

THE NEW WAVE

The trends behind the
next generation of high rise

Burj Khalifa, Dubai, UAE
Architect: Adrian Smith



Today our urban skylines are decorated by high rise structures for people to live and work, dominating over the surrounding landscapes with bold aesthetics and architectural flourishes.

And the appetite for designs that reach for the sky is only going one way: up.

The last 15 years have seen the 10 tallest buildings in the world open for business. Currently there are 92 supertall (300m+) and two 'mega-tall' (600m+) buildings under construction around the world. The mixed-use Burj Khalifa in Dubai currently holds the title for the tallest at 828m, but it will be dethroned by Saudi Arabia's 1km Jeddah Tower, which is due to top out in 2021.

Meanwhile, The Dubai One tower, scheduled for completion in 2021, will be 711m tall, and the Suzhou Zhongnan Center, in the Chinese city of Suzhou, is expected to be 729m.

So, what are the trends driving this new wave of high-rise design?

One World Trade Center (Freedom Tower), New York City, US

Architect: David Childs, Daniel Libeskind

8 Spruce Street (under construction), New York City, US

Architect: Frank Gehry



Underlying the shift towards tall building design is the convergence of **global demographic and socio-economic** trends. **Firstly, household sizes are shrinking:**



FERTILITY RATES ARE DECLINING^{2,3}

- Women globally had an average of 4.7 children in 1950. By 2017, that had fallen to **2.4 children**.
- The United Nations predicts that global fertility rates will fall to **2.2 for 2045-2050**, and 2 for 2095-2100.



MILLENNIAL FAMILIES ARE SETTLING DOWN LATER¹

- Millennials are **3x less likely** to have ever been married compared to people in their 70s and 80s when they were a similar age.
- **57% of millennials** have never been married.



LIFE EXPECTANCIES ARE INCREASING⁴

- Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from **12% to 22%**.
- By 2050 there will be 2bn people aged 60 and above.



SINGLE PERSON HOUSEHOLDS ARE INCREASING⁵

- Single person households will see **faster growth** than any other globally in the period from 2016-2030.
- Around **120m** new single person homes to be added over the period.

Secondly, the availability of urban space is increasingly limited. Land is at a premium in high value urban centres, but demand for space is only increasing. The UN estimates that 66% of the world's population will live in cities by 2050. Combined with the overall growth in the number of humans on the planet, this could add 2.5bn people to the number living in cities by 2050.⁶

These factors will fuel the need for high-rise living and working. Architect Renzo Piano's concept of London's The Shard being a "vertical city" with mixed use space tapering up to the sky has paved the way for a better defined role for high-rise towers. With demand for space increasing and public opposition to tall buildings diminishing, it is a model that is starting to gain traction. According to New London Architecture and real estate consultancy GL Hearn, there are a record 510 tall towers planned in the next decade in London alone.⁷

Global economics is also playing a major role in driving architects to look to the skies.

One example of this is the powerhouse economy of China which has seen huge growth over the past decade. The country's prosperity has correlated with the construction of an astonishing 88 buildings of 200m or higher in 2018 alone, more than any country has ever completed in a single year.⁸ To put that into context, the US – in second place – built just 13.

The Shard, London, UK. Architect: Renzo Piano

And many of China's skyscrapers are being developed in (by the country's standards) smaller cities, with the aim of using them to attract investment and turn these locations into bigger centres of economic activity.⁹

In more economically developed cities around the world, new skyscrapers must often compete against each other to win tenants and businesses. For this reason, architects are encouraged to ensure their designs make a virtue of constrained space and rise up to make a statement on the skyline.

But land values and demographic shifts can't account for all tall building developments, whether past, present or future. Space is not at a premium in the desert, for instance, while the price of land in Morocco or Kenya¹⁰ can hardly compare with that of central London, Hong Kong or New York.

So what else is it that makes architects want to plant a flag in the sky? Perhaps it is the same reason that cities are often so keen to embrace them. The taller the building, the more visible the expression of design. People look upwards for inspiration.

As an architect, why make your mark on the ground when you can make it in the sky?

Shanghai, China



INNOVATIVE HIGH RISE PROJECTS

THE PEAK OF POSSIBILITY

THE SPIRAL

USA (completion 2022)

This New York skyscraper is named after its defining feature – an “ascending ribbon of lively green spaces”, which spiral around the outside of the building, extending the High Line to the sky, says architect Bjarke Ingels.

THE JEDDAH TOWER

Saudi Arabia (completion 2021)

This 1,000m (3281ft) tower will be the world’s tallest when completed, pushing the limits of skyscraper design higher than ever. As well as a hotel and almost 500 apartments, it will house the world’s highest observatory.

THE TULIP

UK (completion 2025)

At almost 305m (1001ft) tall, this Foster + Partners-designed tower in London – shaped like a tulip bud atop a stalk – will undoubtedly stand out. Its innovative features include double-decker lifts and glass pods that will rotate on tracks built into the outside.

W350

Japan (completion 2041)

Sumitomo Forestry is proposing to build this 70-storey hybrid timber skyscraper in Tokyo to mark its 350th anniversary in 2041. The building would use a ‘braced tube structure’ with columns and beams made from steel and timber, supplemented by additional diagonal steel braces.

LEEZA SOHO

China (completion 2019)

This tower in Beijing’s financial district, designed by the late Zaha Hadid, will contain the world’s tallest central atrium at 190m (623ft) high. The building was cleverly designed to straddle a new subway tunnel which runs diagonally across the site.

EXTERNAL SOURCES

1. <https://www.pewresearch.org/fact-tank/2018/03/16/how-millennials-compare-with-their-grandparents/>
2. <https://www.bbc.co.uk/news/health-46118103>
3. <https://www.un.org/development/desa/publications/graphic/wpp2017-global-fertility-rate>
4. <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
5. <https://blog.euromonitor.com/households-2030-singletons/>
6. <https://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html>
7. <https://www.glhearn.com/news-and-events/publications/nla-tall-buildings-survey-report-2018/>
8. <http://www.skyscrapercenter.com/year-in-review/2018>
9. <https://www.citylab.com/life/2017/12/the-record-setting-skyscraper-boom-of-2017/548675/>
10. <https://www.citylab.com/life/2017/12/the-record-setting-skyscraper-boom-of-2017/548675/>

© Copyright 2019 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.