



“MAKING THE NEW SKYLINE” - High Rise Buildings in India

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ABSTRACT

The tall building is the dominant symbol of the cities and the man-made wonders that transcend gravity through the clouds. Improving the image of the city with a high-quality building it is an art that helps the city to achieve excellence in the global economy. Indian cities are experiencing significant population growth due to migration, leading to urban sprawl, demand for housing, rising land costs. Housing has improved in an economy-producing industry. Given this demand, in time high-rise residential structures have become a local solution in the big cities, which remain unknown in the tier II cities of India. The tallest buildings are also called "vertical cities", which have the potential to eliminate congestion in urban areas that continue to grow horizontally, preventing them from reaching their final breakdown, a tall structure as a type of building is a possible solution by overcoming a specific area by combining and overcrowding. This paper made an effort to understand the development of vertical cities in current and future India, material that provided stability and strength in the buildings and its economic factors.

INTRODUCTION

Tall buildings around the world are becoming more and more popular day by day. With the advent of modern construction technology and computers, the primary goal being to be building safer buildings by looking at everything economics of the project. Upper buildings, apartment tower, office tower, apartment block, are tall building or structure used as a residence and or office use. In some places they can be called "Multi Dwelling Unit "or" vertical Cities ". Reduce urban sprawl at a lower level, and increase urban sprawl, inhabited by high-value families in small areas space. Eventually, the world changed dramatically a hundred years. One of them is the huge increase in the number of urban people compared to people in rural areas. An increasing number of urban people have closely related to increasing the number of megacities in the world. Currently the Indian character of urban living has been rapid change. Acceptance this population density is a high growth rate properties. There is another emerging trend of neo-middle-class growth in Indian cities which wishes to live a better life. They are also one of the major stakeholders in the housing sector in India. In this case, fulfilling the demands of the people is a great solution both in terms of beauty, and in technology. The latest technology and building materials are used and many are still available. The structure and architecture are two closely related activities to design a high-quality building. The tallest building was built of solid bricks until the end of the last century.

HIGH RISE BUILDINGS IN INDIA

Shikharas, Stambhs, Gopurams, Darwazas are historic architectural monuments that have dotted the skyline of various Indian cities for centuries. The use of these robust and beautiful design elements, ascending in size and grandeur with detail, has also become very important in our culture. Tall buildings can often be considered a milestone in the history of the tallest building, showing how India was already advancing in time with its invention of advanced engineering and amazing architectural ideas than its western counterparts. In the era of globalization, especially in the wake of the growing housing demand during the 90's, architects turned to the west to seek inspiration. Indian cities are experiencing rapid growth in the rise of the buildings, however, such a growth of higher elevation buildings are not visible in all cities in country. Very few cities deal with it so quickly the development of a state-of-the-art building throughout India.

One of the main reasons for the rapid growth of high- property growth is the highest growth rate, in migration and housing need in Indian cities, a building larger than 75ft (23 m), usually 7 to 10 stories, considered as high rise. And the building is considered as high riser if it extends beyond maximum access available to firefighters. According to building code of India, a tall one-story building with four floors or above or a high building 15 meters or more in the height. Most of the tallest buildings in India exist the commercial capital of Mumbai. They are over 2500 high buildings have already been built. What's more thousands of mid risers are already in the city. Mumbai is facing major construction developments, and thousands tall buildings and high riser buildings are below construction. Delhi and surrounding areas are there witnessing great construction projects by 1500 already build high risers.

TRENDS IN HIGH RISE BUILDINGS

The skyline in Indian cities has changed dramatically in the last 20 years, owing to the development of construction in metro cities. Formerly inferior neighbourhoods are now crowded with high-rise apartment buildings, occupied by the richest people in the country. Some of the tallest buildings in India that is functional and durable.

World One

It is a 280-meter skyscraper, built by Lodha Group, the tallest building in Mumbai and India, World One, located on an area of 7.1 hectares. Currently, it is the tallest building completed in India.

The 42

The 42 is the tallest tower in eastern India. Located in Kolkata, 42 is a residential area, located in Chowringhee, a downtown business district. Construction of a 65-story building was completed in 2019, after many years of delays.

Hyderabad police headquarters

Telangana has created a positive impression promoted by Singapore to build state-of-the-art government buildings. The Banjara hills police headquarters building creates a new view of the city. Spread over 5.5 lakh square feet.

MATERIALS USED IN THE CONSTRUCTION OF HIGH RISE BUILDINGS

Concrete is an incredibly strong man-made mixture of aggregate (sand and gravel), cement and water it has been used in construction since Roman times. It's very hard and in its normal state can withstand high loads of pressure but it has a great weakness – it cannot withstand tension loads. There are many factors that will affect how concrete will behave under fire conditions. Solid concrete is one of the outstanding solutions that minimizes the cross-sectional area of a building such as columns and thus, increases the floor area for use on purpose.

Steel is widely used in all forms of construction as well is present in almost all types of reinforced concrete. Steel is a metal alloy which consist iron as major component. Carbon is added and this acts as a stabilizer. Because of it limits on fire, when used in the context of a building, metal are usually given extra fire protection, in the form of a robe of sacrifice or hindrance. The metalworker was buried inside the reinforced concrete is highly protected in a fire with a covering of concrete, but for a long time exposure to high temperatures can affect integrity either tensions within concrete, leading to failure.

Fly Ash is a great resource for a variety of uses areas such as cement construction, cement and concrete, wall construction, floor filling etc. The most widely used fly ash areas are: -

- 1) Manufacturing of Portland Pozzolana Cement & Performance enhancement on Ordinary Portland Cement (OPC).
- 2) Replacement of OPC component in cement concrete.
- 3) High volume of fly ash concrete.
- 4) Roller Compact Concrete used for dam and walkway construction. Use of ash on the side of the road
- 5) Manufacture of ashes for bricks and other construction products.
- 6) Road construction
- 7) Embankments, structural filling, low lying area development.
- 8) As a supplement to the soil in agriculture and the wasteland development.

EFFECT ON ECONOMY AND ENVIRONMENT

Economic Considerations Undoubtedly, there are other natural barriers to tall buildings from an economic point of view. The construction of these buildings requires additional funding due to their need for complex foundations, building systems for high air load, and high-tech equipment, gas, elevators, and fire-resistant systems. In addition, a large backbone is needed to accommodate elevators and building resource systems. In tall buildings another important requirement for waterproofing as it has a waterproofing problem, the basement is heavier and needs to be dry and firm. Also, the upper floors are exposed to strong winds - a feature of rain, where the rain is not only straight but also on the sides due to strong winds. This requires that the walls and roof to be water resistance. Because of this the solution adds durability, saves time and is cost effective. Tall buildings produce adverse effects on the microclimate, due to the gusts of wind and the turmoil surrounding them at its base which causes pedestrian disturbances. Also, tall buildings create large shadows, affecting nearby buildings by blocking sunlight. Towers harm the environment when it fails to integrate energy-efficient design solutions into its heating, cooling, and ventilation systems. However, high rise buildings may have potential environmental benefits, like enough access to sunlight and air to accommodate solar panels, photovoltaic cells, and wind turbines.

CONCLUSION

This paper has made an effort to analyse high altitude buildings in Indian cities. It appears in the analysis that the structure is of a high standard in India they are growing rapidly especially in the three species of cities include major city, major satellite cities and cities are located within a large region. Real estate housing developers are not limited to their projects only in state capitals than they are the presence can be seen in all the different cities in India. Average height of high rise urban buildings range from 50 meters to about 200 meters. Moreover, the quality is high buildings in all Indian cities are productive special accommodation than commercial or a place for mixed use.

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