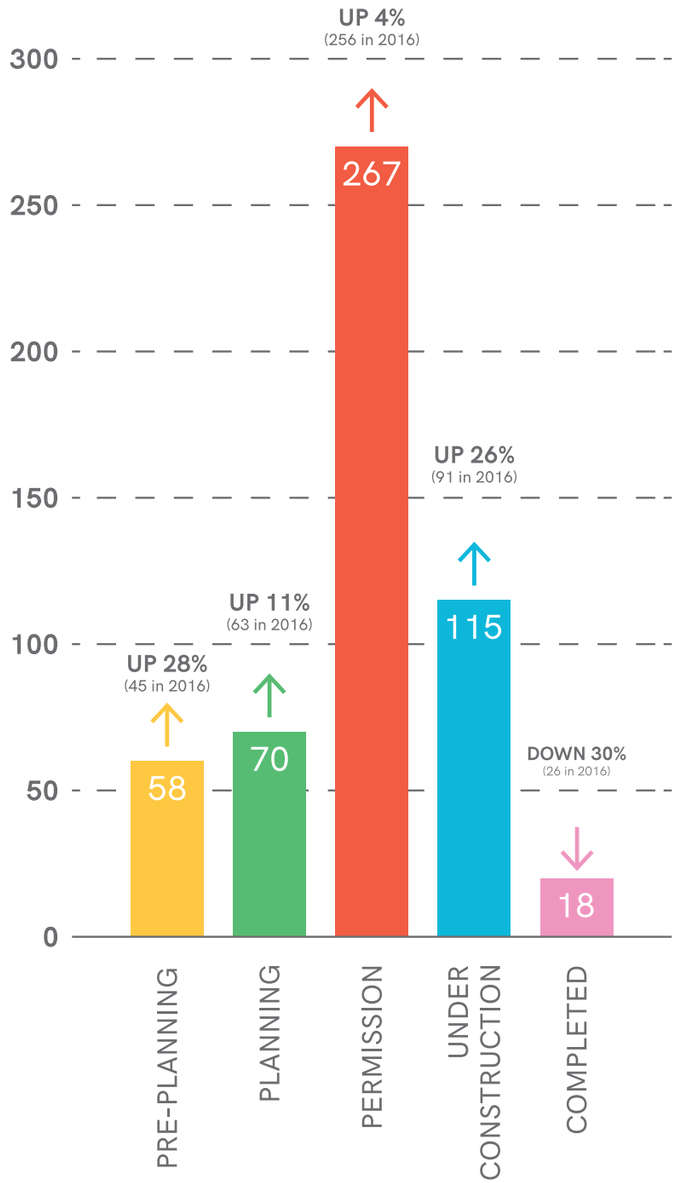
Opportunity Areas and **new transport nodes** are the main locations for new tall buildings clusters

Bromley and **Waltham Forest** have for the first time at least a tall building in the pipeline

2017 shows a slowdown in the rate of applications, down 10% from 2016 and 35% from 2015, when we saw the exceptional application for Greenwich Peninsula

Half of the tall buildings pipeline is in East London sub-region, with 252 tall buildings, followed by Central London with 99

THE 2017 PIPELINE



INTRODUCTION

By Peter Murray, Chairman,
New London Architecture

This year the NLA's annual tally of tall buildings, with research partner GL Hearn and data provided from EG, shows signs of a slowdown. This is to be expected; the uncertainties created by Brexit are causing projects to be postponed while higher stamp duty introduced by George Osborne in December 2014 continues to impact on the market.

However, this year's figures should not be interpreted as the end of tall building in London. There are still a total of 510 in the pipeline which will be constructed over the next decade or so and others will come forward. The Mayor of London's Draft London Plan calls for the delivery of 66,000 new homes in the capital, a figure that will be very hard to achieve at the best of times but with the difficulty of finding sites, increasing nimbyism and an unwillingness to impact on the Green Belt is well nigh impossible.

Tall buildings, of course, are not the sole answer to delivering more and denser housing; medium rise mansion blocks can provide sufficient densities in sensitive areas. But if we are to make the best use of land, towers provide an answer for delivering largely non-family housing. Tall buildings are, for example, particularly relevant to the sort of sites that Transport for London are developing around stations where residents benefit from easy access to public transport as well as the high levels of amenity that denser urban environments can deliver.

A striking example of the efficient use of land is Mapleton Crescent in Wandsworth developed by Pocket Living, supported by the Mayor's Innovation Fund. Located in inner London close to Wandsworth town centre, the tower is 27 storeys high and contains some 89 apartments, but the remarkable thing is that it sits on a triangular site of less than half a hectare – the space that would be occupied by just two houses in a suburban area.

In the right places, towers allow us to use the finite resource of land.

This is the fifth NLA annual survey. Each year we have called for greater scrutiny of the design of tall buildings and for smarter ways of assessing quality with the use of digital technology and a London-wide computer generated 3D model. We were gratified to see both these issues addressed in the new London Plan.

The 50 Mayor's Design Advocates appointed by Sadiq Khan can provide just the sort of high level advice that is required for a building form that has such wide visual and physical impact, while a 3D model will assist both planners and public to understand precisely what those impacts will be.

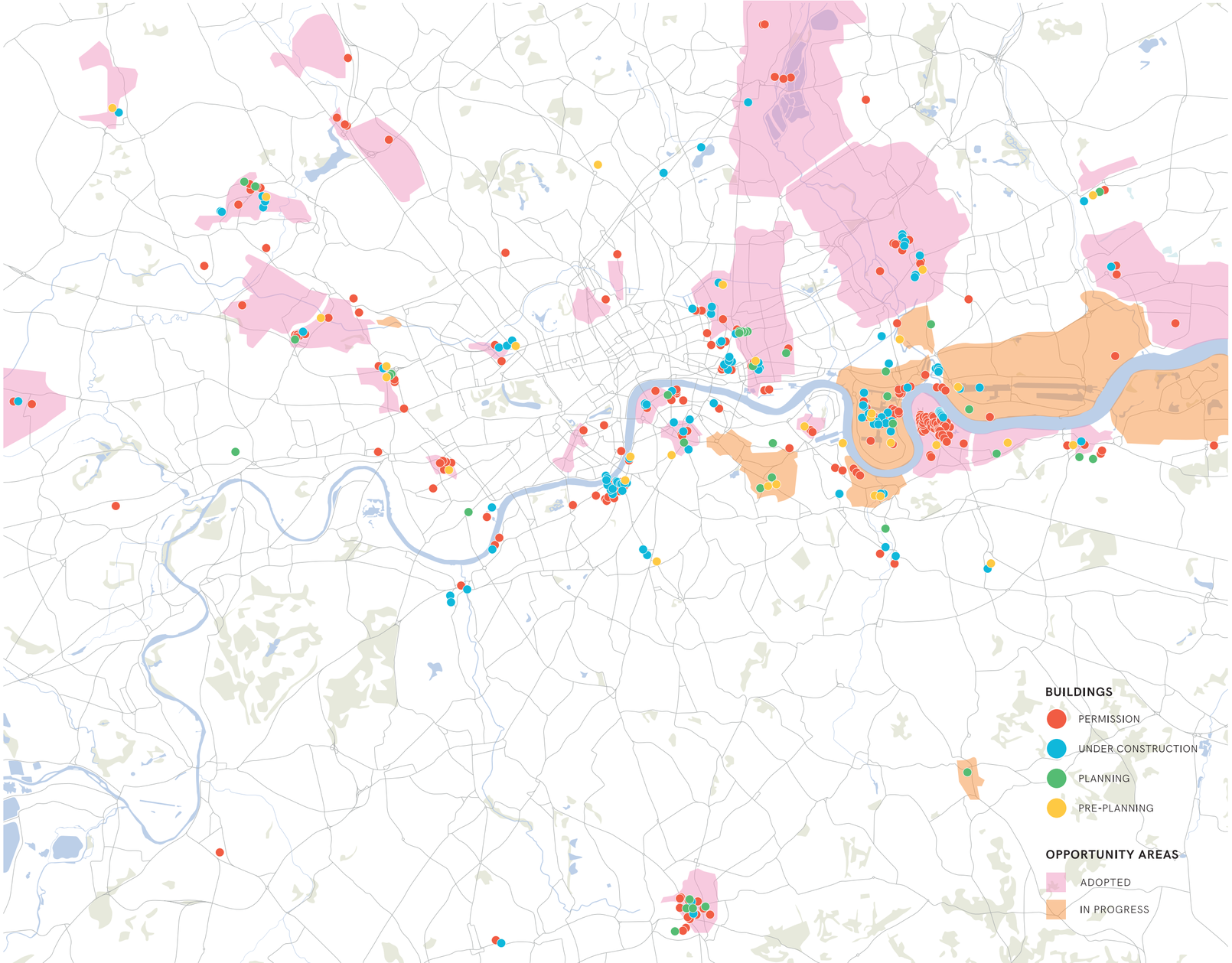
However, the Mayor still needs to select a platform that will provide him with the necessary information. In this report we are using images from the VU.CITY digital model to illustrate future London. We believe, as this system develops, that it will provide a pan-London tool for better decision-making.

City of London tall buildings cluster by VU.CITY

The VU.CITY images in this report show the 3D digital model of London. The baseline model - showing in grey - is based on aerial photography taken in late 2016 and it is accurate to 15 cm. The consented timeline - in yellow - is a growing representation of newly approved buildings across London, currently showing approximately 50% of tall buildings that are under construction or with permission.

MAPLETON CRESCENT SW18, by Metropolitan Workshop for Pocket, Wandsworth. Status: completed (2018) © Sarah J Duncan

LOCATION OF TALL BUILDINGS IN 2017 PIPELINE BY PLANNING STATUS



LOCATION OF TALL BUILDINGS IN 2017 PIPELINE

As the number of tall buildings in London continues to increase, their spatial distribution across the capital can be even more indicative of where growth hotspots are.

Opportunities Areas, alongside new planned transport lines and station sites, can support significant development and growth. When tall buildings clusters are in those areas, they can benefit from good access to public transport and other amenities, while being able to deliver more homes with an efficient use of land.

THE CURRENT LONDON PLAN DEFINES 38 OPPORTUNITY AREAS :

- Bexley Riverside
- Bromley
- Canada Water
- Charlton Riverside
- City Fringe/Tech City
- Colindale/Burnt Oak
- Cricklewood/Brent Cross
- Croydon
- Deptford Creek/ Greenwich Riverside
- Earls Court & West Kensington
- Elephant & Castle
- Euston
- Greenwich Peninsula
- Harrow & Wealdstone
- Heathrow
- Ilford
- Isle of Dogs
- Kensal Canalside
- King's Cross-St Pancras
- Lewisham, Catford and New Cross
- London Bridge, Borough & Bankside
- London Riverside
- Lower Lea Valley (including Stratford)
- Old Kent Road
- Paddington
- Park Royal
- Old Oak Common
- Royal Docks & Beckton Riverside
- Southall
- Thamesmead and Abbey Wood
- Tottenham Court Road

THE PIPELINE

THE PIPELINE

By Paul Wellman,
Senior Analyst, EG

For the purpose of this research, the 2017 pipeline is defined as all London tall buildings, of 20 storeys or above, that have been submitted to planning, either as Environmental Impact Assessment (EIA) or application; have planning permission or are under construction, in the period between 1st January 2017 and 31st December 2017.

KIDBROOKE VILLAGE, by Gardner Stewart Architects (GSA) for Berkeley Homes, Greenwich. Status: under construction.

STEPHENSON STREET, by Patel Taylor for Berkeley Homes, Newham. Status: in planning.

250 CITY ROAD, by Foster + Partners for Berkeley Homes, Islington. Status: under construction.

OVERVIEW

Tall buildings across the capital fell back in 2017, in relation to both applications and starts, a bellwether for the state of the market, being 10% and 25% down on the previous year, respectively.

With economic and political headwinds encapsulating a rather uncertain market, this year's findings won't come as a huge surprise from the record highs of 2016.

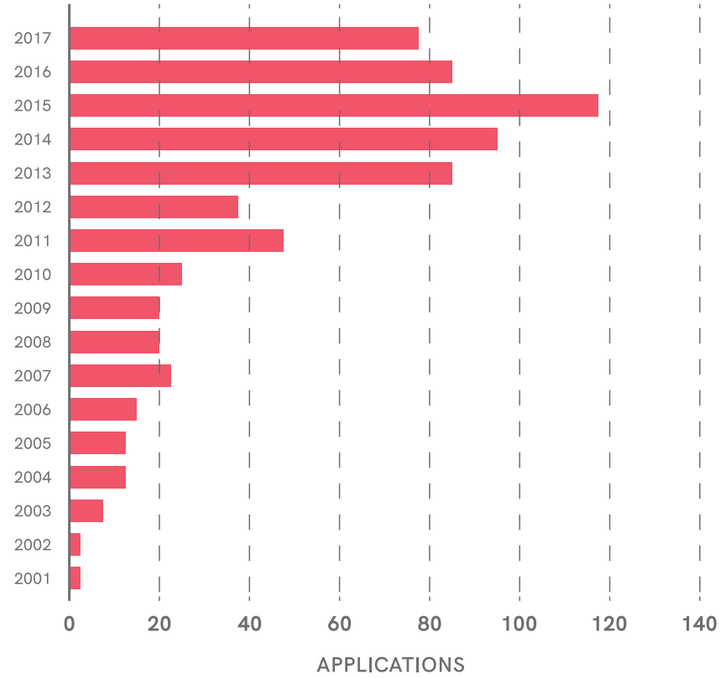
However, what is coming through the planning system and out of the ground, is increasingly across the outer London boroughs, in zones 3, 4 and 5, as well as for the build-to-rent market, mirroring the wider new-build housing market.

Looking forward, the entire future pipeline now stands at 510 tall buildings, up from 455 of the previous year. That figure includes all those schemes, of 20 storeys or above, that have been submitted for planning, with planning permission or under construction across all London Boroughs.

APPLICATIONS

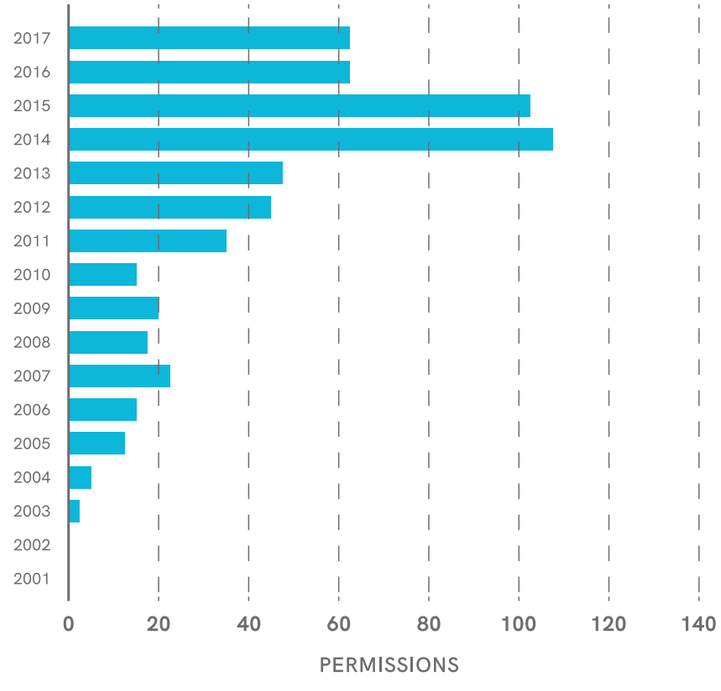
The number of planning applications for tall buildings in 2017 fell by 10% on the previous year, and 35% on the corresponding figure for 2015. It must be noted that 2015 was an exceptional year, with the exceptional application of Greenwich Peninsula for over 40 tall buildings. Taking that anomaly away from the figures, the past five years present a rather flat line, yet clearly far exceeding the levels seen up to 2012.

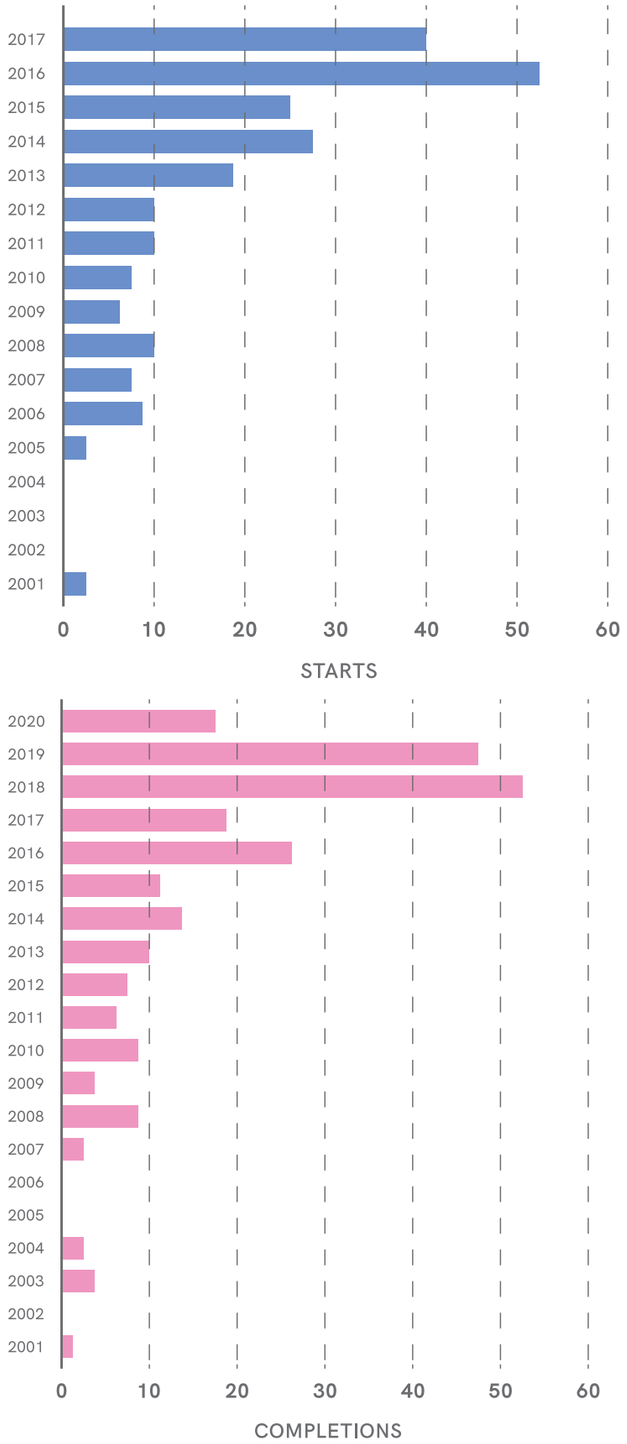
With at least another 57 tall buildings submitted as EIA in 2017, we would expect forthcoming applications on those sites to come through in due course.



PERMISSIONS

63 tall buildings were granted planning consent in 2017 at planning committee, just one more than 2016. However, this was around half the figure for 2014 and 2015, which saw 106 and 103 tall buildings consented respectively.





STARTS

A total of 40 tall buildings got off the ground in 2017, a 25% drop on the previous year. 2016 was an exceptional year however, with more than double the number of starts, compared with 2015.

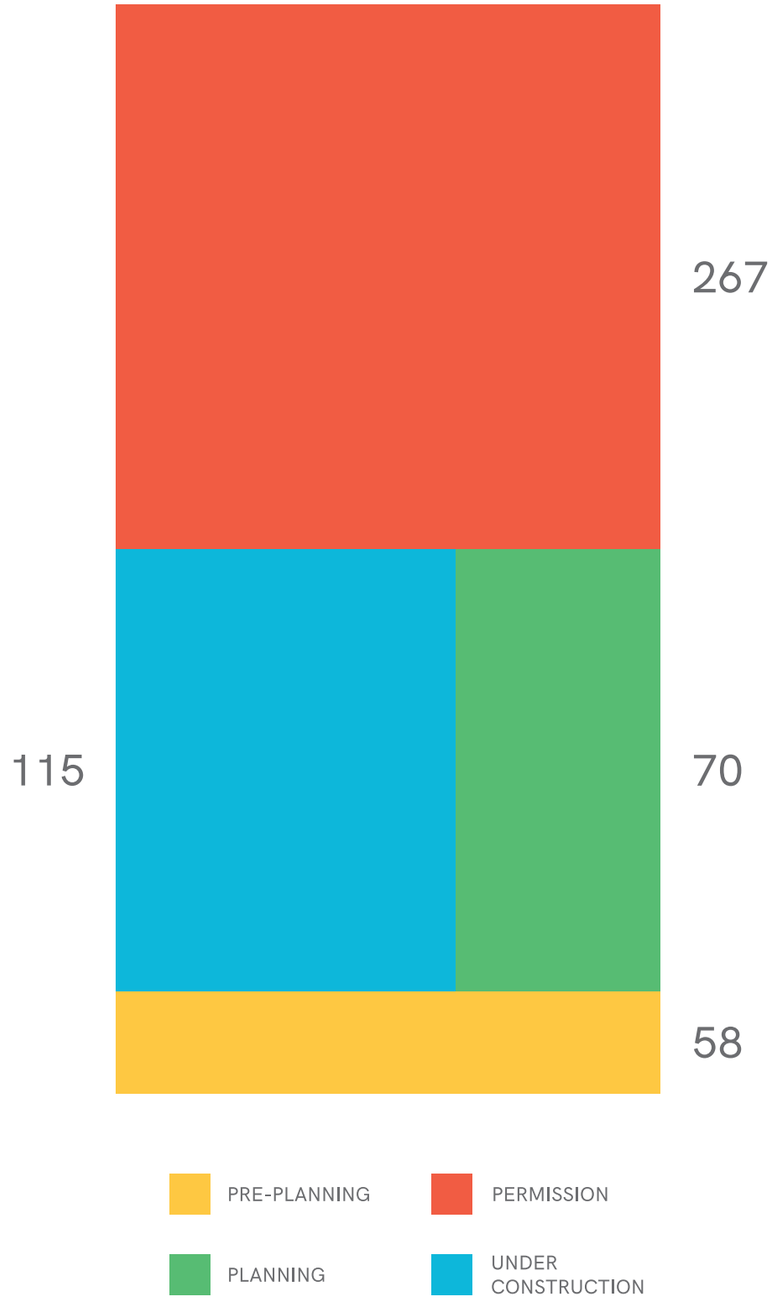
For context, over the past two years more schemes have started construction than the preceding five combined together, stretching back to the start of 2011.

COMPLETIONS

18 tall buildings completed last year, a 30% fall on 2016. With the construction and skills crisis, development simply takes time. Tony Pidgely, speaking at MIPIM 2018 said it takes Berkeley Homes twice as long to build a home, than it did 30-40 years ago. Many completions have been pushed back, with schemes typically taking 3-4 years from start to finish rather than 2-3 years, resulting in a ballooning of expected completions over the next few years.

For context, 113 tall buildings were under construction at year end, 2017. The previous three years have seen a total of 55 tall buildings complete.

THE 2017 TALL BUILDINGS PIPELINE BY PLANNING STATUS



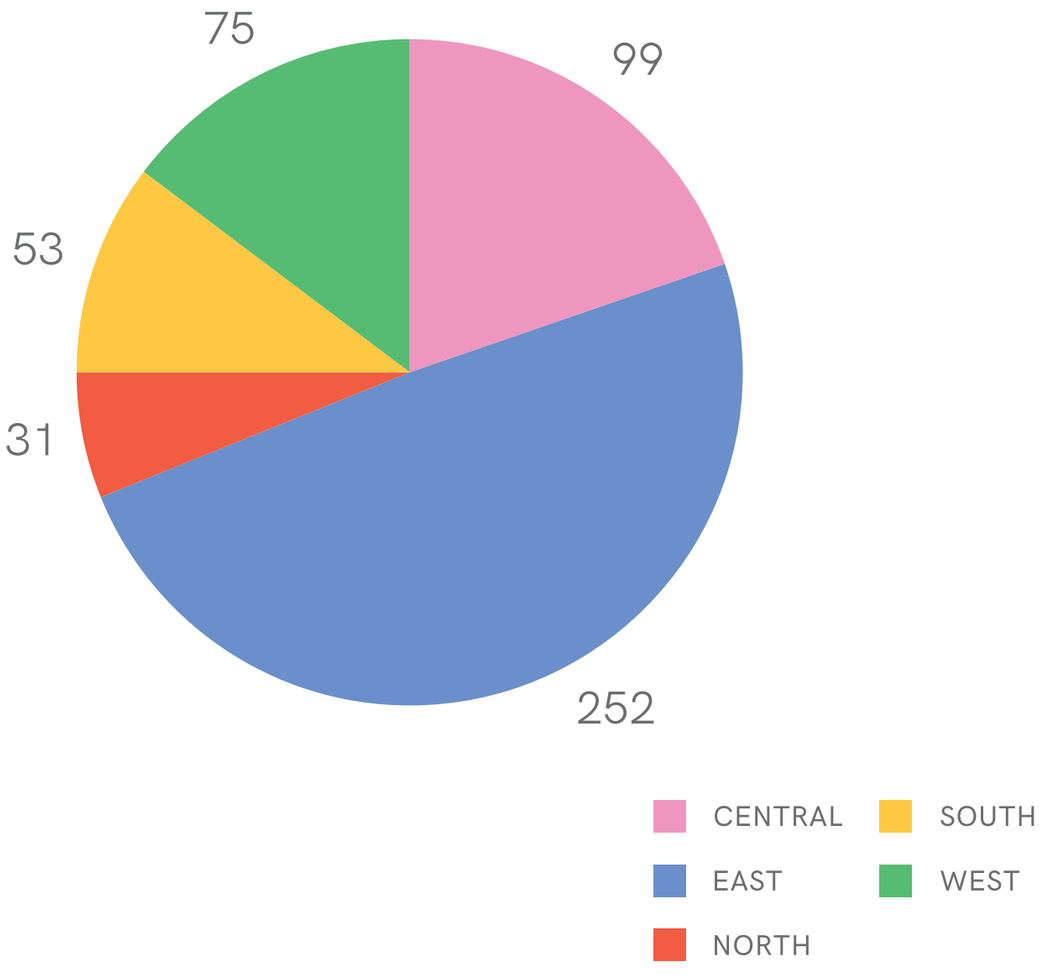
ANALYSIS

ANALYSIS

By Stuart Baillie, Bhoseok Nam and Samuel Dargue,
GL Hearn

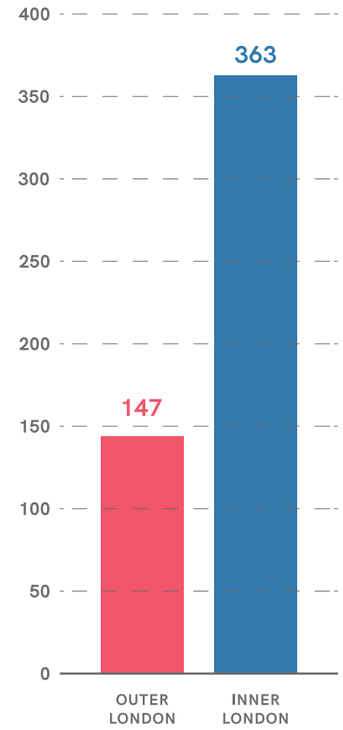
LOCATION OF TALL BUILDINGS IN 2017 PIPELINE BY LONDON SUB-REGIONS

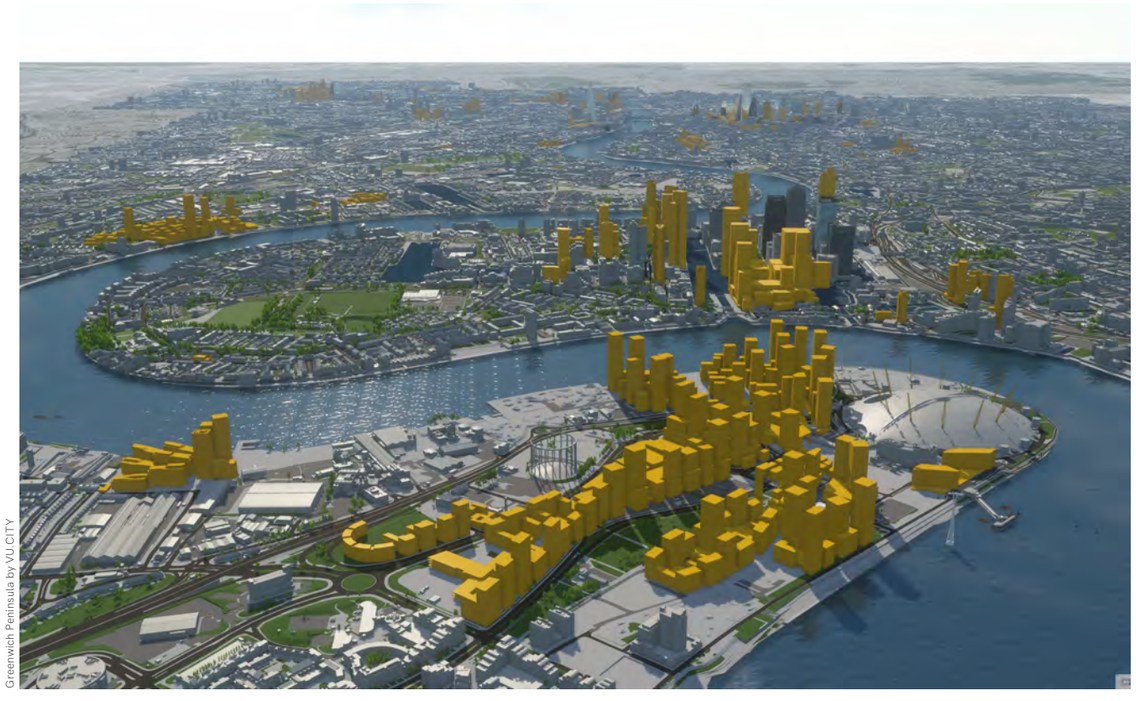
As in previous years, the East sub-region remains the area where the largest number of tall buildings are proposed and built, counting for almost half of the entire tall buildings pipeline at 49% – broadly the same as 2016 at 48%. The Central sub-region has seen a slight decrease in 2017, having 19% of the tall buildings pipeline compared to last year at 22%. There has not been any noticeable change within the other sub-regions.



LOCATION OF TALL BUILDINGS IN 2017 PIPELINE BY INNER AND OUTER LONDON BOROUGHS

The vast majority of the tall building proposals (71%) are located within inner London, indicating that tall buildings still largely remain a product that is more suited for densely urbanised areas. However, the remaining 29% of tall buildings are in outer London, which is a sizeable chunk, indicating that tall buildings are becoming an increasingly deliverable form of development outside of the historically prime areas. In particular, Opportunity Areas and transport nodes in outer London are becoming increasingly suitable for tall buildings in principle.





Greenwich Peninsula by VU.CITY

LOCATION OF TALL BUILDINGS IN 2017 PIPELINE BY BOROUGH

Greenwich and Tower Hamlets continue to be the boroughs with the highest number of tall buildings in the pipeline, 70 and 85 respectively. Both boroughs are up from the previous year, with Greenwich increasing from 68 and Tower Hamlets from 77.

There has been a noticeable increase in activity in Southwark with 48 tall buildings – up 30% from 37 in 2016; Newham with a 26% increase with 39 tall buildings compared to 31 in 2016; Hammersmith & Fulham has seen a 21% increase with 40 tall buildings planned compared to 33 tall buildings in 2016; and Croydon with 27 tall buildings – compared to 21 tall buildings last year for an increase of 29%. There has been a 13% decrease in activity in Wandsworth with 21 tall buildings, down from 24 last year; Lambeth with 32 tall buildings compared to 35 tall buildings last year, decreasing by 9%; and Ealing with 15 tall buildings – decreasing by 6% compared to 16 tall buildings last year.

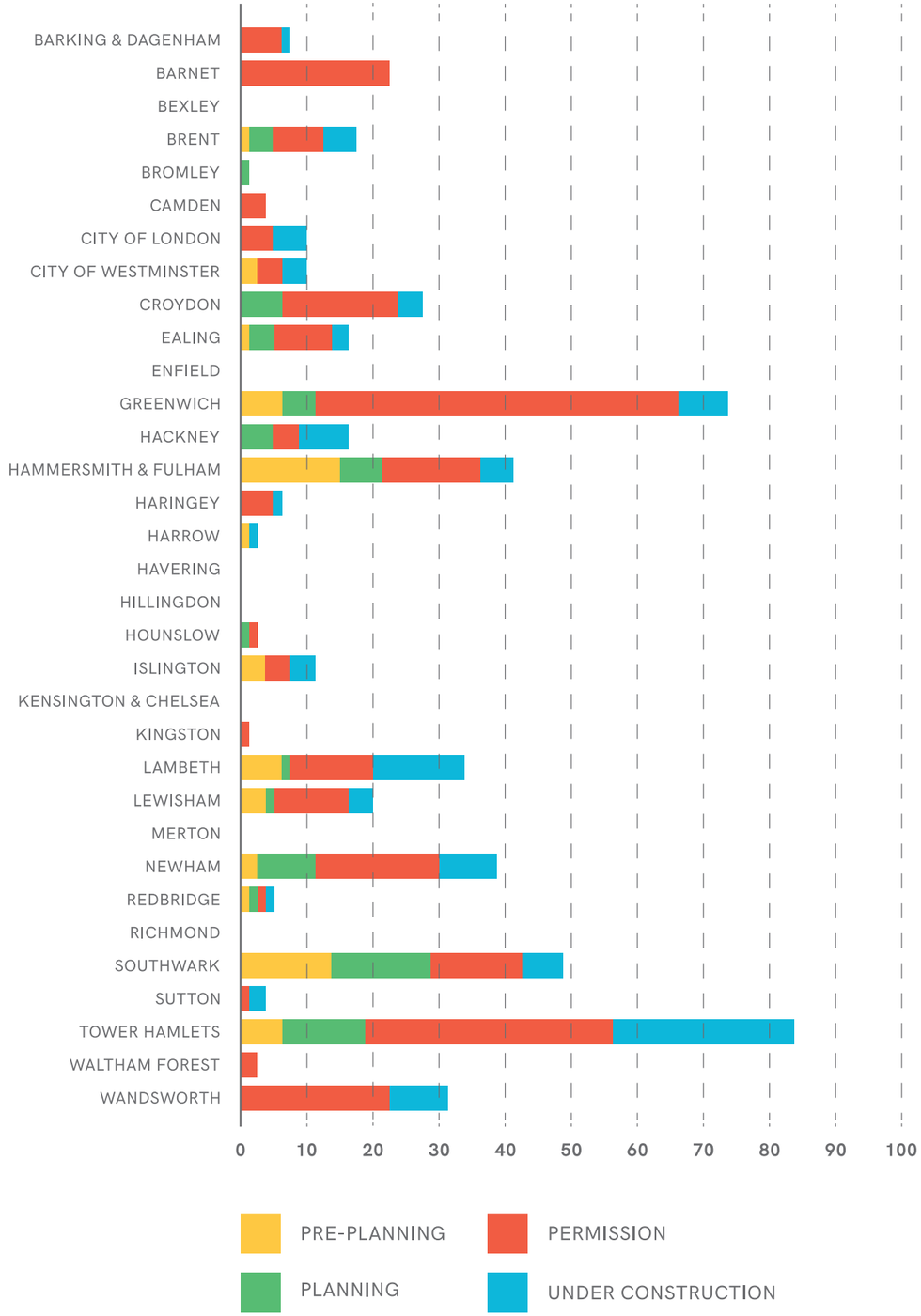
While completed schemes coming out of the pipeline figure play a role in the decrease – 18 buildings were completed in 2017 - the decrease seen in some of the boroughs is also likely to be due to schemes removed from the pipeline due to lapsed permissions – where construction never started – or where planning permission has been refused.

Seven boroughs have no tall buildings in the pipeline: Bexley, Enfield, Havering, Hillingdon, Kensington & Chelsea, Merton and Richmond. All seven boroughs remain consistent with 2016 findings. However, in 2016 a total of nine boroughs didn't have a pipeline, while Bromley and Waltham Forest entered the list for the first time with one and two tall buildings respectively. Last year's report predicted Waltham Forest would have new tall buildings in pipeline. Looking ahead, we would expect locations like Bexley Riverside (Bexley), Meridian Water (Enfield), Hayes (Hillingdon), Kensal Rise (Kensington & Chelsea) and Morden (Merton) will see some tall buildings proposed, given the nature of these locations in physical and policy terms.

The Elizabeth Line, due to fully open in December 2019, has been identified as a catalyst in bringing development forward along its route, especially in outer boroughs such as Ealing, Redbridge and Newham. Recent research has also shown that 90,000 new homes are predicted along this route by 2021 and this figure is due to double to 180,000 by 2026.

Additionally, improvements to London Underground services through upgrades to rolling stock and signalling, alongside the extensions of lines such as the Bakerloo line – in Southwark and Lewisham – and Northern line – in Southwark, Lambeth and Wandsworth - are likely to have acted to bring forward development and will continue to do so.

In the outer boroughs in particular, this is evident as tall buildings tend to be well-located near public transport links into central London.



LOCATION OF TALL BUILDINGS UNDER CONSTRUCTION IN 2017 BY BOROUGH

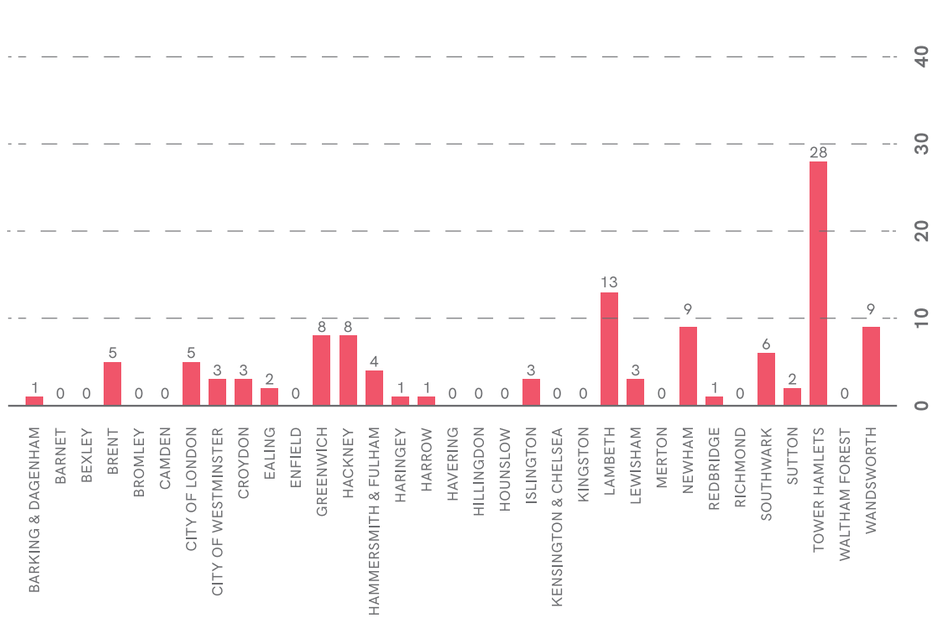
The overall level of construction activity for tall buildings increased in 2017, with 115 under construction compared to 91 last year.

In terms of geographic allocation, the number of boroughs containing tall buildings under construction also increased - there are now 20 boroughs with tall buildings under construction compared to 15 last year, with newcomers Redbridge, Harrow, Haringey, Ealing and Croydon. The borough experiencing the most construction growth continues to be Tower Hamlets, with Wandsworth, Lambeth, Newham, Hackney and Greenwich also experiencing significant construction activity.

Overall, more boroughs are experiencing construction activity, although there has been a slight decrease in Newham from 11 tall buildings under construction last year to nine this year, and a similar decrease in Southwark, Lambeth and Greenwich by one building each.

The increase in construction activity is led by Hackney, up by four buildings from last year, along with Brent, Croydon, Hammersmith & Fulham and Tower Hamlets, each up by three.

There were 40 tall buildings that started construction in 2017 which is down from 2016. The most noticeable drops are Tower Hamlets (down to five starts from 16 starts in 2016) and Greenwich (down to one start from five starts in 2016). On the other hand, Brent and Hackney saw an increase to four starts each in 2017 (up from one start each last year) along with Croydon which also had an increase by three start from zero.



In 2017, 18 tall buildings have been completed, which is down from 26 in 2016. Of the 18 completions, five (28%) are located in Lambeth whereas Tower Hamlets and Newham each had three completions. In addition, there are a large number of tall buildings now at advanced stages of construction - 48 are expected to complete in 2018 and another 48 in 2019. Since our first report in 2014, 122 tall buildings have been identified as being completed across London.

TALL BUILDINGS COMPLETED IN 2017

18 tall buildings have completed in the year 2017 across London.

—
Apex House & Albion House, LB Brent
HTA Design LLP for Tide Construction

—
Wembley Park, NW06 (ALTO), LB Brent
Flanagan Lawrence for Quintain

—
Waterman 1, Lower Riverside, Greenwich Peninsula, LB Greenwich
Pilbrow & Partners for Knight Dragon

—
Lighterman, Lower Riverside, Greenwich Peninsula, LB Greenwich
Carey Jones Chapman Tolcher for Knight Dragon

—
2 x The Corniche, 20 Albert Embankment, LB Lambeth
Foster + Partners for Berkeley Group

—
Merano Residences, 30-34 Albert Embankment, LB Lambeth
Rogers Stirk Harbour + Partners for Berkeley Group

—
Nine Elms Point, 62 Wandsworth Road, LB Lambeth
Rolfe Judd for Barratt Homes

—
Vauxhall Sky Gardens, LB Lambeth
Amin Taha Architects and Carey Jones Chapman Tolcher for Frasers Property

—
Greenland Place, Malmo Tower, LB Lewisham
RMA Architects for Barratt

—
Capital Towers, 2-12 High Street, LB Newham
Stockwool for Galliard Homes

—
Stratford Riverside, 80-92 High Street, LB Newham
Broadway Malyan for Weston Homes

—
Stratosphere, Great Eastern Street, LB Newham
Telford Homes

—
High point, 80 Newington Butts, LB Southwark
Rogers Stirk Harbour + Partners and Axis Architects for Realstar and Peabody

—
2 x Goodmans Fields - North East Block 1 & Block 2, LB Tower Hamlets
Lifschutz Davidson Sandilands for Berkeley Homes

—
Manhattan Plaza, Poplar Business Park, LB Tower Hamlets
Barton Willmore for Telford Homes

—
Lombard Wharf, LB Wandsworth
Patel Taylor for Barratt Homes

GOODMANS FIELDS, by Lifschutz Davidson Sandilands for Berkeley Homes, Tower Hamlets. Status: completed.

LOMBARD WHARF, by Patel Taylor for Barratt Homes, Wandsworth. Status: completed

THE CORNICHE, by Foster + Partners for Berkeley Homes, Lambeth. Status: completed.

MERANO RESIDENCES, by Rogers Stirk Harbour and Partners for Berkeley (St James), Lambeth. Status: completed. ©Simon Winson

PROGRESS FROM PLANNING IN 2016 TO PERMISSION IN 2017

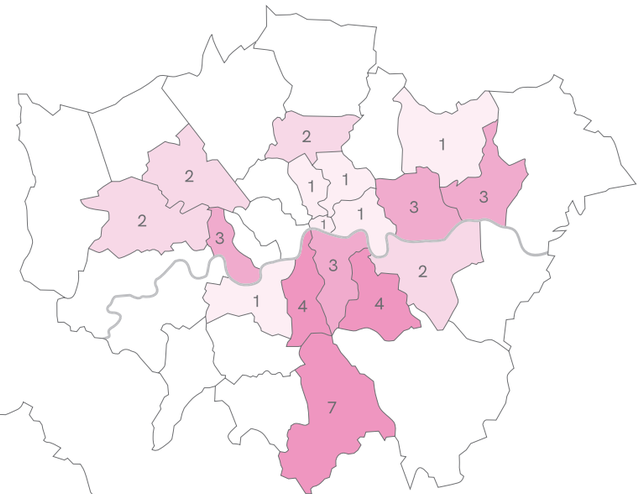
The below maps show the progression of tall buildings which were in the planning system in 2016 and gained permission in 2017. The map on the right shows the number of schemes which gained permission in 2017 by borough, while the map on the left shows it as a percentage against the total of the tall buildings in planning.

18 boroughs in total had tall buildings in planning in 2016 and of these just one saw no permission granted (Hounslow).

Six boroughs – Barking & Dagenham, Brent, City of London, Haringey, Islington and Wandsworth – saw 100% of the tall buildings in planning in 2016 get permission over the year, none of which represents more than three buildings overall. The boroughs with a large number of buildings in the planning process in 2016 (such as Tower Hamlets, Southwark and Hammersmith & Fulham) tended to see similar numbers of permissions in 2017. Croydon clearly stands out, having seen the largest number of permissions at seven – 50% of their tall buildings in planning in 2016 gaining permission.

There does not appear to be a correlation between the number of tall buildings in planning and the number of permissions.

NUMBER OF TALL BUILDINGS THAT PROGRESSED FROM APPLICATION IN 2016 TO PLANNING PERMISSION IN 2017



PERCENTAGE OF TALL BUILDINGS THAT GAINED PLANNING CONSENT IN 2017 AGAINST THE TOTAL THAT WERE IN PLANNING IN 2016.

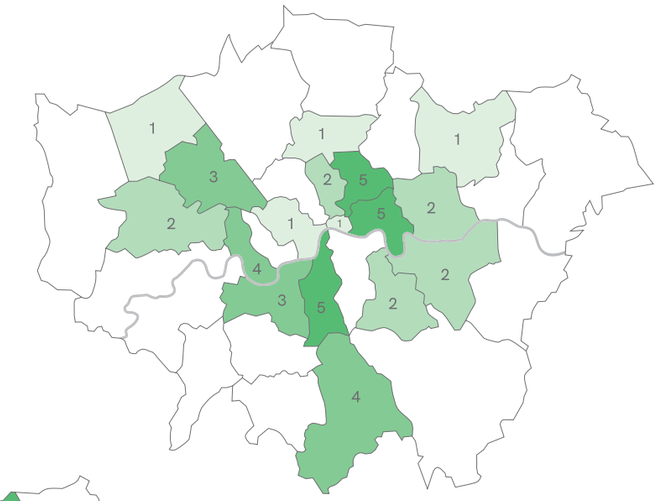
PROGRESS FROM PERMISSION IN 2016 TO CONSTRUCTION IN 2017

While Greenwich had the highest number of tall buildings with planning permission as of 2016 at 54, it only saw two of these begin construction by 2017. Similarly, Tower Hamlets had just five of its 39 consented tall buildings progress to construction, while none of Barnet's 22 consented tall buildings progressed to construction.

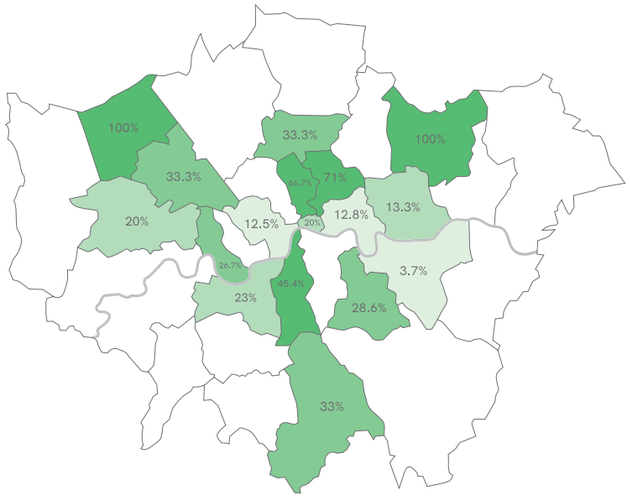
Both Harrow and Redbridge had just a single building commence construction in 2017, however this represents 100% of their consented tall buildings progressing to construction, whilst Hackney (five out of seven – 71%) and Islington (two out of three – 67%) also saw relatively high progression rates from planning permission to construction.

Data shows that buildings which began construction in 2017 took an average of 2.4 years to start construction after gaining planning permission.

NUMBER OF TALL BUILDINGS THAT PROGRESSED FROM PERMISSION IN 2016 TO CONSTRUCTION IN 2017.



PERCENTAGE OF TALL BUILDINGS THAT STARTED CONSTRUCTION IN 2017 AGAINST THE TOTAL PLANNING PERMISSIONS IN 2016.



HEIGHTS OF TALL BUILDINGS IN 2017 PIPELINE

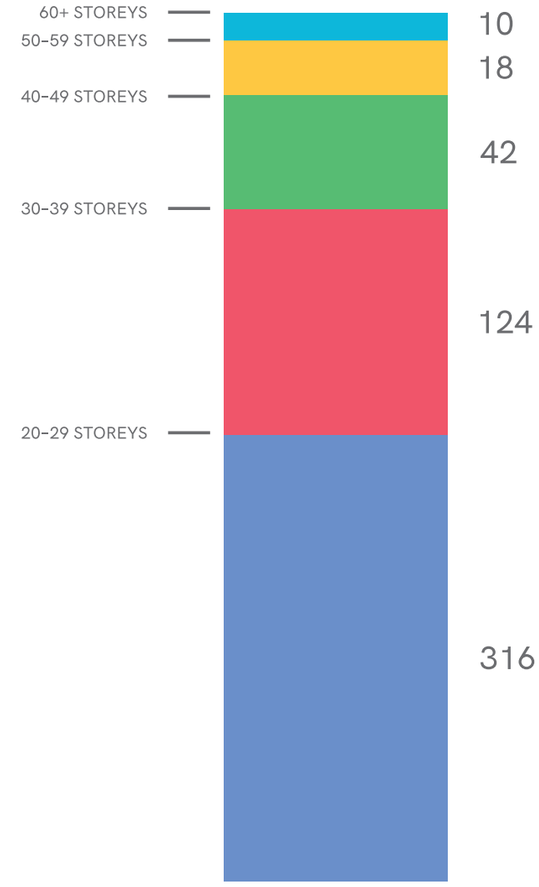
The definition of whether a building is considered to be tall relates directly to its surroundings and London boroughs tend to have different definitions of what constitutes a tall building. Richmond for example, defines a tall building as 'generally six or more storeys' while Hammersmith & Fulham simply sets out that tall buildings are ones 'which are significantly taller than the generally prevailing height of buildings in the surrounding area'. For the purpose of this report, and consistent with all previous years' research, a tall building has been defined as a building of 20 storeys or more. The mean average height of the tall buildings in the pipeline across London has gone down to 29 storeys from 30 storeys as seen in previous years, and the number of tall buildings between 20 and 29 storeys increased to 316 (constituting 62% of all tall buildings in the pipeline) from 273 (60%) in 2016 - suggesting that this is the generally accepted "sweet spot" in terms of building heights. This relates to a number of factors including construction economics, "buildability", development risk, viability and financing of the building, and also policy and political influences.

There are several possible reasons as to why we are seeing fewer tall buildings coming forward in excess of 30 storeys. The first of which is likely due to the number of tall buildings which are flooding the market and the nature of tall buildings in terms of the inability to phase them. Developers may not wish to deliver an excessive number of units in a building which may cause the sales values to be reduced. Additionally, there are much higher costs associated with building heights in excess of 30 storeys due to their inherent longer construction times and inefficiencies compared to their lower counterparts, as well as significant construction costs such as cranes.

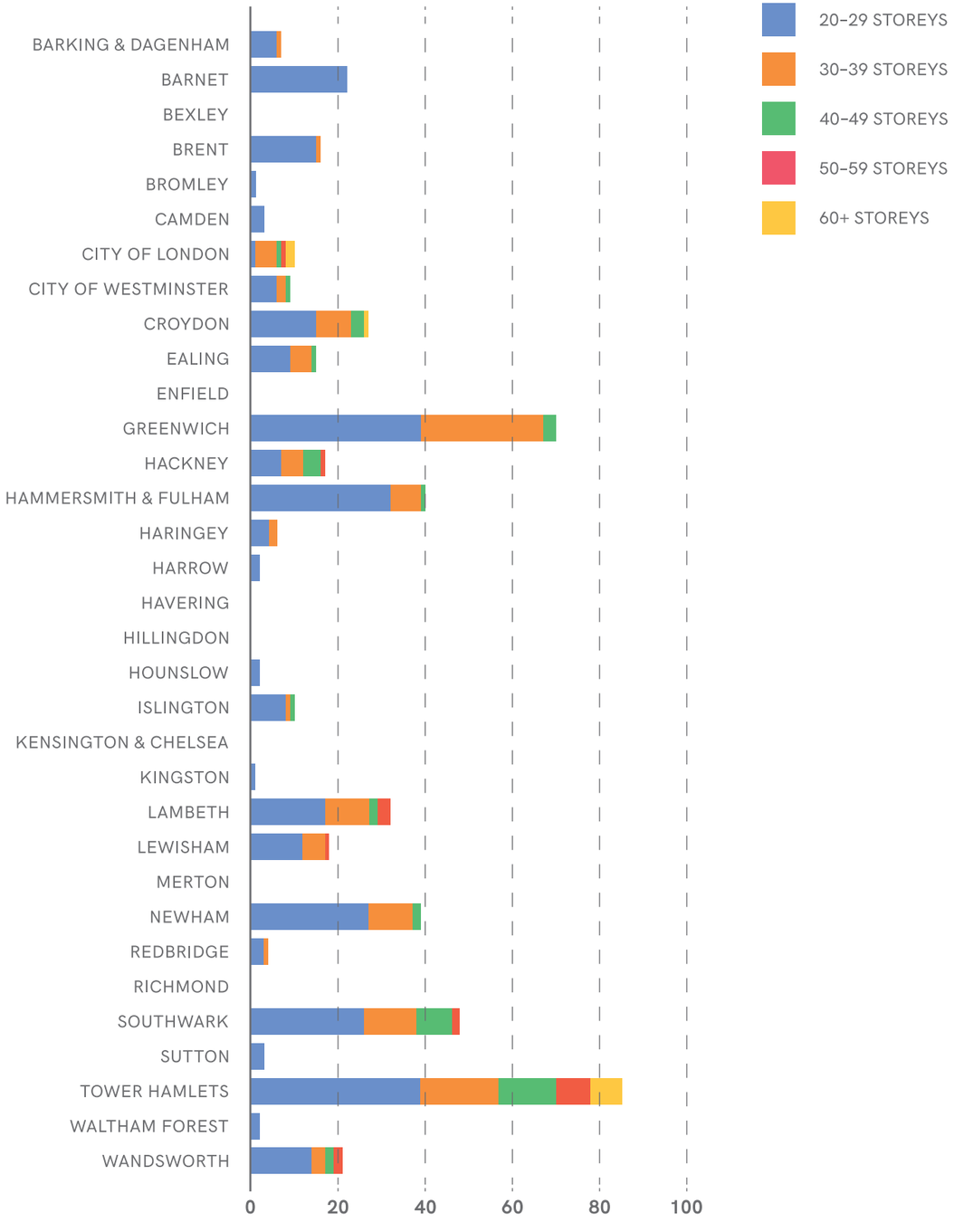
We are seeing more tall buildings in the outer boroughs, though these tend to be lower on average than those in the inner boroughs. This may be attributed to the higher land values in the inner boroughs and the requisite need to build high to recoup the land value. Outer boroughs are also more suburban in character which presents planning risks in terms of building taller.

Since the start of data being collated for this report in 2014, 62% of all buildings have been between 20-29 storeys. In 2017, 11% of the buildings currently under construction will be 50-75 storeys high, an increase since 2014 when approximately 9% of the buildings under construction were above 50 storeys, demonstrating that taller buildings are proving to be deliverable in the London context.

When comparing the inner and outer boroughs, only 57% of the tall buildings within inner boroughs are 20-29 storeys, compared to 74% within the outer boroughs, meaning that almost half of tall buildings in the inner boroughs are over 30 storeys. The tallest building currently recorded within the outer boroughs is 68 storeys in Croydon, compared to 75 storeys in Tower Hamlets within the inner boroughs.

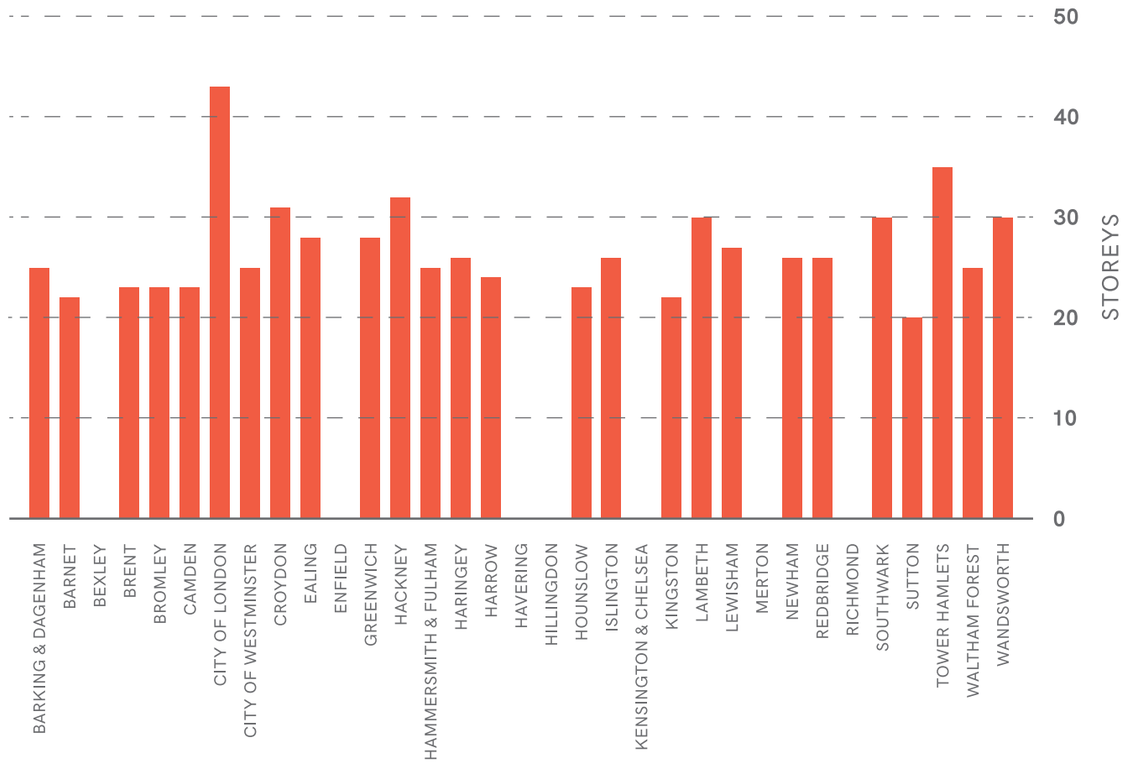


HEIGHTS OF TALL BUILDINGS IN 2017 PIPELINE BY BOROUGH



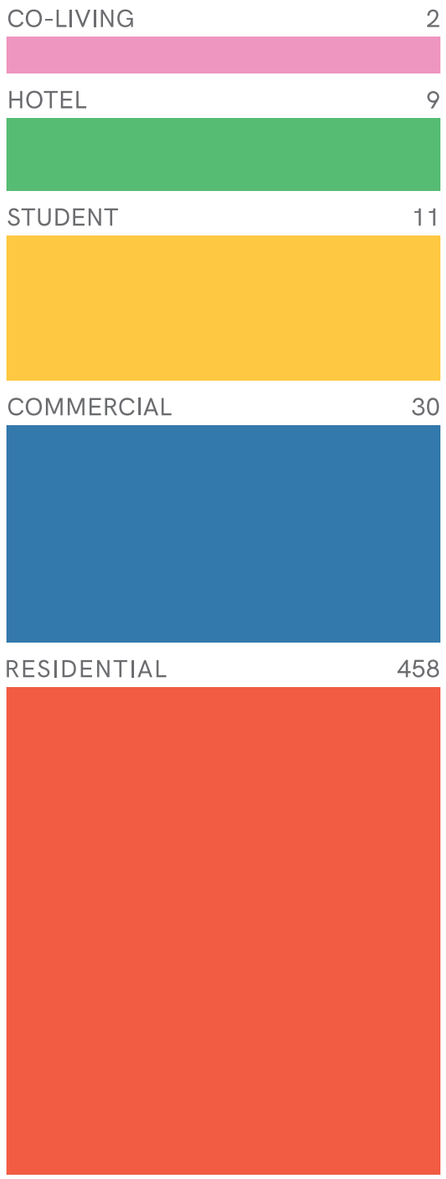
AVERAGE HEIGHTS OF TALL BUILDINGS IN 2017 PIPELINE BY BOROUGH

The City of London had the tallest height of buildings in the pipeline at an average of 43.4 storeys – this is the only borough to have an average height of 40+ storeys in London. This is followed by six boroughs with average heights of 30+ storeys: Tower Hamlets (35.3 storeys), Hackney (32.5 storeys), Croydon (31 storeys), Lambeth (30.8 storeys), Southwark (30.5 storeys) and Wandsworth (30 storeys). The other boroughs with tall buildings have varying average heights between 20.7 (Sutton) and 28.7 storeys (Ealing). Most of the taller buildings are therefore located in inner London, with the only exception being Croydon where the average height is an impressive 31 storeys.



PRIMARY USES OF TALL BUILDINGS IN PIPELINE IN 2017

As identified in the research previously, the primary use of the tall buildings is residential (90%) which suggests that residential demand and values remain the main drivers for the continued requirement for tall buildings across the capital.



TALL BUILDINGS 2017 PIPELINE'S CONTRIBUTION TOWARDS HOUSING NEED

It is estimated that approximately 106,000 new homes could be provided by the tall buildings in the pipeline (estimated by assuming 8 homes per storey at an average of 29 storeys within the 458 residential buildings). This is over two years supply of the housing need for London based on the current London Plan requirements of some 42,000 dwellings per annum, or over 1.5 years supply based on the emerging New London Plan requirements of some 66,000 dwellings per annum.

Based on the same assumptions, it is possible to estimate the number of homes by borough that can be provided by tall buildings and their contribution towards the supply of housing targets according to both the current London plan and the new London Plan.

Using approximate plot ratios for typical tall buildings, the total land take to provide these 106,000 dwellings in the pipeline will be around 40 hectares (2,650 units per hectare).

Note this is calculated on an assumption of:

- Average unit at 60 sqm x 8 units per floor x 1.2 (gross/net) + 50% for plot size
- Then multiplied by 458 tall buildings in primary residential use

Our own research and other industry research projects indicates that midrise and mansion block developments often result in residential unit densities of hundreds per hectare rather than thousands per hectare. Some examples of midrise and mansion block developments are shown below:

MIDRISE SCHEME	DENSITY (Units per ha)	HEIGHTS (storeys)
CHELSEA BARRACKS	73	4 – 7
PORTOBELLO SQUARE	128	4 – 10
SOUTH ACTON	223	3 – 9
CLAPHAM PARK	240	6 – 8
OCEAN ESTATE	261	4 – 9
WALTHAMSTOW ARCADE	263	3 – 6
QUEEN ELIZABETH HOSPITAL	299	4 – 9
CERES, CB1	303	6 – 7
ABELL & CLELAND HOUSE	319	13
BERMONDSEY SPA	333	3 – 10
MICAWBER STREET	350	2 – 7
CAMDEN COURTYARDS	410	7

ESTIMATED NUMBER OF HOMES PROVIDED BY THE 2017 TALL BUILDINGS PIPELINE BY BOROUGH

	PIPELINE HOMES	LONDON PLAN (YEAR'S SUPPLY)	NEW LONDON PLAN (YEAR'S SUPPLY)
BARKING & DAGENHAM	1462	1.2	0.6
BARNET	3960	1.7	1.3
BRENT	3008	2	1
BROMLEY	184	0.3	0.1
CAMDEN	552	0.6	0.5
CITY OF LONDON	352	2.5	2.4
CROYDON	6696	4.7	2.3
EALING	2985	2.3	1.1
GREENWICH	16,016	6	5
HACKNEY	3411	2.1	2.6
HAMMERSMITH & FULHAM	7782	7.5	4.7
HARINGEY	1272	0.8	0.6
HARROW	384	0.6	0.3
HOUNSLOW	376	0.5	0.2
ISLINGTON	1702	1.3	2.2
KINGSTON	176	0.3	0.1
LAMBETH	6502	4.2	4.1
LEWISHAM	3974	2.9	1.9
NEWHAM	6845	3.4	1.8
REDBRIDGE	624	0.6	0.3
SOUTHWARK	11,052	4	4.3
SUTTON	497	1.4	0.5
TOWER HAMLETS	20,278	5.2	5.8
WALTHAM FOREST	400	0.5	0.2
WANDSWORTH	5040	2.8	2.2
WESTMINSTER	1529	1.4	1.5

LOOKING AHEAD

Our research shows that tall buildings that started construction in 2017 took an average of 2.4 years from planning permission to begin the construction phase, which is broadly the same as the previous year's average of 2.3 years. Once work is under way then a tall building takes an average 2.5 years to complete based on the tall buildings completed in 2017, which is shorter than the previous year's average of 2.9 years.

There were 22 tall buildings in 2017 which had received a resolution to grant planning permission five or more years ago but have not yet started, which is down from 2016's 31 tall buildings.

It is evident that more and more tall buildings are commencing construction within a relatively short period of time of less than three years from the resolution to grant planning permission - notwithstanding the challenges presented by negotiating section 106 agreements, detailed design work and discharging pre-commencement conditions. The time taken to complete the construction is also shortening which may reflect the growing confidence in London economy and improving construction technology. The actual delivery rate of tall buildings in London is very high once planning permission has been granted and is anticipated to remain strong in the foreseeable future, as tall buildings increasingly play a more important and prominent role in the growth of London.

It is clear from the evidence here that tall buildings can make a significant contribution towards London's housing need, and can be more efficient in land terms than say a mansion block typology. Clearly, there are other factors to consider but both typologies have a role in meeting housing need.

It will be interesting to see whether the Mayor of London's new and emerging policies for affordable housing and movement away from a density matrix approach to a design-led and local context approach to assessing tall buildings will have any discernible effect on the volume of tall buildings proposed.

MODELLING AND CLUSTERING

As a result of recent policies and planning choices, the new tall buildings coming up in the London pipeline appear to be located in clusters – in areas identified suitable for densification, either by a strategic document such as the London Plan, or at borough level such as with Local Plans. Yet, the importance of design quality of each tall building, either if it is located in a cluster or not, is crucial to avoid any negative impacts in the surrounding areas. The following viewpoints reflect on the challenges of planning for clusters and the possibilities that digital technology offers to assess suitable locations and impacts of new tall buildings.

THE FUTURE OF TALL BUILDINGS IN 3D PLANNING

By Jason Hawthorne, Director, VU.CITY

London's skyline is changing at an astonishing rate and every week there is another news story about the housing crisis. Meanwhile major development proposals continue to flood in and Councils are actively promoting regeneration areas which will undergo significant change in the coming years.

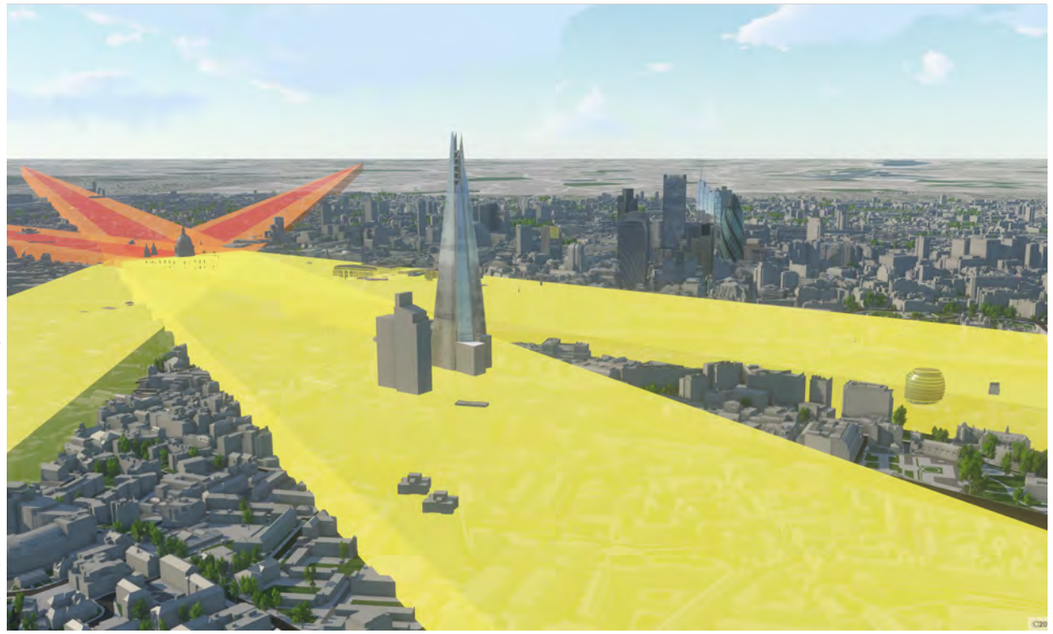
Why then are we all continuing to assess the scope and scale of this change primarily through the prism of physical models and computer generated images?

New London Architecture and many in the industry have long been calling for a fully integrated digital model of London to help the Mayor, local planners, developers, professionals and local communities to better understand the impact of new development and to generate a more positive and collaborative attitude to growth. The draft London Plan also calls for such a tool.

It can, understandably, be difficult for people to visualise and assess what the real impact of a proposed tall building will be both in the streets immediately around a scheme and in views from further away. But an accurate digital model, like VU.CITY, which includes every building, road, tree and public space, accurate to 15 centimeters, can immediately show a proposed building in context, so that their scale, massing and impact can be easily tested. As well as showing the current built environment, by being continuously updated with consented schemes, a digital model can also show the cumulative development pipeline for London.

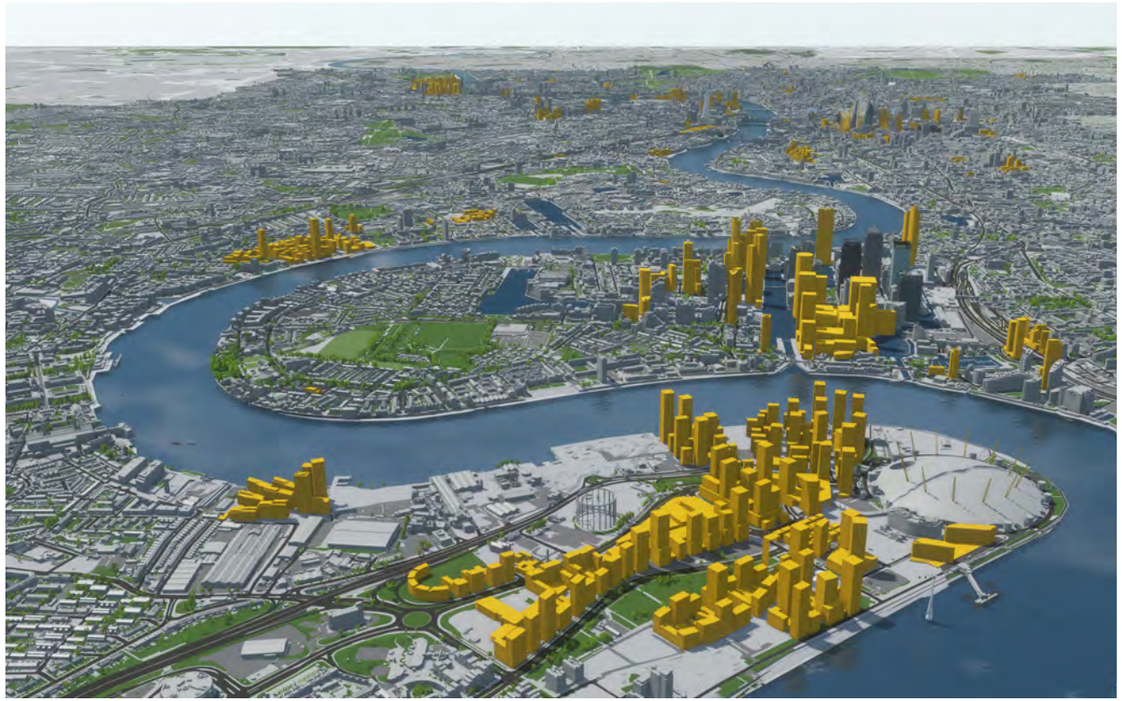
Other technology advances which need to be embraced include the use of virtual reality headsets and augmented reality on our mobile phones, which enable users to walk down a street and get a true sense of the impact of proposed changes to the built environment and the impact on the ground.

These 3D planning tools will help create better debate and collaboration and are already directly leading to better decision making in our capital and will, ultimately, contribute to a better built environment for London's population today and in the decades to come.



A sample of protected views from St Pauls Cathedral, by VU.CITY

Canary Wharf and Isle of Dogs, by VU.CITY



Areal view from above Greenwich Peninsula looking west, by VU.CITY

THE CITY EASTERN CLUSTER CASE STUDY

By Gwyn Richards, Assistant Director, Development Management Design, Department of the Built Environment, City of London Corporation

There continues to be a lively and often polarised debate on tall buildings in London. Because of their substantial wider impact, a meticulous and disciplined assessment of their appropriateness is essential. In the City we've completed a complex 3D-assessment of the views, microclimatic (wind, sun to ground, air pollution) and pedestrian impact of tall buildings which has given us a holistic and robust toolkit to refine assessments. This proactive (rather than reactive) approach has given us a clear understanding of the future capacity for new tall buildings and a guiding vision on how the City cluster will continue to evolve.

As London aspires for higher densities for both living and working, tall buildings will increasingly play an important role. Clearly, many view tall buildings as exclusive impositions on the skyline which benefit the privileged few. Therefore, key to a wider public acceptance of new tall buildings is that they need to benefit all Londoners not only those who are fortunate to live or work within them.

In this respect, in the City, we maximise public access to our recent tall buildings with the ground floor plane opened up to all and we have secured eight free public viewing galleries at the uppermost storeys of the towers, a public asset for all Londoners to enjoy outstanding views over the City. Historically such elevated views were the sole demise of the privileged and wealthy and often embodied economic inequality. The City is seeking to exploit these elevated views for all to enjoy.

In this way, the new generation of tall buildings offer substantial wider public benefits irrespective of Londoners' economic or social position and fulfil key principles of Inclusivity and "Good Growth". If we can all deliver these wider public benefits, tall buildings will not only be widely accepted by Londoners, but hopefully even warmly embraced by all.

THE CITY OF LONDON EASTER CLUSTER.

GOOD DESIGN

By Ian Simpson, Founding Partner, SimpsonHaugh

Cities are the drivers of our economic development. We, in London, have a growing city population and one option for a sustainable urban future is to build upwards. Tall structures impact on a city's skyline and it is essential that they contribute positively. Design quality is fundamental to that perception.

Good design starts with a form derived from an intuitive response to programme, context and place. It is important to achieve as elegant and slender a profile as possible, a beautiful building that reflects and refracts the sky and the streets, constantly changing in response to light, time and season. The materiality and façade should reinforce the often singular form, absorb the expression of the individual home and create a whole greater than the sum of its parts.

A tall building should touch the ground lightly, maximising the opportunity for public realm and helping create a real sense of place. The top of the building is often the culmination of the singular form, what happens between should be inspiring, not formulaic. The building envelope and its materiality should heighten the quality of life and experience for the residents, flooding the home with natural light, whilst providing views and aspect. This has been our ambition with One Blackfriars, a residential tower, hotel and public square, located on the southern bridgehead of Blackfriars Bridge.

In London, we have the opportunity to fully explore architectural language and material choice as sales values are able to sustain investment in our buildings and public space. Unfortunately, however, more often than not, the political, planning and development processes result in a mediocre architectural response. The refuge for such compromised solutions is generally the 'cluster': the collective grouping of, often quite similar, 'polite modernist' neighbours around transport nodes or gateways. This is a solution that is positively supported by many London boroughs.

Alternatively, high quality singular mixed use, super tall buildings could offer a socially sustainable future. Effective interaction can occur where building uses interface: restaurants, bars, viewing galleries, parks and retail can all be embedded within a vertical street. It is in accommodating the height and scale of such buildings on the city skyline that is in itself the challenge for London.

ONE BLACKFRIARS, by SimpsonHaugh for BerkeleyGroup. Status: under construction.

DOLLAR BAY, by SimpsonHaugh for MountAnvil. Status: completed (2016).

CONSTRUCTION

With 115 tall buildings currently under construction and another 267 with planning permission awaiting to start on site, the construction sector needs to step-up in order to address challenges such as supply and cost of materials, especially after Brexit, and reduce the time of delivery. Innovation such as modular construction and new smart technologies are part of the solutions. In this section, a few experts from the industry reflect on these challenges, while addressing important issues such as fire safety standards.

FIRE SAFETY IN TALL BUILDINGS

By Mark O'Connor, Director, WSP

As the number of tall buildings in London continues to grow and with the tragedy of Grenfell tower still very much in our minds we must be constantly vigilant to get fire safety absolutely right. People need to be confident that their homes are safe for them and their families and we as engineers must always think about fire safety from the very start of the design process.

Rafts of active measures are at our disposal to achieve this from alarms, and smoke/heat detectors to sprinklers that can effectively detect and suppress a fire before it grows. One of the first things to consider are active smoke control measures such as automatic venting and pressurisation as the staircases and corridors are some of the most dangerous parts of a building, where people can be often overcome by fumes and toxic gases.

There are also passive measures at our disposal such as compartmentation to contain a fire to the specific room where it started allowing residents to safely remain in their homes. If a fire does spread beyond its "compartment", then one thing we need to ensure is that the overall structure of the building is stable. This is best achieved by calculating the maximum fire size that can arise and fire protecting the structure accordingly.

Finally, we need to look at all of a building's elements and their role in contributing to a fire, preventing all mechanisms of fire from spreading both internally and externally. This can be achieved by restricting the combustibility of materials and providing adequate fire stopping and barriers around any openings where fire could penetrate.

The public enquiry into Grenfell will continue for some time to come. It is not for us to speculate about the actual fire measures that were in place in that incident which will become evident in due course. One issue is whether the fire safety measures in place at Grenfell were up to modern standards. Only by applying a more holistic, performance based design approach to fire engineering using all the range of active and passive measures we have at our means can we ensure that everyone has the best chance of getting out of a building during a fire. We now look forward to Dame Judith Hackitt's thorough review of the current fire safety regulations.

THE SCALPEL, by KPF for WRBC Development, The City of London. Status: under construction.

THE COST OF CONSTRUCTION

By Shaun Tate, Director, Mace

In London we are heading towards a crossroads in construction, particularly in the context of tall buildings. The sector is faced with a constrained labour supply, rising commodity and materials costs (steel in particular), volatile exchange rates and falling values affecting site viability. Yet there are signs of declining demand in the commercial and prime residential markets which could feed through to lower tender prices due to increased competition.

It is Mace's view that the route through these challenges is to focus on productivity, and ensuring on-time delivery. The sector's lacklustre productivity levels and need for improvements are well known. Over the last decade output per worker has remained flat in construction, whereas the service sector has improved by just over 30% and output in manufacturing has rocketed by more than 50%. For construction, 'Industry 4.0' provides a way to deliver transformational growth in productivity. In the medium term it represents a move to a world in which technology from artificial intelligence to advanced robotics to autonomous vehicles will transform how our businesses operate and how buildings are created. This revolution will radically improve productivity levels, quality, safety and environmental impact.

We're already on the journey. One method we're deploying to secure project certainty is creating more of a manufactured construction process, as best demonstrated by our Rising Factory project at the East Village in Stratford for Qatari Diar Delancey. This is a new way to build tall developments without the use of tower cranes. We are seeing an acceleration in the deployment of digital collaboration between delivery partners, and a focus on modular offsite manufacturing.

N08, East Village, by Mace for Qatari Diar Delancey, Newham. Status: under construction.

MODULAR TOWERS

By Simon Bayliss, Managing Partner, HTA Design LLP

The past year has seen the long anticipated convergence of two innovations in UK housing – the widespread acceptance of purpose designed Build to Rent homes as a new sector, and its delivery using advanced modular construction systems. This is perhaps exemplified in the approval of 101 George Street in Croydon which started on site at the beginning of 2018.

The site, vacant for over 20 years and yet just a few steps from East Croydon station, is a key element in the transformation of central Croydon. Designed by HTA Design for Tide Construction and Vision Modular Systems, the scheme is for a pair of joined towers stepping from 36 to 44 storeys, delivering 546 neatly stacked new homes with public facilities at ground level and residential amenities atop each tower.

Much taller than previous consents for the site, driven by the Council's ambitions to increase the number of homes and amount of affordable housing so close to such a busy station, the project team made the most of shared experience and developments in BIM technology. This will further push the boundaries of modular construction following their recent completion of the 28 storey Apex House in Wembley, currently Europe's tallest modular building.

The team have perfected their ability to coordinate architecture and engineering, enabling the modules to work as efficiently as possible whilst the accommodation layout and façade design responds primarily to the city context.

Built for US rental giants Greystar, the early agreement of apartment layouts and finishes specifications facilitates efficient manufacture by Vision Modular Systems, and in turn brings the benefit of a circa 50% savings on programme. Using precision-manufactured modules will also accelerate the pace at which the towers are being built, causing less disruption onsite.

Work on the project started in early 2017, gaining a detailed planning consent in November with a fully coordinated design that started on site just a few weeks later. Construction is expected to take just 24 months and on completion will be the tallest modular building in the world.

APEX HOUSE, by HTA Design LLP for Tide Construction, LB Brent. Status: completed.

101 George Street, by HTA Design LLP for Tide Construction, LB Croydon. Status: under construction.

Tall buildings in the right location and with the right quality of design play a significant role in regeneration. At borough level the benefits brought to an area could mean more contribution through S106 and CIL (Community Infrastructure Levy) that local authorities can use to fund projects benefitting the whole community, as well as the provision of affordable homes. Three local authorities provide a viewpoint on how they address the challenges they face in making good plans, making sure tall buildings benefit all.

THE LOCAL CONTEXT

CROYDON

By Jo Negrini, Chief Executive, LB Croydon

Croydon Opportunity Area and some well-connected District Centres have the capacity to accommodate tall buildings, as we have indicated in the newly adopted Croydon Local Plan and growth strategy. Looking out of the window from the Council offices it is also clear that this is not new. Croydon was one of the first places in the UK to embrace tall buildings back in the 1960s with its 'Mini Manhattan' of commercial modernist slab blocks that look relatively modest to contemporary eyes accustomed to the towers of Canary Wharf, the City and elsewhere in London. More recently we have consented a new generation of tall buildings in Croydon – usually slender-not-slabby residential towers – and a few of these have already been built or are well underway, including at Saffron Square, Ruskin Square and 101 George Street.

In Croydon we believe that new, well designed towers definitely have their role and can make a genuinely positive contribution to delivering growth and successful placemaking. But we are also of the opinion that they are not the be-all-and-end-all and in some circumstances are not the optimal or most appropriate form of development. There are many typologies available and many ways of delivering high densities and high quality places and tall buildings are just part of the wider design and development toolkit.

Issues that we have identified with proposals that include tall buildings include build costs that impact on deliverability and viability, potential environmental and heritage impacts and how to successfully integrate affordable and family homes. Tall buildings can also be very controversial and seem to be more at risk of being paper exercises that do not translate in to real delivery.

But there are significant benefits associated with tall buildings. They can help define and enhance the skyline and image of a city or a place, act as urban markers and emphasise points of importance or significance, deliver high density and can bring buildings of exceptional design quality.

Since 2010, Croydon Council has consented schemes including buildings above 20 storeys that – if all built - would yield over £12 million S106, £13 million CIL and over 1000 affordable homes. Of the consents since 2010 that have actually translated in to construction so far, circa. £1 million S106 has been received and circa £700k CIL received to contribute to the Borough's CIL paot, to be spent strategically on infrastructure projects in line with the Borough's adopted Infrastructure Delivery Plan.

TABERNER HOUSE, by AHMM for Hub, LB Croydon. Status: permission.

SOUTHWARK

By Micheal Tsoukaris, Group Manager Design & Conservation, LB Southwark

Like any good whodunit, every tall building requires those involved to have the means, the motive, and the opportunity, before they can take part. Over the last few years, the opportunities for towers have proliferated, especially in London. In Southwark too the debate in favour of tall buildings has come forward a long way since The Shard.

We recognise that sensitively located and appropriately designed tall buildings can have a transfyormative and beneficial effect on an area. Our approach is plan-led like in the Elephant and Castle area, where we now have a planning framework that defines the opportunity. This has enabled tall buildings to be sited appropriately, sometimes alongside new conservation areas or listed buildings, helped to deliver wider benefits like leisure facilities, affordable housing and parks, and a reinstated urban fabric.

Beyond the opportunity, every tower requires a substantial means, heightened by its site specificity and construction timescale. When I reviewed a proposal in Canary Wharf recently, I happened upon the view from Greenwich Park (one of my favourite London views). I was astonished by the number of towers consented but not implemented. Was this a manifestation of opportunity without means?

Finally the success of a modern tower relies on motivating people to embrace it and make it their home. These buildings may be a good vehicle for high density housing and a modern housing mix, but are they the first choice for people seeking to establish roots in an area? Framed in these terms I am not surprised that, in some parts of London, the phenomenon of 'ghost' towers has emerged. I expect this will continue in the most dense parts, where groups of towers now form canyons, especially if they are allowed to become vehicles for investment.

The challenge is not insurmountable. It is down to planners to take a plan-led approach based on a spatial vision and urban rationale that recognises the wider benefits of tall buildings also considers the community they will accommodate.

Southbank and NineElms, by VU.CITY

TOWER HAMLETS

By David Williams, Deputy Divisional Director, Planning & Building Control, LB Tower Hamlets

Back in 1988, Yazz & The Plastic Population announced in a chart topping single "The Only Way is Up". Well, I'm not sure Yazz could see the future but this has certainly proved to be one of the main ways that developments have gone in Tower Hamlets ever since.

The changing face of the East End of London has been illustrated perhaps most dramatically in the skyline of the London Borough of Tower Hamlets. At only 8 square miles and with London's highest housing targets, the availability of former industrial sites, ever increasing land values and latterly better connectivity has meant that developers have pushed to deliver even taller residential and commercial buildings.

Across the borough, but especially on the Isle of Dogs, the Council's planning and design policies, over many years, have worked with the GLA to focus taller buildings in areas with good accessibility, has embraced tests on good design, public realm, inclusive access, fought for better ground level interaction and pushed hard for a high percentage of affordable housing on site. Places like Canary Wharf and Aldgate have emerged as tall building clusters in the borough. More recently, the whole borough has been tested for its suitability for tall buildings by a range of applications and consequently, you can see clusters emerging in South Quay, City Fringe and Poplar.

Taller buildings have a part to play in regeneration in this borough when they are presented in the right place, occupied and are of a high quality design. To us it is more about the energy and the opportunities that more floorspace or housing and especially affordable housing provides - than the height.

Tall buildings are also not without a counterpoint. There are cumulative impacts on local infrastructure which are amplified when a number appear in a small area with considerable demands placed on these locations. In a small borough this is effectively the whole borough. This requires measures to manage their impacts and we have to continue to focus with partners to deliver new and sustainable places over a generation.

To even begin to make this work, as a minimum, this Council has and will continue to secure its own resources through s106 and now Community Infrastructure Levy (CIL) for the infrastructure to support place-shaping with new schools, open spaces, sustainable transport, public realm, community facilities, leisure facilities and a range of employment and training initiatives.

"The only way is up" may or may not be true as we go forward, but these days the next lines to this song are likely written by the Council who reply "while it's not the only way as long as you design it well, address place-shaping and support infrastructure it may happen if it's good enough!" Not catchy, but then planners will always take 477 words to say what they should in 300.

LONDON CITY ISLAND, by Ballymore, LB Tower Hamlets. Status: under construction.

Millharbour Quarter, by Greystar, Tower Hamlets - Status: completed (2018) ©Rock Hunter

PROGRAMME CHAMPION AND RESEARCH PARTNER

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GL Hearn is a leading UK property and planning consultancy providing commercially driven advice to developers, investors, public sector bodies and occupiers. The company's development group is a fast expanding and highly regarded team working on some of the highest profile projects in the UK.

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GL Hearn's development team is one of the most well-established in the country with over 130 planning and development professionals providing an unparalleled service. We are especially proud of our involvement with the Tall Buildings research from its inception. Our tall buildings specialists contribute key insight and thought leadership which is informed by our experience of delivering planning consents for tall buildings across the capital.

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PROGRAMME CHAMPION

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PROGRAMME SUPPORTER

SimpsonHaugh

Since 1987, SimpsonHaugh has played a major role in the regeneration and transformation of cities. The design-led practice champions mixed use, high density solutions which act as symbols of civic pride, confidence and ambition. Having designed and delivered the tallest building in Manchester, Beetham Hilton Tower, their current three Thames-side developments, One Blackfriars, Circus West Village at Battersea Power Station and Dollar Bay, also seek to engender a sense of community within vertical living, creating new identities for previously underused urban areas.

Based in London and Manchester, SimpsonHaugh's talented team of architects, designers, visualisers, model makers and support staff works across residential, commercial, cultural, masterplanning and infrastructure typologies.

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NEW LONDON ARCHITECTURE

This NLA Research Paper was published by New London Architecture (NLA) in April 2018. It is the fifth NLA London Tall Buildings Survey, an annual publication that delivers up-to-date figures and analysis on the role of tall buildings in the capital. The original Insight Study 'London's Growing Up!', published in 2014, showed for the first time how some areas of London were seeing an increasing number of tall buildings of 20 storeys or more as a response to densification, sparking debate among professionals and Londoners on where and how London's growth should take shape. At NLA, the year-round Tall Buildings programme of events, talks and debates invites industry experts, decision-makers and the public to discuss one of the capital's most debated topics.

New London Architecture (NLA) is the independent centre for London's built environment, where professionals, politicians and the public can meet, learn and have a voice on the future shape of London. We bring people and ideas together to shape a better city.

Our year-round programme of research, events and exhibitions bring together our broad network to debate and discuss all issues affecting London's built environment.

We are based in The Building Centre, WC1, where our giant interactive model of central London is free to visit six days a week.

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