Futureproofing 2.0

Upgrading commercial assets to create lasting value

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Preface

We live in an era of change. Conventional businesses and traditional skill sets are giving way to new business processes, systems and hence newer mindsets. Corporates today are becoming more and more inclusive, and are onboarding a millennial workforce which demands a very different approach to creating spaces for them and for the firms to thrive. We are also observing emerging trends in building construction that foster sustainability and ensure the safety and wellbeing of its occupants. Constant innovation and upgradation are hence the need of the hour.

As most buildings completed a decade ago are facing the need to upgrade their facilities and amenities to suit newer mindsets, companies in the CRE space are gearing up to support such businesses demands. Very often, traditional office markets with an older generation of buildings also face rental and valuation constraints. This leads us to our present study **Futureproofing 2.0 - Upgrading commercial assets to create lasting value**.

This is the second of JLL's research series on 'futureproofing' commercial office spaces. The first report, **Futureproofing - Assets in an Evolving Market - Investor's Perspective**, dealt with the need and various aspects of upgrading old buildings. This sequel maps the prime office markets of the top three Indian cities of Mumbai, Bengaluru and the Delhi National Capital Region (NCR). We have assessed office buildings that are nearly a decade old and slowly facing the heat of rapidly changing workplace dynamics and new age alternatives.

While upgrading older buildings ensures tenant retention and brand enhancement, it definitely entails financial considerations in terms of higher rentals and valuations for various stakeholders. We see that while 64% of India's Grade A office space is concentrated in its top 3 cities, 28% of such spaces are at least a decade old, sans the latest facilities that newer buildings offer. Upgrading these buildings presents **a massive investment opportunity of an estimated INR 55 billion**.

Central to most urban resilience stories, lies the core ability to adapt to market forces for local economies to rebound. In this case, by futureproofing older office buildings, we have tried to size the opportunities available for commercial office development firms, commercial office space owners as well as CRE leaders. Part of a larger urban regeneration and revitalization exercise, futureproofing old commercial buildings, especially those of traditional CBDs, goes a long way in re-building a city's urban character. On the other hand, by ultimately leading to higher realisation of rent and valuation from once iconic buildings, the exercise also helps revitalise the local economy and community - often giving back the city its pride by rebuilding its iconic skyline.

Happy reading!

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Executive Summary

Grade A stock with upgradation potential **104.7** mn sq ft

BENGALURU	DELHI NCR	MUMBAI
34.5 mn sq ft	26.4 mn sq ft	43.8 mn sq ft

Investment potential across top 3 cities INR **54.8** billion

BENGALURU	DELHI NCR	MUMBAI
INR 13.1 billion	INR 15.6 billion	INR 26.1 billion

Potential Rental **Escalation** post upgradation - up to **40%**

BENGALURU	DELHI NCR	MUMBAI
4%-25%	5%-30%	8%-40%

Future Proofing India's Prime Office Markets

Shifting CBDs drive structural change in commercial real estate

The world is changing at a rapid pace, driven by science and technology, resulting in a dynamic change in human preferences. From the way we connect with each other, to the way we live, learn and even work, change is all-pervasive. The traditional workplace with closed cabins has given way to modern open offices and co-working spaces. In addition, office buildings are being designed to ensure sustainability and capture ever-evolving human preferences. With the evolving needs of today's workforce, occupiers have started moving into newly developed buildings.

These newly developed buildings are better than their old counterparts in aspects like operational efficiency, operating costs, technology, community, wellness, safety and compliance. The change is being driven by a young workforce who demand modern amenities and collaborative spaces. Traditionally, select occupiers would occasionally upgrade their internal fit-outs to keep up with the times, but not so anymore. This refurbishment exercise has taken on a new form today, with developers upgrading entire buildings and influencing their core positioning. The result is an evolution of building lifecycle management and reduction in the shelf life of office properties. Today, buildings that were completed a decade ago frequently fall short of the expectations and requirements of a new age workforce.

64% of India's Grade A office space is concentrated in its top 3 cities

Of the existing stock of 592 million sq. ft. of Grade A office space in the top seven real estate markets in India, the top three-Mumbai, Delhi NCR and Bengaluru-comprise nearly 64% of the total stock. Additionally, these are the more established markets in the country where most of the investment-grade office buildings with an upgradation opportunity are concentrated.

105 mn sq ft of Grade A office space in India's 3 leading cities provide upgradation potential

28% of Grade A office space in top 3 cities are at least a decade old

The top three cities in India have 379 million sq. ft. of Grade A office space with nearly 105 million sq. ft. being a decade old and facing the risk of higher vacancies and lower rentals. More than 20 million sq. ft. of new commercial office supply is added every year in the top 3 markets of Mumbai, Delhi NCR and Bengaluru, where the new supply comes with greater operational efficiency, better human experience and lower operational costs, pushing the older stock to the brink of obsolescence. Often, this trend can even reduce the attractiveness of entire submarkets, as in the case of the traditional CBDs of the three cities under study. With limited land parcels restricting new development, finding relevant supply in these primary business districts is proving to be a challenge.

Investment opportunity of INR 55 billion yet to be seized

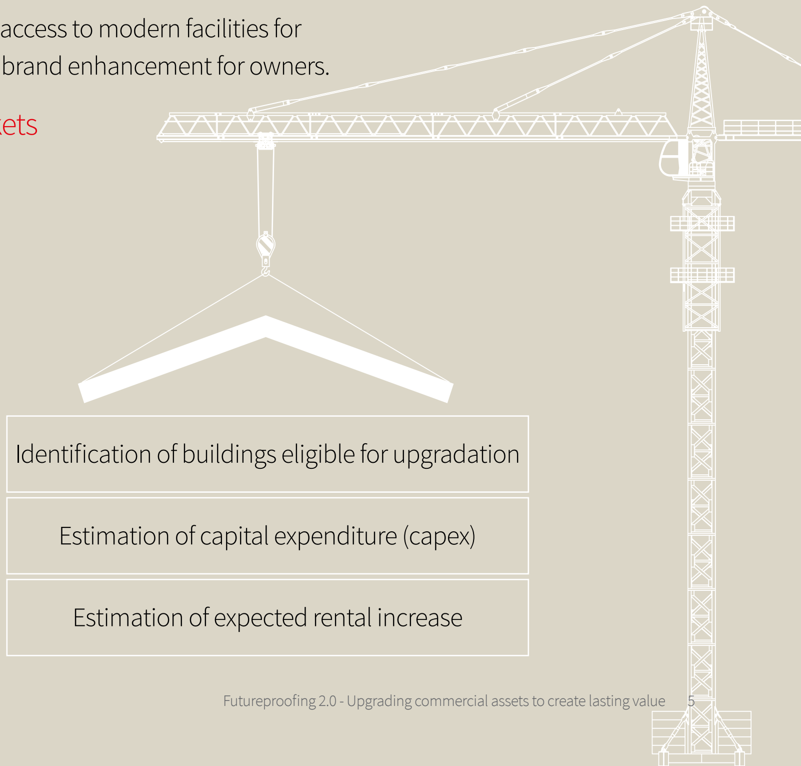
The need to refurbish office properties presents a massive opportunity, spelling a potential investment of INR 55 billion for upgrading ageing assets by future proofing them from low rental and occupancy levels, with modern amenities, designs and building technology. Upgradation is no longer aspirational. It is fast becoming a necessity to survive redundancy. For asset owners, upgradation based on user preferences and technology infusion will be a critical element in a building's lifecycle management in the near future.

Potential investment of INR 55 billion for upgrading ageing assets

The benefits of upgradation are many - enhanced experience and access to modern facilities for occupiers; rental escalation, occupier retention, sustainability and brand enhancement for owners.

Upgradation potential varies across cities and submarkets

Upgradation of a building includes components like human experience, technology, sustainability, safety and security as well as operational efficiency. However, the relative importance of these components, the quantum of investment required and the rental escalation that can be achieved vary across cities and submarkets. While the end objective of upgradation is primarily rental escalation, tenant retention and brand enhancement; for the purpose of this paper, the focus largely remains on rental escalation, considering that it is a direct line of sight for investors. To arrive at the varied opportunity arising out of the upgradation of commercial buildings across leading Indian cities, a bottom-up approach was adopted, broadly involving the following key steps:



Identification of buildings eligible for upgradation

The following criteria were applied to the existing stock of Grade A office buildings in the three leading Indian cities

- Office buildings completed at least **10 years** ago
- Minimum built-up area of **100,000 sq. ft.** in the case of **Mumbai**
- Minimum built-up area of **250,000 sq. ft.** in the case of **Bengaluru & Delhi NCR**

Estimation of capex

The quantum of capex was estimated on the basis of the nature and the different components involved in upgrading a commercial building. Typically, upgradation covers the following elements -

- Human experience
- Safety and security
- Technology
- Operational efficiency
- Sustainability
- Compliance
- Smart building design

Further, these aspects can be broadly divided into **must have, good to have** and **aspirational categories**. While capex can be phased out depending upon the needs of the investor, it is important to align occupier requirements with investor needs.

We have also corroborated and / or drawn inputs from **upgradation undertaken in the last few years within the same submarket of a city**. It is important to note that future proofing based on aspirational trends, whereby buildings are upgraded to reach their full potential, will have a proportional impact on capex.

Estimation of rental escalation

The rental escalation expected from upgraded buildings was determined by using a **benchmarking framework**. We have considered buildings with the highest rentals within a submarket to arrive at the maximum rent that the area can command. This serves as a benchmark for the buildings considered for upgradation. These buildings are then evaluated on the basis of several parameters like their location, access and landscape to arrive at the rental escalation potential post upgradation. It is important to note that the escalation in rent depends on varied factors and might not reach the highest levels witnessed in the submarket.

The subsequent sections of this report take a deep dive into the upgradation potential of prime office districts across the top three cities of Mumbai, Bengaluru and Delhi NCR.

Bengaluru

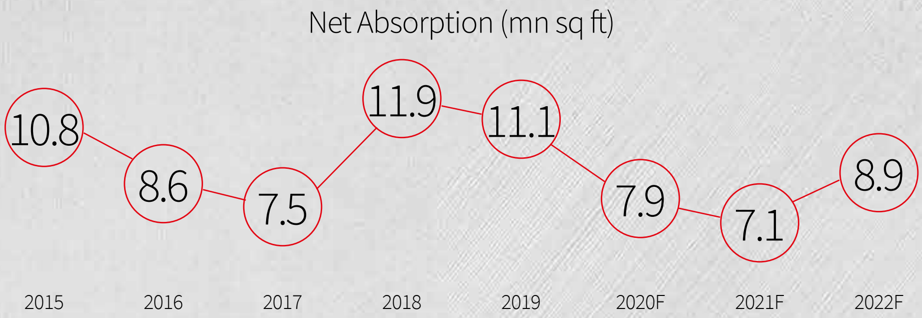
Technology hub of India enjoys strong demand from tech firms

Bengaluru, the IT capital of India, is among the world's fastest growing economies. It topped **JLL's City Momentum Index 2019** for its fast growing economy driving its strong real estate dynamics. This city houses large global tech corporations such as Amazon, Google, Microsoft, Apple, Accenture and Capgemini, to name a few. In addition, it is home to major BFSI firms such as JP Morgan, Wells Fargo & HSBC, as well as consulting firms such as EY, Deloitte, KPMG and Boston Consulting. The city, moreover, is not called India's technology start-up hub for nothing. It attracts tech professionals from across the world and leads in terms of technology-based innovations. All these factors have led to real estate development across asset classes-offices, retail, residential and industrial in Bengaluru.

Bengaluru's office market is one of the strongest in India, reporting one of the highest office space absorptions almost every year. The office market has grown at a fast pace over the last decade-and-a-half, adding tremendous pressure on the city's urban infrastructure. Today, Bengaluru accounts for more than 20% of the overall Grade A office stock in the top seven cities in India. Moreover, the demand for premium office space in Bengaluru is one of the highest in India, as it has maintained an annual net absorption hovering around the 8-10 million sq. ft. mark.

Premium office space demand highest in Bengaluru

Although most of the city's submarkets service tech corporates, in the last five years we have observed occupiers from various sectors leasing space in the city. While the CBD attracted large consulting corporates, the SBD became a hub of e-commerce and BFSI firms. Whitefield and Electronic City, meanwhile, attracted occupiers from the manufacturing sector, who either leased space for their back-end or research-based services. The biotechnology and healthcare sector is also among the key occupiers leasing space in the city, mainly preferring the CBD or SBD for their offices. Although Bengaluru remains a cost effective market for most corporates, a few superior quality buildings in the CBD and SBD command premium rents that are much higher than the market average. Buildings such as UB City, Prestige Trade Towers and Prestige Falcon City in the CBD, or Embassy Golf Links, RMZ Ecoworld, Embassy Tech Village and Prestige Ferns Galaxy in the SBD, are perceived as "an address" in the city and, therefore, witness almost full occupancy. This trend indicates that corporate firms are ready to pay premium rents for quality space in Bengaluru.



Source: JLL Research and REIS

Limited leasable space in Bengaluru's core markets

Submarket	Key locations	Key sectors	Characteristics
CBD	Vittal Mallya Road, Palace Road, and Brunton Road	IT/ITES, BFSI, Co-working, Business Consulting, Legal Consulting,	No upcoming supply, minimal leasing activity with occupiers moving to other submarkets
SBD City	Intermediate Ring Road, and within the Outer Ring Road	IT/ITeS, Tech based start-ups, BFSI, e-commerce, Co-working, Biotech and health care	Restricted supply of commercial space in Grade A buildings with large floor plate. Steady leasing as it has good access to the key residential areas of the city. Fast, upward movement of rents and capital values as high preference from occupiers.
SBD East and South East	Along Outer Ring Road and Sarjapur Road	IT/ITeS, Tech based start-ups, BFSI, e-commerce, Co-working, Biotech and health care	Saturated market & has limited opportunity for development. Houses large business parks and the most preferred locations for occupiers. Fast, upward movement of rents and capital values as high preference from occupiers. However low vacancies moving occupiers towards alternate submarkets.
SBD North	Hebbal, Nagawara, Northern stretch of Outer Ring Road and Thanisandra	IT/ITeS, Tech based start-ups, BFSI, e-commerce, Co-working, Biotech and health care	Good supply pipeline and attracting the spill over demand of SBD East & South East and SBD City.
Whitefield	Whitefield and Brookefield	IT/ITeS, Tech based start-ups, Co-working	Good supply in pipeline. attracting the spill over demand of SBD East & South East
Electronic City	Electronic City and Hosur Raod	ITeS and Manufacturing	Good supply in pipeline, upcoming metro connectivity may attract occupiers to lease space in this submarket

Source: JLL Research and REIS

The CBD and SBD in Bengaluru have a very limited supply pipeline of Grade A commercial space. With limited upcoming supply in such core locations, the demand is slowly shifting towards Whitefield at present and may gradually shift towards emerging locations in North and West Bengaluru. Therefore, the SBD East and South East as well as the Whitefield micro-markets are becoming landlord favourable areas, while leasing activity is slowing down in the CBD and SBD.

Centres of business activity have shifted to the Outer Ring Road (ORR)

While Bengaluru's CBD and SBD were traditionally high-end office markets, Whitefield and Electronic City were cost efficient markets for technology firms occupying a large volume of leased or captive spaces. As land parcels near the ORR were easily accessible about a decade ago, office space development started along this stretch and the SBD East and South East as well as SBD North submarkets emerged. Today this stretch is one of the most congested roads in the city and offices here have lower than 5% vacancy rates. The market is now slowly, but surely, shifting towards Whitefield, which has metro lines coming up as well as a healthy volume of quality supply in the pipeline.

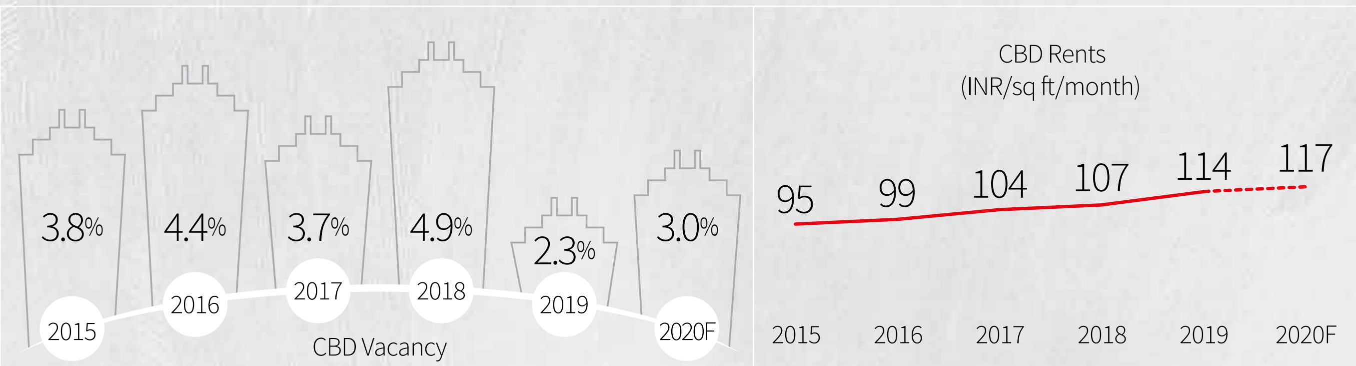
What prompted this shift?

- **1978** – Electronic City started out on 330 acres for developing the electronics industry in Bengaluru
- **1981** – Infosys relocates headquarters to Bengaluru
- **1993** – Infosys Campus started in Electronic City
- **1994-97** – Grade A commercial space development in CBD along MG Road, Infantry Road and SBD City in Ulsoor
- **1998** – India's first business park, ITPL, started operations in Whitefield
- **1999-02** – Grade A commercial space development extends further in SBD City along Koramangala and Bannerghata Road
- **2003-05** – Business parks developed in Electronic City and office development along the ORR took off
- **2005-15** – SBD East and South East becomes the largest submarket in Bengaluru growing along the ORR and vacancy levels remain lower than 5%
- **2015-18** – CBD, SBD City, SBD East and South East experienced low vacancy levels and fast rental growth
- **2019** – Demand shifed towards Whitefield and SBD North

Source: JLL Research and REIS

Although Bengaluru's office real estate market was witnessing fast-paced growth, its CBD had limited available land and most of the office buildings were old, lacking modern amenities and technology. Meanwhile, Whitefield and Electronic City became more attractive to occupiers since these new business districts provided buildings with modern amenities, collaborative workspaces and the latest technology. Additionally, the availability of space for large volume expansion further contributed to the growth of these new business districts.

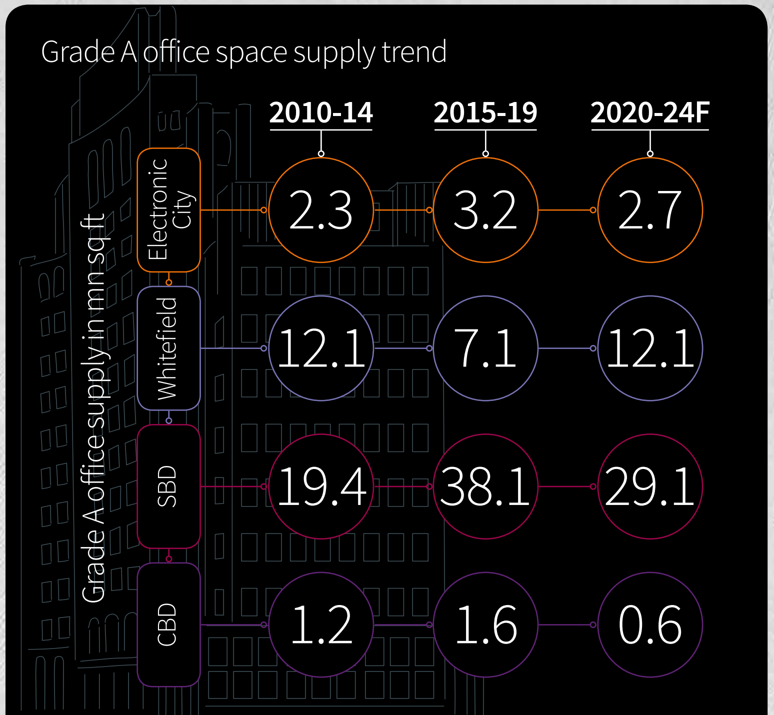
Vacancy drops to all time low in CBD



Source: JLL Research and REIS

Occupiers still prefer the CBD considerably, as indicated by the healthy leasing activity over the last few years. Moreover, newly added buildings in the CBD were mostly pre-committed, indicating the strong demand for this submarket. Consequently, if the supply condition in this submarket is improved by upgrading older buildings, they will not only attract occupiers, but will also likely see higher occupancy and rental rates. The higher rents are a result of better building design and technology with higher safety and security features against relatively older buildings.

Similarly, the SBD submarket, especially the projects within or along the Intermediate Ring Road (IRR), do not enjoy much real estate development opportunities due to limited availability of land for Greenfield development. These locations also witness strong interest from occupiers due to their good accessibility. Upgrading old buildings here can provide a financially viable solution for developers and ease out the low supply conditions in the city.



Source: JLL Research and REIS

Potential upgradation of **35** million sq. ft. Grade A office space

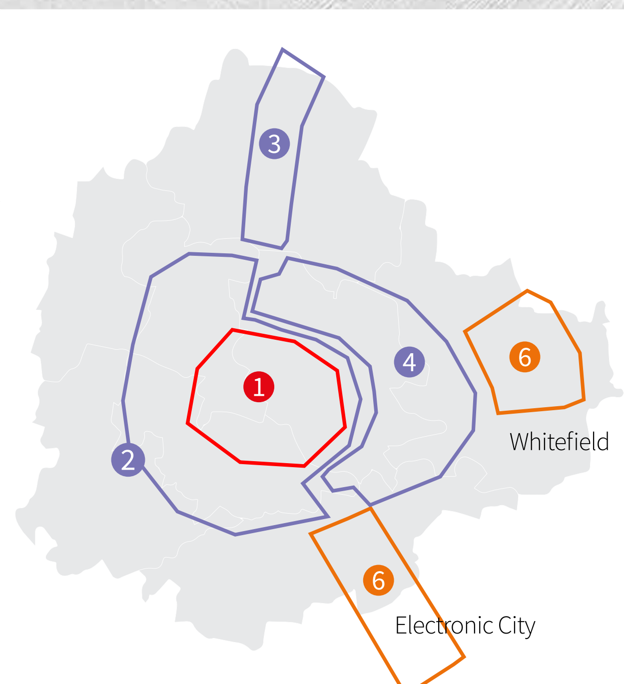
Limited development opportunity leading to low supply pipeline in coming years coupled with occupier preference to lease spaces in the CBD provide an indication of how critical it is for building owners to revitalise the old buildings. Upgraded buildings result in the creation of premium office spaces for occupiers and the following benefits for owners:

1. Higher rentals
2. Higher occupancy due to easy access to public transport and consequent higher absorption
3. Brand building or creating "an address"

In Bengaluru, the quantum of existing Grade A office stock completed 10 years ago stands at **34.5 million sq. ft.** In terms of the number of buildings, this translates to 26% of the total stock of the city.

More than **50%** of the stock that needs to be upgraded lies in the SBD

#	Business Districts	Total Grade A Stock (mn sq ft)	Grade A stock qualifying for upgradation (mn sq ft)	Grade A stock qualifying for upgradation (% of total)
1	CBD	8.2	2.8	34%
2	SBD - City	19.2	8.5	44%
3	SBD - North	19.3	4.4	23%
4	SBD - South and South East	46.2	7.3	16%
5	Whitefield	32.5	8.8	27%
6	Electronic City	9.7	2.7	28%



Source: JLL Research and REIS

Bengaluru presents an INR **13.1** billion investment opportunity

The resultant investment potential in upgrading Grade A buildings in Bengaluru is estimated to be around INR 13.1 billion with a payback period of 3-5 years. As mentioned before, such upgradation involves various components ranging from safety and security to human experience and technology. The need for upgradation and the importance of its various components vary across the city. More importantly, the capex required depends on the building in question and its location.

SBD provides an INR 8-billion investment opportunity from upgradation

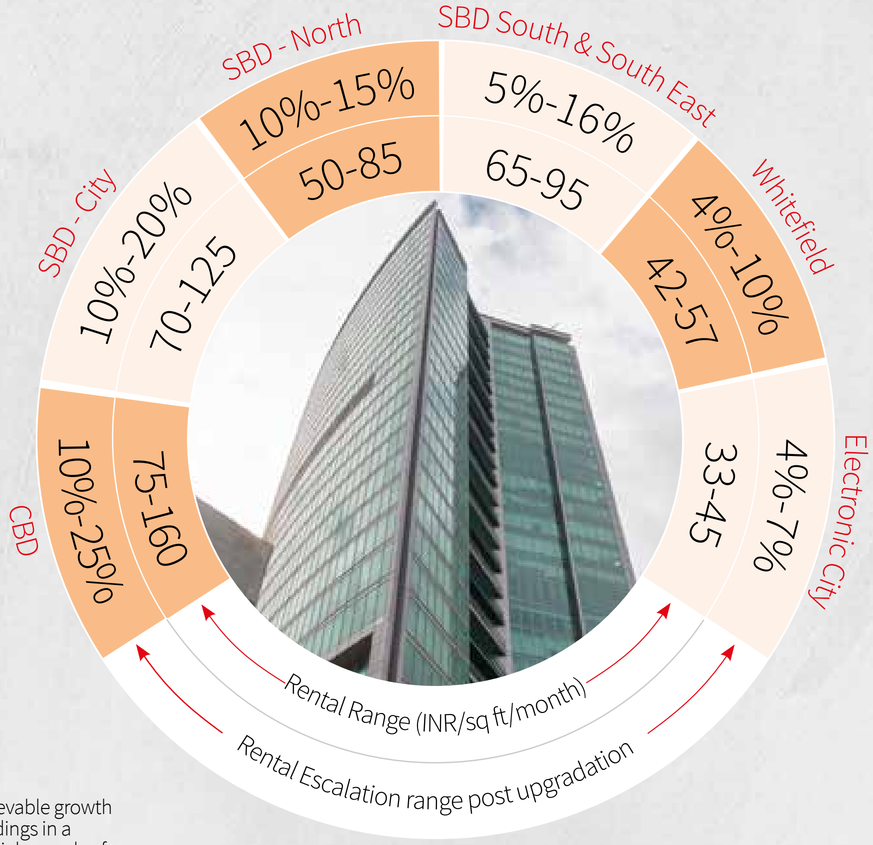
Submarket	**Building Area with age >=10 years** (mn sq ft)	**Upgradation Capex Range** (INR psf)	**Investment Opportunity** (INR billion)
CBD	2.8	350-650	1.5
SBD - City	8.5	300-600	3.6
SBD - North	4.4	300-450	1.7
SBD - South & South East	7.3	300-500	2.8
Whitefield	8.8	200-400	2.6
Electronic City	2.7	200-400	0.9
Total	34.5		13.1

Source: JLL Research and REIS

Rental escalation of up to **25%** possible in upgraded submarkets

With the required capex for upgradation varying across submarkets, the potential increase in rentals depends on factors such as planned infrastructure development and proximity to residential neighbourhoods that make the submarket attractive to occupiers. The CBD and SBD, which are the most sought after office destinations offer the maximum scope for rental escalation while peripheral submarkets like Electronic City offer very limited upside.

CBD offers maximum rental escalation



Source: JLL Research and REIS

Rental escalation reflects the minimum and maximum achievable growth in rents after upgradation across the spectrum of office buildings in a given submarket. It is thus, possible that the lower and the higher ends of the range may confine to select buildings in that submarket.

The maximum share of buildings in SBD City need to be upgraded to remain attractive to occupiers. While SBD City provides the maximum investment opportunity in upgradation, the CBD delivers maximum upsides to office asset owners through rental escalation. With a combined investment opportunity of more than INR 5 billion, these two submarkets are the most prominent options for investors looking to capitalise on the upsides of upgradation. Meanwhile, the SBD East and South East as well as Whitefield offer healthy opportunities for upgradation too. However, the investment on upgradation in these districts may not fetch a premium like that in the CBD and SBD City and, therefore, can be explored at a later stage.

CBD: This is the traditional business district of Bengaluru, which houses the offices of various consulting services, banks and financial institutions. Most of them are housed in Grade B and C buildings. Meanwhile, a good volume of old Grade A buildings house support service offices or head offices of corporate firms. These buildings offer huge opportunity for upgradation. Projects like UB City and Prestige Trade Towers are standing examples of high quality buildings attracting firms like Deloite, 3M, Apple and Boston Consulting, while commanding a rental premium of almost 40-45% above the market average.

SBD City: This submarket, within and along the IRR offers good opportunities to developers and investors for investments in upgradation projects. It must be noted that a few developers are already installing the latest security and safety systems and smart building solutions in these buildings to retain their occupants. However, it still has immense opportunities waiting to be explored.

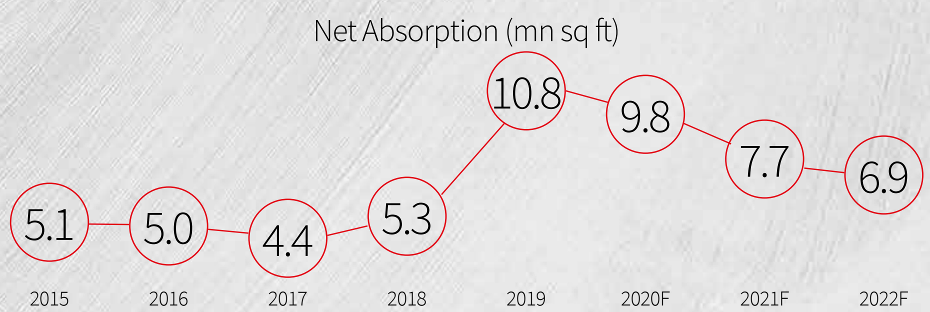
In addition, a few projects like Embassy Golf Links and Prestige Bluechip Even are still able to command healthy rentals without much upgradation by continuing their good upkeep. Therefore, upgradation in this submarket definitely has good potential that is worth exploring.

Delhi National Capital Region

NCR office market charts historical growth

Delhi NCR has a healthy share of around 20% of the Grade A office stock across leading Indian cities. As the largest trade and consumption centre of North India, it also enjoyed a 23% share in the net absorption in 2019. The office market is witnessing robust leasing activity because of high demand from traditional (IT/ITeS, healthcare, manufacturing, etc.) as well as new occupier segments (flex spaces) along with new supply expected in the suburban markets of Gurugram and Noida. The region's office market growth rate can be gauged by the net absorption recorded in 2019, which stood at around 10.8 million sq. ft. This is more than double the net absorption witnessed in 2018, showing the strong growth in leasing momentum this year. Flex space operators had a share of 10% in the region's leasing activity during 2019, with the expansion of some prominent players.

Historic high leasing activity witnessed in Delhi NCR



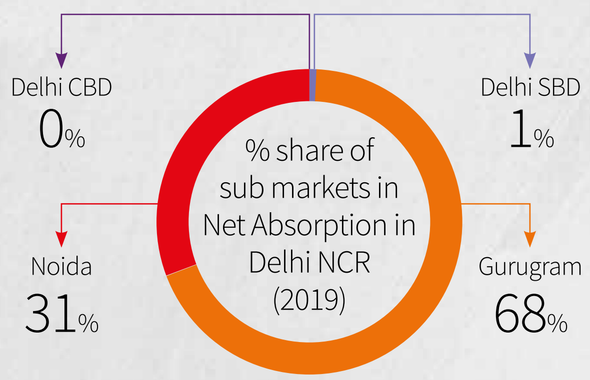
Source: JLL Research and REIS

The suburban markets of Gurugram and Noida are driving net absorption in the market. Over the years, these suburban markets have emerged as prominent office corridors with good quality stock. Delhi's traditional CBD of Connaught Place and SBD submarkets of Saket, Jasola and Nehru Place are showing slower growth compared to the suburbs. The suburban markets of Gurugram and Noida offer high quality office facilities with larger floor plates and added cost benefits from their lower rentals over Delhi. Infrastructure augmentation and emerging office corridors such as Golf Course Extension Road, Gurugram, and the Noida-Greater Noida Expressway are also keeping the leasing momentum robust in the suburbs.

Gateway markets such as Connaught Place, which was once a prominent office hub, have seen a marked drop in leasing activity. With a limited supply of quality office buildings in Delhi CBD and SBD, Gurugram has emerged as a forerunner with Grade A office stock and net absorption. In the last few years, there has been infrastructure augmentation and strong supply of quality office projects in Gurugram. Therefore, it is expected to remain a significant office hub as it enjoys a large, available talent pool, quality office stock and excellent connectivity with Delhi.

Noida is also coming up as a major office market for the IT/ITeS as well as non-IT segments. It also has the advantage of being an affordable office market with good support infrastructure and connectivity to Delhi.

Despite its limitations, demand always exists for the CBD from corporate occupiers and government institutes, international organizations as well as co-working players. Lower office space absorption in this submarket is more the result of supply side constraints than occupier demand. Therefore, upgradation of existing buildings in the CBD and parts of SBD, Gurugram and Noida may be an investment opportunity worth exploring. We have seen instances where co-working players have leased space in older buildings in prime locations and then refurbished them to suit their needs.



Source: JLL Research and REIS

Limited quality stock and upcoming supply in Delhi CBD and SBD

Submarket	Key locations	Key sectors	Characteristics
Delhi CBD	Connaught Place	Legal Consulting, Government Organisations, Foreign Organisations, Media Houses, Corporates, Co-working, BFSI	Limited stock of Grade A office space with larger floor plates. Less upcoming supply, minimal leasing activity with occupiers moving towards suburban markets of Gurugram and Noida
Delhi SBD	Aerocity, Saket, Malviya Nagar, Nehru Place, Okhla, Jasola, Mohan Co-operative area	Media, BFSI, Shipping & Logistics, Co-working, Manufacturing, Research & Consulting	Restricted supply of commercial space in Grade A buildings with large floor plate. Low vacancy levels in quality office projects in prime micro markets such as Aerocity.
Prime NH 8 (includes DLF Cyber City), Gurugram	Prime locations adjacent to NH 8 that are closer to Delhi, DLF Cyber City	IT/ITES, BFSI, Manufacturing, Co-working, Research and Consulting, Telecom	Prime location, excellent infrastructure, proximity to NH 8 and presence of F&B options such as Cyberhub are the main advantages of Cyber city. However, vacancy level is quite low with no supply expected in future
Udyog Vihar	Sector 20, 21, 22 A, Udyog Vihar Phase 1	Co-working, IT/ITES, Healthcare, BFSI, Education, Real Estate	Udyog Vihar has excellent connectivity to Delhi through the highway. It is an **industrial estate** having government offices, standalone buildings and Grade A office projects as well.
NH8 (closer to Manesar), Gurugram	Sector 79, 82,83	IT/ITES, Hospitality, Co-working, Automobile	Presently this submarket has majorly campus style development and buildings that are low on human experience, technology and operational efficiency
M G Road, Gurugram	Sector 25, 26, 27	Hospitality, Co-working, Advertising, Research and Consulting, FMCG, Education	Prime city centre location with good connectivity and availability of public transport. Majorly older buildings with smaller floor plates. Limited supply coming up in the micro market.
Golf Course Road (GCR), Gurugram	Sector 53, 54	IT/ITES, BFSI, Research and Consulting, Manufacturing, Co-working, Healthcare, Ecommerce, Automobile, Pharmaceuticals	Office buildings with larger floor plates catering to a mix of occupiers. Few buildings are fully occupied by single tenants. Limited upcoming supply.
Sohna Road	Sector 47, 48, 49	IT/ITES, Legal firms, Research & Consulting, Co-working, Working professionals	Majorly strata sold buildings providing a mix of smaller as well as bigger units.
Golf Course Extension Road, Gurugram	Sector 58, 59, 61, 62, 65, 66, 67, 69	Healthcare, Co-working, IT/ITES, Hospitality, BFSI Automobile, Real Estate	Upcoming office corridor having newer buildings with bigger floor plates and modern facilities. Lesser rentals as compared to established office corridor. Huge supply coming up in next 2-3 years.
Noida City	Sector 16, 18, 32, 62, Film City	IT/ITES, Media, Co-working, Education and Publishing Houses	Located in the city centre with good connectivity and infrastructure. Majorly older buildings with a mix of smaller and bigger units. Healthy supply coming up catering to the needs of the occupiers.
Noida Greater Noida Expressway	Sector 90, 94, 96, 98, 125,126, 132,135, 142, 144, 152	IT/ITES, Co-working, manufacturing, media, Research & Consulting, Education, E-commerce	Mix of older and newer buildings offering different type of floor plates. Presence of some campus style developments catering to IT/ITES. Few of the older buildings need upgradation and are not properly managed. Healthy supply coming up catering to the needs of the occupiers.
Greater Noida	Yamuna Expressway, Greater Noida, Noida Extension (Greater Noida West)	IT/ITES, Telecom, Manufacturing	Majorly newer buildings however some of the projects are not quality developments. Strong supply pipeline in near future.

Source: JLL Research and REIS

The CBD offers lower vacancy levels and limited upcoming Grade A office supply. For instance, good quality office buildings in Connaught Place are almost fully occupied and, therefore, command good rentals. Similarly, DLF Cyber City has vacancy levels below 5% and is one of the expensive office corridors in Gurugram.

Centres of business activity have moved towards suburban markets and Delhi SBD (Aerocity)

Historically, Connaught Place and its neighboring areas were the most prominent office markets in Delhi NCR, but in recent years the submarkets of Aerocity(Delhi SBD), NH8, DLF Cyber City and Golf Course Road in Gurugram have emerged as the region's corporate hub. While office space has stagnated in Delhi's traditional CBD, its new suburban business districts have been growing at a rapid pace, meeting an enormous demand for commercial office space.

In 1992, Connaught Place had 0.9 million sq. ft. of commercial real estate stock. In 2014, it stood at 2.6 million sq. ft. and has today saturated, as no new supply has come up since then. While there is no scope for development because of the lack of available land, there is scope for upgradation and redevelopment. The only addition in Delhi in the last few years has been the development of the Aerocity corridor. Its proximity to the airport and good accessibility to South Delhi attracts occupier demand, but with a vacancy level of less than 5%, it offers limited leasable space. Meanwhile, the suburban and peripheral markets grew rapidly as Grade A office stock remained stagnant in the CBD and SBD.

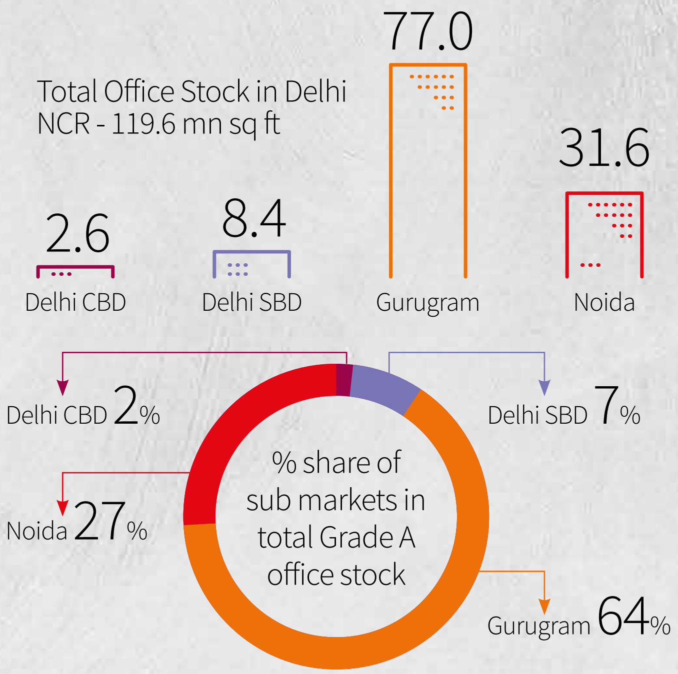
Noida has emerged as an affordable and preferred office market for IT/ITeS companies as well as corporates and occupiers from the manufacturing/industrial, publishing, sourcing industries as well as smaller professional services firms. Lately, co-working operators have also been seeking quality space in Noida.

With submarkets like Connaught Place having saturated, the supply of Grade A office spaces in the next five years is mainly concentrated in Gurugram and Noida. Gurugram accounts for 52% of this upcoming supply in Delhi NCR and caters to traditional as well as newer occupier segments.

Gurugram and Noida drive 95% of the future office supply

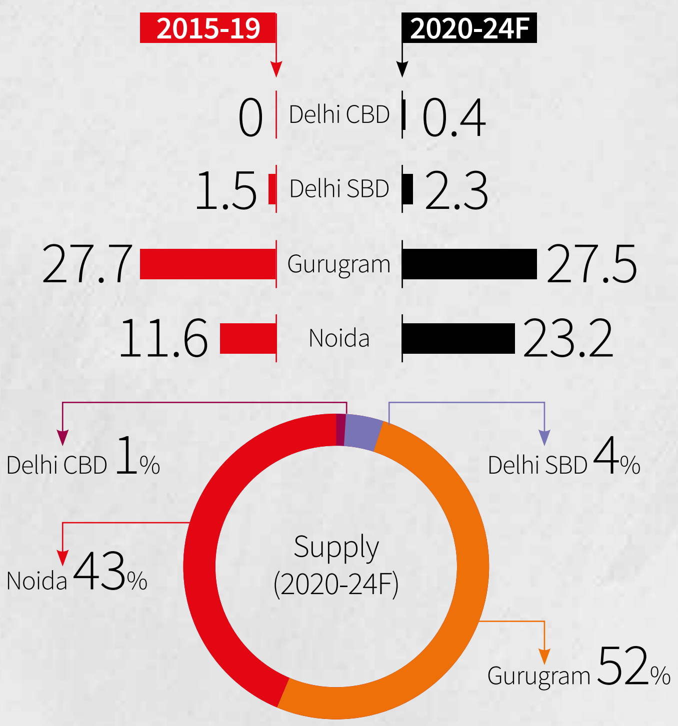
While Connaught Place still holds a prominent position for its strategic location, presence of government institutions and international organisations, most occupiers have shifted to the suburban markets. It is expected that corporate occupiers will continue to favour Gurugram and Noida due to the availability of high-quality space with modern amenities, better operational efficiency and availability of the latest technology. Therefore, it has become quite important for developers to upgrade their office buildings in Connaught Place to stay relevant.

Grade A Office Stock in Delhi NCR (in mn sq ft)



Source: JLL Research and REIS

Supply in Delhi NCR Office Market (mn sq ft)

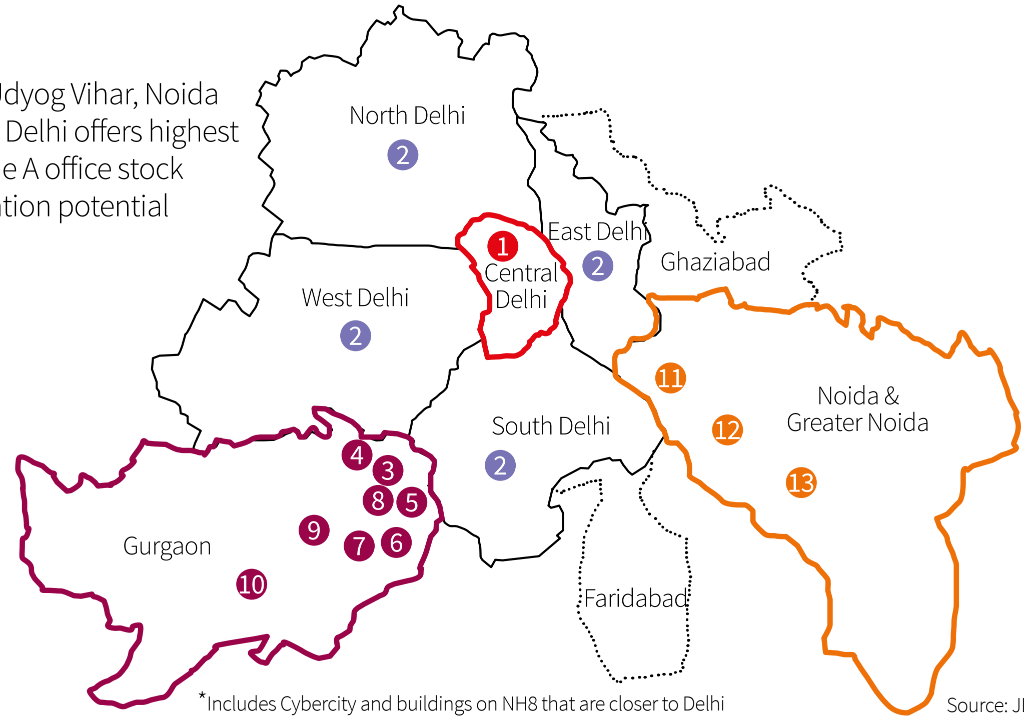


Source: JLL Research and REIS

Potential upgradation of **26.4** million sq. ft. Grade A office space

Low vacancy in the CBD's quality office buildings, rapidly evolving preferences of occupiers and limited scope for further development of premium office spaces even in the SBDs, indicate how critical it is for owners/ landlords to revitalise their buildings. Upgraded buildings result in the creation of premium office spaces for occupiers and added benefits for owners.

Prime NH8, Udyog Vihar, Noida City and CBD Delhi offers highest share of Grade A office stock with upgradation potential



*Includes Cybercity and buildings on NH8 that are closer to Delhi

Source: JLL Research and REIS

#	Business Districts	Total Grade A Stock (mn sq ft)	Grade A stock qualifying for upgradation (mn sq ft)	Grade A stock qualifying for upgradation (% of total)
1	Delhi CBD	2.6	0.7	27%
2	Delhi SBD	8.4	1.6	19%
3	Prime NH8	25.3	10.9	43%
4	Udyog Vihar	6.3	2.2	35%
5	Golf Course Road	8.6	1.5	17%
6	Golf Course Extension Road	9.6		0%
7	Sohna Road	13.1	1.8	14%
8	MG Road	3.7	0.6	16%
9	Rest of NH8	6.1	0.7	11%
10	Manesar	4.4		0%
11	Noida City	13.2	4.7	36%
12	Noida Greater Noida Expressway	13.7	1.4	10%
13	Greater Noida	4.6	0.3	7%

In Delhi NCR, the quantum of existing Grade A office stock that was completed 10 years ago stands at 26.4 million sq. ft. This shows the opportunity in Delhi NCR to upgrade and future-proof its ageing assets with modern amenities, new design and building technology, to appeal to the new age workforce.

Delhi NCR presents an investment opportunity of around INR 15.6 billion

The investment potential in upgrading Grade A buildings in Delhi NCR is **INR 15.6 billion** with a payback period of 3-5 years. As mentioned earlier, such upgradation involves various components ranging from safety and security to human experience and technology. The need for upgradation and the importance of its various components vary across the city. More importantly, the capex required depends on the building in question and its location.

Prime NH-8, Gurugram provide INR 7.7 billion investment opportunity in upgradation

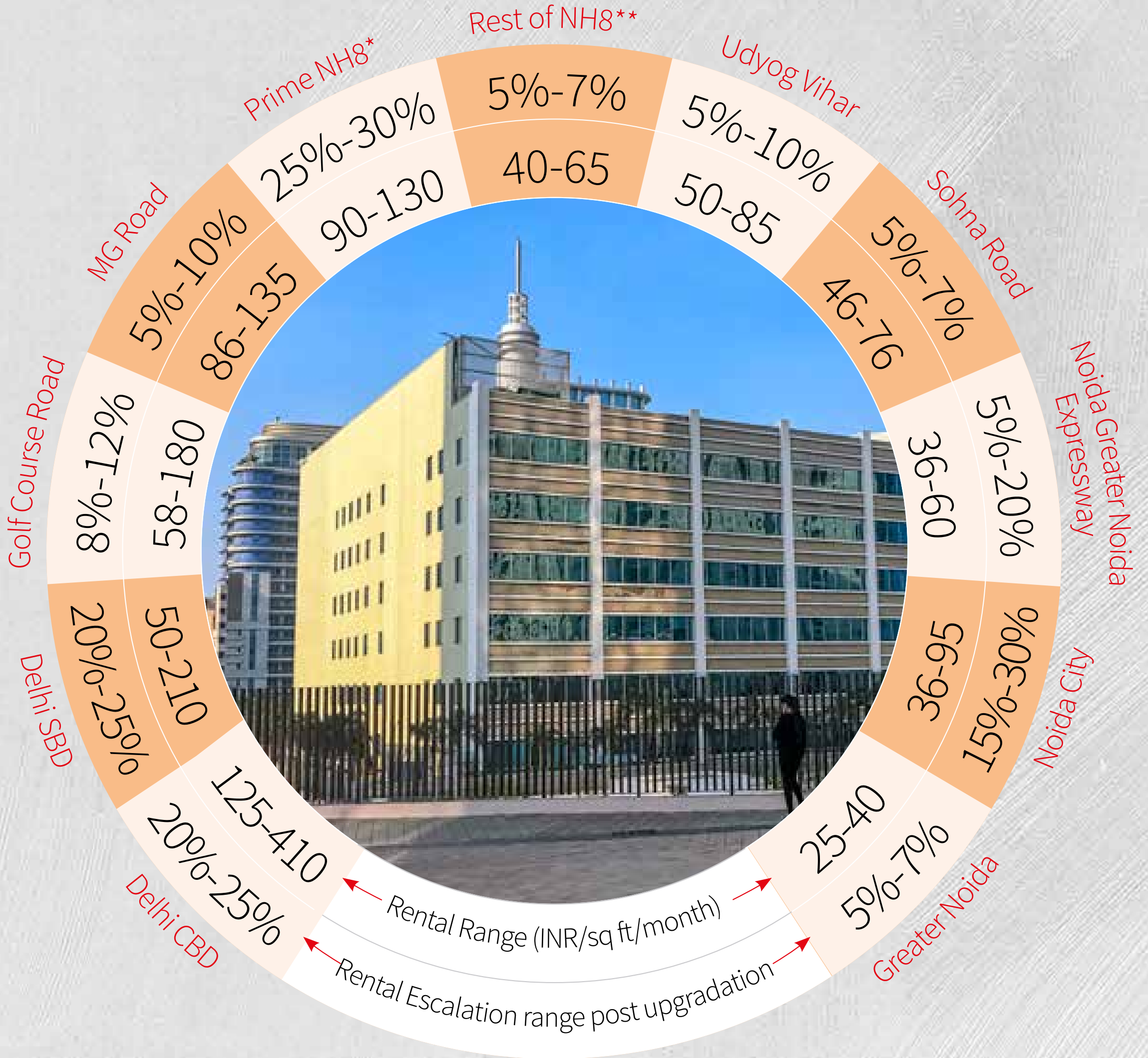
Submarket	**Building Area with age >=10 years** (mn sq ft)	**Upgradation Capex Range** (INR psf)	**Investment Opportunity** (INR billion)
Delhi CBD	0.7	700-900	0.5
Delhi SBD	1.6	700-900	1.3
Golf Course Road	1.5	400-500	0.6
M G Road	0.6	300-400	0.2
Prime NH8 (including prime locations adjacent to NH8 and DLF Cyber City), Gurugram	10.9	600-850	7.7
Rest of NH8 (closer to Manesar)	0.7	200-300	0.2
Udyog Vihar	2.2	250-400	0.7
Sohna Road	1.8	200-300	0.5
Noida City	4.7	500-800	3.2
Noida- Greater Noida Expressway	1.4	300-700	0.6
Greater Noida	0.3	200-300	0.1
Total	26.4		15.6

Source: JLL Research and REIS

Rental escalation up to **30%** possible, post upgradation

With the capital expenditure required for upgradation varying across submarkets, the potential increase in rentals depend on factors such as planned infrastructure developments and proximity to residential catchment areas that influence the attractiveness of the submarket to occupiers. Delhi CBD, SBD, Prime NH8 in Gurugram and Noida City offer the maximum scope for rental escalation.

Prime NH8 in Gurugram, Delhi CBD and SBD offer maximum rental escalation



Source: JLL Research and REIS

Rental escalation reflects the minimum and maximum achievable growth in rents after upgradation across the spectrum of office buildings in a given submarket. It is thus, possible that the lower and the higher ends of the range may confine to select buildings in that submarket.

*Includes Cybercity and buildings on NH8 that are closer to Delhi. **Closer to Manesar

The investment potential is lower in the case of CBD and SBD in Delhi as the office stock is limited in these submarkets. However, considering the demand and their prime locations, these buildings need to be upgraded to cater to the needs of corporate occupiers. As Aerocity is almost fully occupied with very low vacancy levels, there is dearth of quality office space in SBD Delhi. Considering these factors, it is quite important that office projects in Delhi's CBD and SBD be redeveloped.

In terms of investment potential, Prime NH8 in Gurugram, including DLF Cyber City and buildings along the NH8, offer the highest potential for upgrading office buildings.

CBD: The office buildings in Connaught Place can no longer cater to the needs of new age occupiers as most of the buildings were constructed more than a decade ago. This business district, however, is the one of the most expensive office markets in India. It has lower vacancy levels because of its prime location and limited availability of quality supply. The CBD enjoys excellent connectivity to all parts of Delhi NCR via road and the Delhi Metro. The net absorption in this market has been less than suburban markets due to supply side factors. New, investment-grade buildings on a leased based model with good specifications and management will attract occupiers from all segments. Considering the supply constraint, there is a need for upgradation in existing office buildings here to put it back on the radar of major occupiers. The benefits that can be achieved by upgradation include increased rentals, reduction in operational costs with improved energy efficiency and retention of clients.

Delhi SBD: This includes the prime areas of Saket, Nehru Place, Jasola and Aerocity. While Aerocity has quality office buildings integrated with support retail and hospitality, projects in other locations need to be upgraded. With a rental escalation potential of 20-25%, the upgradation will benefit both developers and occupiers.

Prime NH 8, Gurugram:

This includes prime locations adjacent to the NH8 that are closest to Delhi and DLF Cyber City. The latter is a large integrated business district adjacent to the Delhi–Gurugram border that houses offices of more than 300 companies. Excellent building infrastructure, proximity to NH8 and F&B options such as Cyberhub are the main advantages of this submarket. There are multiple modes of transportation with the Rapid Metro, electric autos and a toll-free expressway, etc. Some of the buildings here are more than a decade old and has the potential for upgradation.

Udyog Vihar: Udyog Vihar is an industrial area that hosts office space as well as manufacturing units. The demand for office space is strong in this submarket, since it is a prime location close to NH 8 and the Delhi–Gurugram border. With co-working operators opening their centers in Udyog Vihar, the demand for office buildings is increasing here. It has a mix of older as well as modern state-of-the-art office complexes. There is a potential to reinvigorate the older buildings that can be upgraded to meet the needs of today's workforce.

Noida City: Noida, which was historically preferred by IT/ITeS companies for their backend operations, is now emerging as a preferred choice for many corporates as well. It offers prime office space at lower rentals along with larger floor plates. There is an upgradation potential in this submarket, because of older buildings that are not modern in their aesthetics and require upgradation. For instance, the recently completed Delhi One Max Towers in Noida has a fitness center, indoor temperature-controlled swimming pool and an auditorium. Therefore, considering the state-of-the-art office supply, there is a need for old buildings to refurbish themselves for a new age workforce. Upgradation of old buildings will increase the rentals as more occupiers consider Noida. Moreover, the upcoming Jewar Airport will make Noida an accessible office market for occupiers.

Upgradation will aid the revival of CBD and SBD in Delhi

Upgradation will play an important role in reviving the traditional CBD. It will also ensure that areas with limited potential for new developments get more 'relevant supply' to fulfil the requirements of occupiers.

Mumbai

A well-established office market keeps up healthy demand momentum

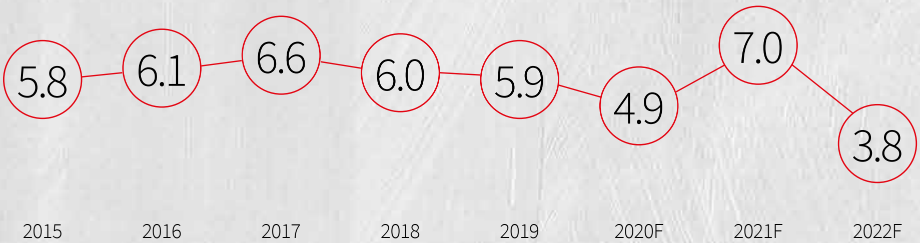
Mumbai, the financial capital of India and the hub of all its economic activity, has been the preferred front office location for most corporate occupiers. One of the most diverse and fastest growing cities in the country, it boasts of strong physical and social infrastructure, skilled manpower and a well-established residential as well as office markets.

The office market has grown steadily over the years and today accounts for more than 20% of the overall Grade A office stock in the top seven cities in India. Moreover, the demand for premium office spaces in Mumbai has maintained a healthy momentum with annual net absorption hovering around the 6 million sq. ft. mark.

Furthermore, every submarket in Mumbai caters to demand from certain types of occupiers. While BKC and Lower Parel attract BFSI and are front office districts, Thane and Navi Mumbai are established back office districts for IT-ITeS establishments. Interestingly, select marquee buildings like Ceejay House in Worli, Express Towers in the CBD and Maker Maxity in the Bandra–Kurla Complex (BKC) have always commanded rentals that are significantly higher than the prevailing market rents. This clearly indicates the markets readiness to pay higher for buildings with modern architecture brimming with cutting-edge technology and facilities.

Steady demand for office space in Mumbai

Net Absorption (mn sq ft)



Source: JLL Research and REIS

Limited upcoming supply in front office business districts

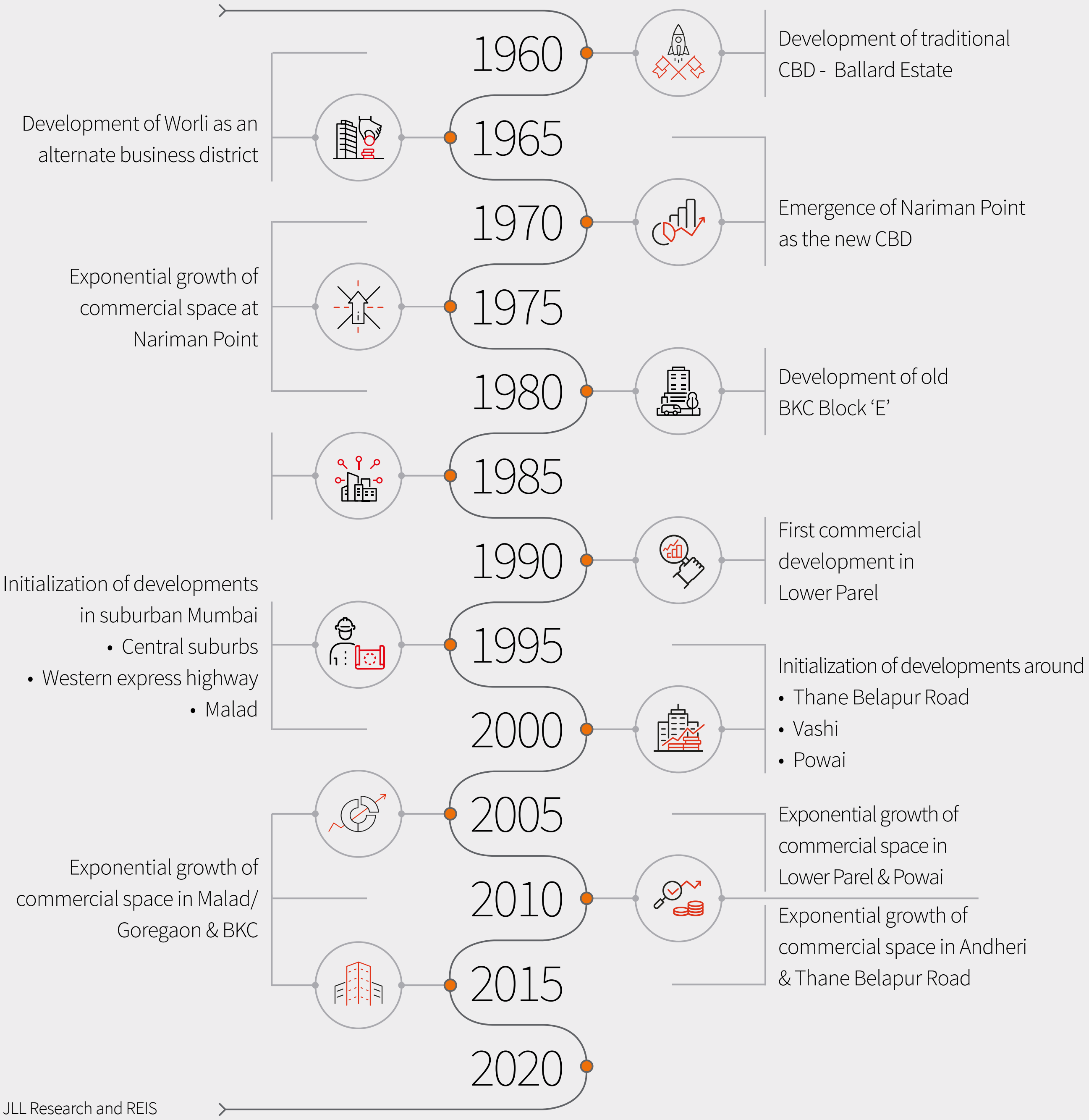
Submarket	Key locations	Key sectors	Characteristics
CBD	Nariman Point, Churchgate, Fort	Legal Consulting, BFSI, Consulates	No upcoming supply, minimal leasing activity with occupiers moving northwards
SBD Central	Worli, Prabhadevi, Lower Parel, Dadar	Media, BFSI, Shipping & Logistics	Restricted supply of commercial space in Grade A buildings with large floor plate. Steady leasing as it is a cost effective alternative to BKC with a relatively good asset quality
BKC	Bandra-Kurla Complex	BFSI, Pharmaceuticals, Co-working	Very limited Grade A quality upcoming supply, buoyant demand with upward moving rental and capital values
BKC Fringe	Kalina, Santacruz	BFSI, Co-working	Limited upcoming supply of Grade A spaces. Low connectivity through rail network and major road congestion during peak hours limits growth potential
SBD North	Andheri, Jogeshwari	IT-ITeS, Shipping & Logistics, Media, Engineering & Manufacturing	Limited Grade A quality upcoming supply. Proximity to international airport and affordable residential catchments attract occupiers
West Suburbs	Malad, Goregaon	IT-ITeS, Shipping & Logistics, Media, Engineering & Manufacturing	Limited availability for occupiers of commercial spaces. Large floor plates, hence limited supply for occupiers requiring smaller plates. Competitive rentals, social infrastructure and residential catchments are pull factors
East Suburbs	Powai, Vikhroli	IT-ITeS, Shipping & Logistics, Media, Engineering & Manufacturing	Limited Grade A quality upcoming commercial supply with fewer options for occupiers requiring smaller floor plates. Proximity to good affordable housing and cost effectiveness attract occupiers
Thane	Wagle Estate, Ghodbunder Road	IT- ITeS, Engineering & Manufacturing	Predominantly IT supply; Limited commercial Grade A stock. Campus style developments make this submarket a preferred IT corridor
Navi Mumbai	Airoli, Vashi	IT- ITeS, Engineering & Manufacturing	Maximum future supply concentrated in this market, which is predominantly IT. Will continue to remain a preferred destination for captive back-offices

Source: JLL Research and REIS

The front office business districts of BKC, SBD Central and CBD have very limited upcoming supply of Grade A commercial spaces. With limited upcoming supply, BKC, the defacto CBD and SBD Central are tilting towards becoming landlord favourable, while the traditional CBD is witnessing very limited leasing activity.

Centres of business activity shifting towards the north

The Mumbai market has constantly evolved over the past decades. As the city grew, the centers of business activity moved towards the North. The traditionally established CBD gradually lost its sheen and BKC, a marshy swamp just 40 years ago, is now the de-facto CBD with gleaming office buildings and impressive residential towers.



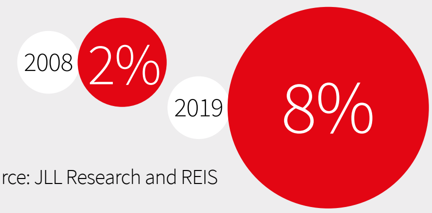
Source: JLL Research and REIS

What prompted this shift?

Businesses required more space to expand and they demanded modern workspaces. On the supply side, new developments in the CBD were restricted by the unavailability of land and the older buildings were in disrepair - a majority of office buildings in Mumbai's CBD are at least four decades old with run down structures arising from poor maintenance. Big banks like Bank of America, Standard Chartered, Deutsche Bank and JP Morgan, with their front offices in Nariman Point, gradually shifted to BKC. The declining appeal of the CBD for occupiers is further reflected in falling rentals and rising vacancies.

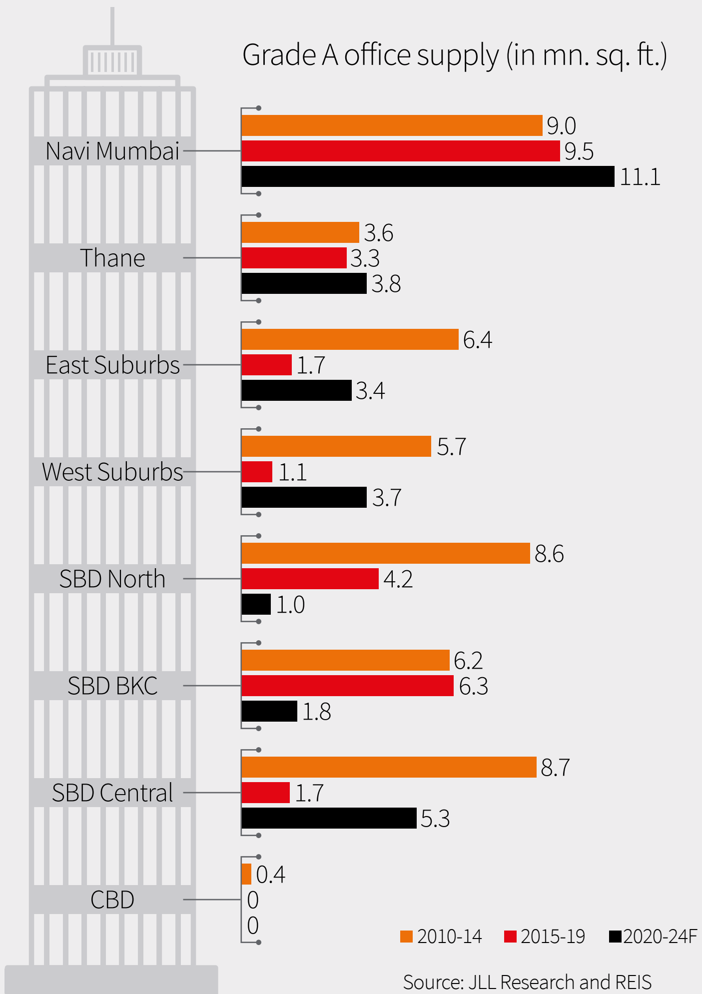
The stock of Grade A office space in the CBD has remained stagnant, while that in the SBDs, suburbs and peripheral markets grew rapidly. With submarkets like BKC, BKC Fringe and SBD North saturating in terms of land availability, the supply of Grade A office spaces in the next five years is mainly concentrated in the peripheral submarkets. Navi Mumbai accounts for 37% of the upcoming supply in the city over the next five years, mostly for IT/ITeS occupiers.

Vacancy in the CBD increased from 2% in 2008 to 8% in 2019

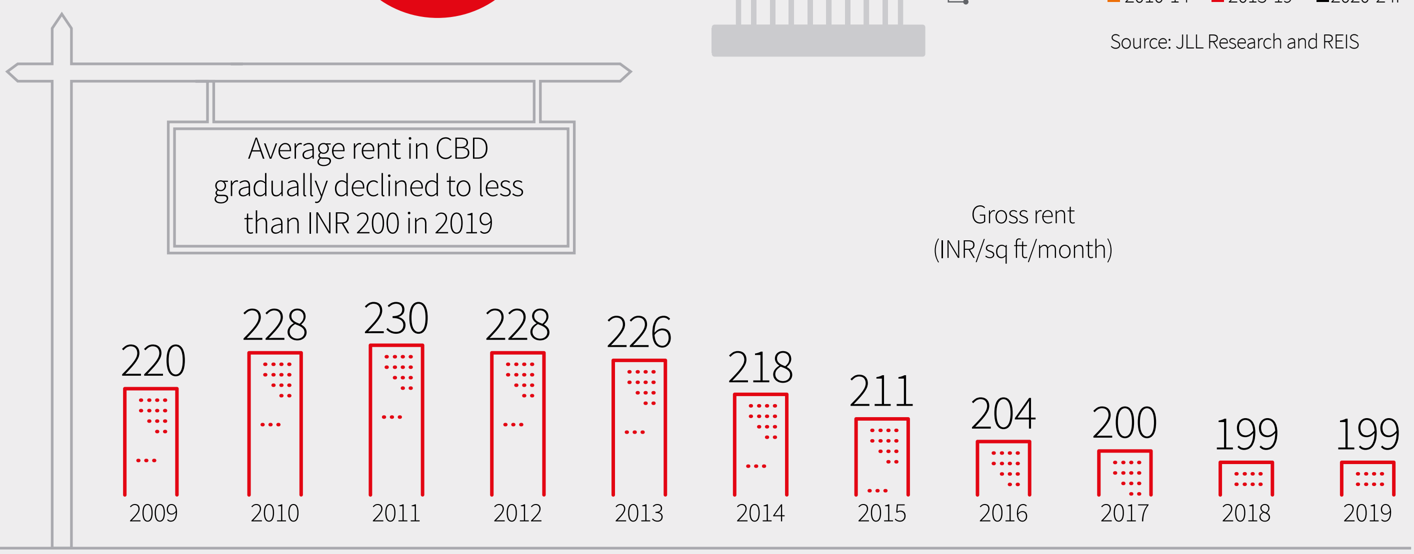


Source: JLL Research and REIS

Navi Mumbai and Thane drive nearly 50% of future supply



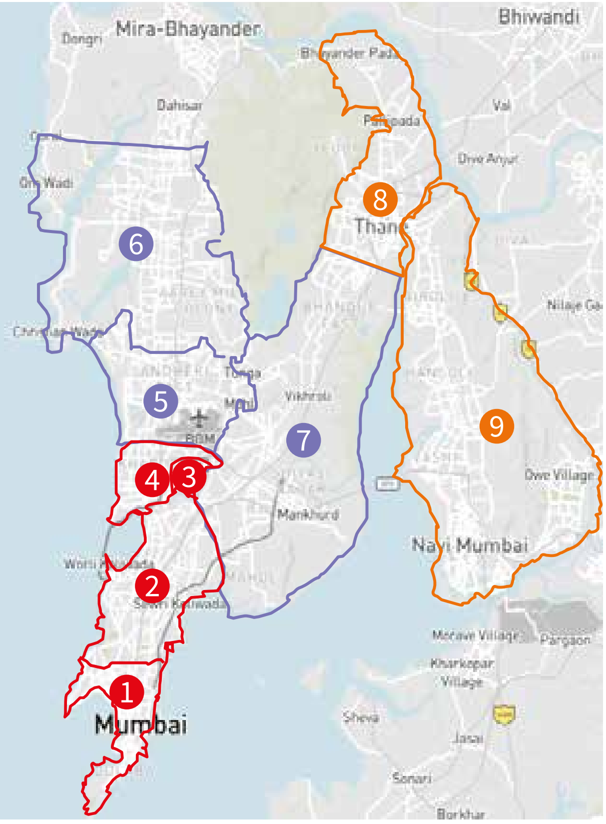
Source: JLL Research and REIS



Source: JLL Research and REIS

Potential upgradation of **44** million sq. ft. Grade A office space

High vacancy rates and falling rentals in the CBD, rapidly evolving preferences of occupiers and limited scope for further development of premium office spaces even in the SBDs provide an indication of how critical it is for building owners to revitalise their buildings. In Mumbai, the quantum of existing Grade A office stock that was completed 10 years ago stands at **43.8 million sq. ft**. In terms of number of buildings, this is 50% of the total stock in Mumbai.



#	Business Districts	Total Grade A Stock (mn sq ft)	Grade A stock qualifying for upgradation (mn sq ft)	Grade A stock qualifying for upgradation (% of total)
1	CBD	6.0	5.4	90%
2	SBD - Central	14.4	3.3	23%
3	BKC	9.9	3.1	31%
4	BKC Fringe	7.7	1.9	25%
5	SBD North	22.3	7.5	34%
6	West Suburbs	16.3	9.2	56%
7	East Suburbs	15.0	6.5	43%
8	Thane	8.2	1.2	15%
9	Navi Mumbai	24.2	5.7	24%

Source: JLL Research and REIS

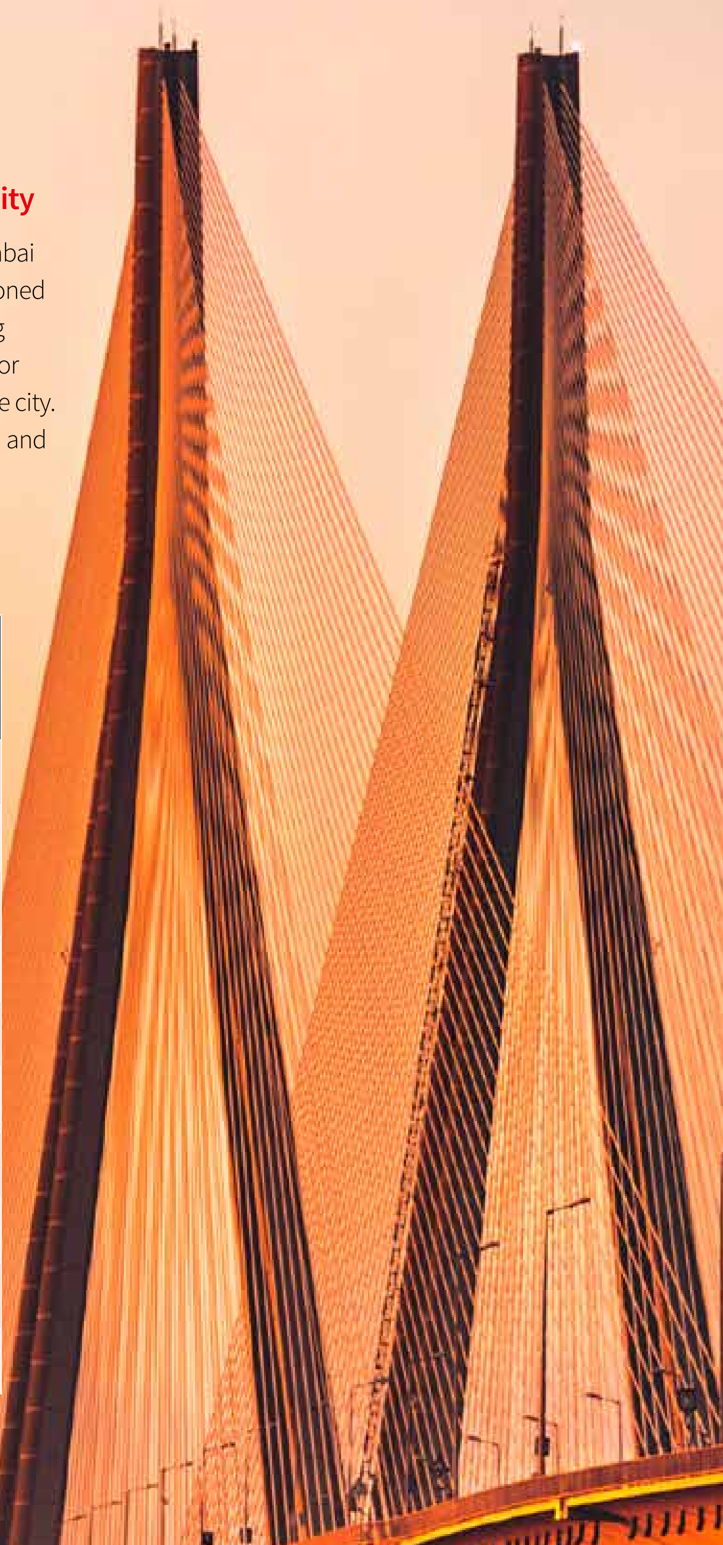
Mumbai presents an INR 26 billion investment opportunity

The resultant investment potential in upgrading Grade A buildings in Mumbai is a whopping **INR 26 billion** with a payback period of 3-5 years. As mentioned in earlier sections, such upgradation involves various components ranging from safety and security to human experience and technology. The need for upgradation and the importance of its various components vary across the city. More importantly, the required capex depends on the building in question and its location.

West suburbs provides an investment opportunity of INR 6 billion in upgradation

Submarket	**Building Area with age >=10 years** (mn sq ft)	**Upgradation Capex Range** (INR psf)	**Investment Opportunity** (INR billion)
BKC	3.1	700-1300	3.3
BKC Fringe	1.9	400-900	1.3
CBD	5.4	700-1300	4.8
East Suburbs	6.5	350-600	2.9
Navi Mumbai	5.7	200-400	1.9
SBD Central	3.3	300-800	2.0
SBD North	7.5	300-600	3.6
Thane	1.2	200-300	0.3
West Suburbs	9.2	300-800	6.0
Total	43.8		26.1

Source: JLL Research and REIS

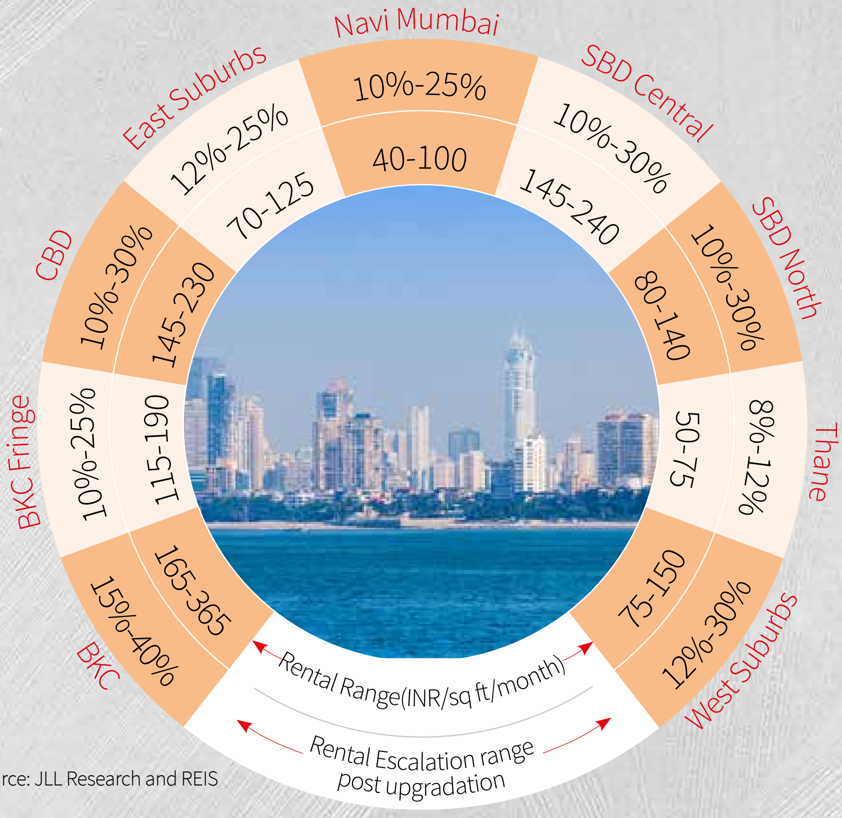


Rental escalation of up to **40%** possible, post upgradation

With the required capex for upgradation varying across submarkets, the potential increase in rentals depend on factors such as planned infrastructure development and proximity to residential neighbourhoods that influence the attractiveness of the submarket to occupiers. BKC, which is a highly sought after office destination, offers the maximum scope for rental escalation while peripheral submarkets like Thane offer very limited upside.

It is clear that most buildings in the CBD need to be upgraded to remain attractive to occupiers. While the West Suburbs provide the maximum investment potential in upgradation, BKC delivers maximum upsides to office asset owners with rental escalation. With a combined investment opportunity of more than **INR 14 billion**, these three submarkets are the most prominent options for investors looking to capitalise on the upsides of upgradation.

BKC offers maximum rental escalation



Source: JLL Research and REIS

Rental escalation reflects the minimum and maximum achievable growth in rents after upgradation across the spectrum of office buildings in a given submarket. It is thus, possible that the lower and the higher ends of the range may confine to select buildings in that submarket.

CBD: The traditional business district of Mumbai is becoming less attractive to occupiers with 90% of the buildings dating back to more than a decade. The submarket has seen its vacancy rise from 2% in 2008 to around 8% in 2019 and rents decrease to below INR 200 levels. Public sector companies and established Indian corporates remain major occupiers here. The upcoming Mumbai Trans Harbour Link will improve connectivity to Navi Mumbai and hence the upcoming international airport, while Metro Line 3 and the Coastal Road will provide seamless North-South connectivity. In conjunction with the government's plan to rejuvenate the business district and these infrastructure developments, investment in upgradation will provide the much needed boost to put the CBD back on the radar of major occupiers. Buildings such as Express Towers bear testimony to the requirement and benefits of upgrading buildings within the CBD. An iconic building in Nariman Point, Express Towers, was upgraded for improving operational efficiency, security and aesthetics. The benefits achieved include increased rentals, reduction in operational costs with improved energy efficiency and retention of clients, with Mckinsey and Warburg Pincus renewing their lease agreements.

Western Suburbs: The submarket provides a good blend of residential, retail and Grade A office developments. Rents in this submarket are less than half of those observed in BKC. The area offers maximum scope for upgradation with more than 9 million sq. ft. of Grade A office space requiring a new lease of life. Out of this 9 million sq. ft., close to 8 million sq. ft. require capex in the range of INR 600-800 per sq. ft. and will result in a rental increase of anywhere between 20-30%, providing a very good investment opportunity. The submarket will continue to attract IT/ITeS occupiers requiring larger floor plates and state-of-the-art amenities, supporting this incremental investment.

BKC: The submarket is the only market in Mumbai where supply is governed by the Mumbai Metropolitan Region Development Authority (MMRDA). With its well-planned development, central location and the presence of high profile occupiers, the demand for premium Grade A office spaces in the submarket is high, whereas the upcoming supply is very limited. Continued infrastructure development like the BKC-EEH flyover and Metro Line 3 will only make the submarket more attractive to high profile occupiers in the coming years.

With more than 3 million sq. ft. of office space requiring upgradation and providing rental escalation up to 40%, the submarket presents an investment opportunity with very good returns. Expenditure exceeding INR 1,300 per sq. ft. could take these buildings to an aspirational level and result in rents increasing even more. A look at the rentals commanded by buildings in the same submarket present us with live examples of the potential upsides of upgradation. For instance, Maker Maxity, a marquee building in BKC commanding the highest rentals in the city is highly rated on all aspects of upgradation. With the upcoming infrastructure projects improving connectivity to the island city, upgradation will play an important role in reviving the traditional CBD and putting it back on the office real estate map. It will also ensure that front office submarkets like BKC, which have limited potential for new developments, have more 'relevant supply' to fulfil the requirements of occupiers.

CONCLUSION

There is potential for upgrading more than 100 million sq. ft. of Grade A office space in just the top three cities of India, which translates into an investment opportunity of **INR 55 billion**. In a rapidly transforming real estate landscape, upgradation showcases buildings at their best and ensures that they evolve at the same pace as human preferences. With workforce requirements changing at a rapid pace, every building that is planned will have to follow an active building lifecycle management and take into account upgradation of the asset to keep it relevant in the market. While age of the building is one of the measures for identifying the need and potential of upgradation, increasingly we will witness a trend of newer buildings also undergoing or planning for upgradation to keep up with the evolving trends in the market.

Building lifecycle management could soon become an active professional practice that involves studying latest trends in user preferences and technology and suggesting an optimal time for projects to upgrade. Asset owners will reap significant benefits from upgradation and with timely utilisation of this ser vice, they can expect maximising of yields and keeping their commercial assets from becoming redundant.

When done well, upgradation showcases buildings at their best. These buildings not only bring greater value to their owners, they make economic and environmental sense. This paper is our continued outlook on the changing world of buildings and its impact on the workplace.

In an age when change is the only constant, planning for tomorrow's world of work makes imminent sense, encouraging office space developers/ investors to build a system of regular upgradation at the design stage itself.

About JLL

JLL (NYSE: JLL) is a leading professional services firm that specialises in real estate and investment management. Our vision is to reimagine the world of real estate, creating rewarding opportunities and amazing spaces where people can achieve their ambitions. In doing so, we will build a better tomorrow for our clients, our people and our communities. JLL is a Fortune 500 company with annual revenue of $16.3 billion, operations in over 80 countries and a global workforce of over 90,000 as of December 31, 2018. JLL is the brand name, and a registered trademark, of Jones Lang LaSalle Incorporated. For further information, visit jll.com

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The Firm provides investors, developers, local corporates and multinational companies with a comprehensive range of services. This includes leasing, capital markets, research & advisory, transaction management, project development, facility management and property & asset management. These services cover various asset classes such as commercial, residential, industrial, retail, warehouse and logistics, hospitality, healthcare, senior living, data centre and education.

JLL India won the Five Star Award for 'Best Property Consultancy at the International Property Awards Asia Pacific 2018 -19. The Firm was also recognised amongst the 'Top 100 Best Places to Work in India' three years in a row (2017, 2018 and 2019) in the annual survey conducted by Great Place to Work® and The Economic Times. It has also been acknowledged as 'Property Consultant of the Decade' at the 10th CNBC-Awaaz Real Estate Awards 2015. For further information, please visit jll.co.in

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