



Research Paper

Tamil Nadu Commerce HUB – A Twin tower proposal in Chennai

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ABSTRACT: High-rise buildings have the ability to reduce the urban sprawl. Many metropolitan cities like in India are experiencing immense demographic expansion due to an rise in population and migration. For a development that provides a rich and dynamic social, professional, and personal experience for entrepreneurs and employees who can work within a productive environment. This typology of commercial development is to enhance the social and economic benefits greatly. This paper aims to support the analysis for designing a Twin tower with iconic, modern commercial office space development in Anna Salai, Chennai to accommodate public and private sector entities. The paper deals with the high rise study analysis and site proposal for metropolitan area like Chennai. The relevant literature data available in this area is critically studied and discussed.

KEYWORDS: High rise Twin tower, Tamil Nadu Commercial Hub Proposal, Anna Salai, Chennai

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I. INTRODUCTION

Tall buildings are becoming popular in 21st century modern days. With the use of current construction technology, the ultimate aim is to construct safer buildings, keeping the project's overall economy into consideration. A high-rise building built usually for commercial use often reflects the economic power of the administrative body and a sign of its feature.

A wide range of studies and analyses is performed before starting on a project. These studies have been done by carefully investigating the architectural, planning, marketing, and financial aspects. The State's progression is influenced through planning, economic and urban progress; It is the most significant reason that encourages technological advancement by utilizing the latest systems and materials.

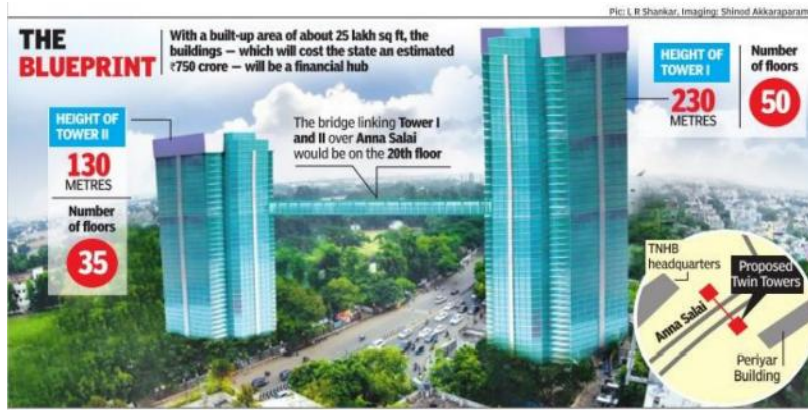
II. HIGH-RISE BUILDINGS HISTORY AND THEIR ROLE IN ARCHITECTURE

High-rise buildings started in old Rome as four-story woody residence buildings. In the 19th century, in North America, the Monadnock Building was built in Chicago in 1891 out of sixteen stories using the load-bearing wall constructing method. As construction methods advanced, buildings ongoing to increase in high, reaching 60 stories in 1913 with the construction of the Woolworth Building in New York. High-rise buildings have always remained attractive for architects and constructors throughout the time. Because of their extraordinary presence in the built environment, high-rise buildings have a unique importance and striking feature of their height, clearness, and domination over other elements of the landscape in urban areas where the increased land prices and significant population densities created a demand for buildings that rose vertically rather than spread horizontally, thus occupying the less precious land area.

A Skyscraper always is a significant and iconic architectural structure as a pat of world's largest cities. The appearance of a skyscraper in the city's skyline enhances its status, introduces dynamics into the shape of the town, modernizes the existing environment. Apart from the dominating appearance, skyscrapers have an important role in the urban community and its economy. In a highly populated developing country like India, the importance of constructing high-rise buildings cannot be undermined for their contribution to the nation's economy and image.

2.1 NATURE AND AIM OF THE PROPOSAL:

Newspaper cutting advertising the proposal



As per the government proposal, the main idea is to construct iconic Twin towers that will serve as financial hub in Chennai for Tamil Nadu Housing Board (TNHB) to accommodate public and private sector entities. The 'Tamil Nadu Commerce Hub' for TNHB in Anna Salai, Chennai, a high-density urban region that will change the image ability of Anna Salai. A proposal for two towers of height 230m (50 floors) and 130m (30 floors) connected by a Sky Bridge at the 20th Floor is planned to run across Anna Salai Road. It also aims to unlock the value potential of Anna Salai to build an advantage to the economy of Tamil Nadu. To develop World-class Office space and attract marquee investments to the region. Generate Large scale employment and add value to the state. To create a benchmark in Tamil Nadu State and improve visibility/investment attractiveness. To encourage shared office space which is witnessed as the recent trend accompanied by various support services. Co-working spaces are ideal for corporates testing Indian waters due to their cost-effective and flexible leasing term.

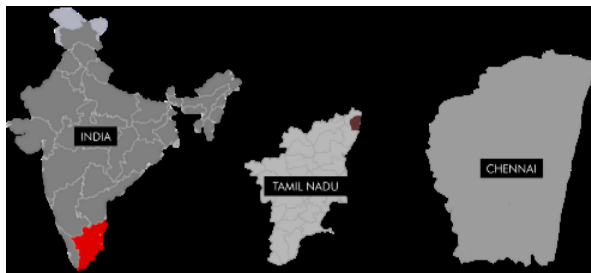
III. RESPONSIBILITY IN DESIGN

Pollution and waste have become significant issues. Sustainability is the most crucial objective and lays the foundation for the architects and planners throughout the high-rise building design and construction process. In addition, it is not all about seizing business opportunities. The project developers need to understand their responsibilities towards the environment and duty towards the community. Architects need to make sure that all the contemporary national and international standards and codes are followed. To develop the community by saving energy sources, cutting down the material cost, and recycling the sources contributing to a greener environment.

India is the land of marvels, and we have to help our country progress without disturbing its natural environment. We need to make sure that we are not turning soil into concrete, brick, and metals. The primary focus has got to be seeking development without exploiting what nature has blessed us with. Some of the sustainable features that must be included in a design are Energy Efficiency, Natural Ventilation Systems, Sky Gardens, Green Roofs, High-Performance Façade and Sustainable Material Preferences

IV. SITE STUDY – ANNA SALAI, CHENNAI

Anna Salai which is a 12 km stretch. The corridor has evolved into a mixed-use activity hub, however has similar/comparable characteristics of development activity. Therefore, the stretch starting from Thousand Lights to Saidapet has been profiled as a part of this module with a view to identify key drivers in the market.



5.1 Zone Profiling of the Site:

The subject properties are located along Anna Salai in the Nandanam micro market. Being located on Anna Salai, the micro market enjoys excellent connectivity to various parts of city.



The Northern site currently houses Periyar EVR building, HIG apartments, TNHB staff quarters. The Southern site currently houses the TNHB head office.

5.3 Mapping of key developments:

The development activities along the corridor has been divided into commercial office spaces, retail mall developments, hospitality developments and independent office building by corporates/ business houses.

5.4 Site Assessment

Total Site Area - (9.65 acres)

Northern site : 8.15 acres

Southern site: 1.50 acre

Subject Site - North

Particulars	Scenario 1	Scenario 2	Scenario 3
Ground coverage	30%	30% - 40%	40% - 50%
Total land area	8.15	8.15	8.15
Proposed road 1 acres)	1.66	1.66	1.66
Proposed road 2 acres)	0.2	0.2	0.2
Balance net extent (acres)	6.29	6.29	6.29
FSI applicable	2.5	2.25	2
(FSI X Balance net extent)	6,84,981	6,16,483	5,47,985

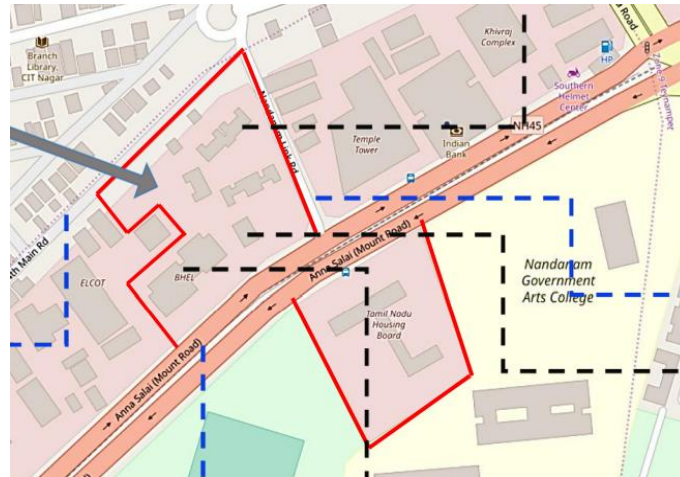
Subject Site – South

Particulars	Scenario 1	Scenario 2	Scenario 3
Ground coverage	30%	30 – 40%	40 – 50%
Total land area	1.5	1.5	1.5
FSI applicable	2.5	2.25	2
Built up area	1,63,350	1,47,015	1,30,680
Premium FSI (40% of existing FSI)		2.8 – 3.5	
Total Built up area with premium FSI		0.9 mn – 1.1 mn sft	

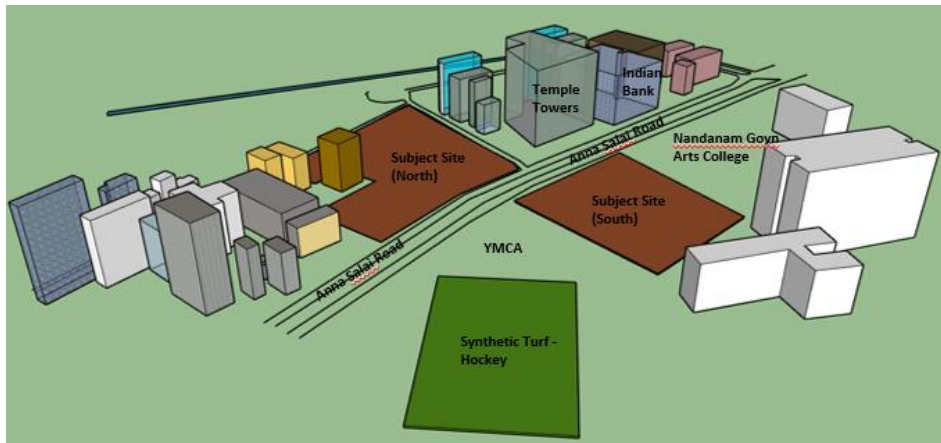
5.5 Contiguity & Shape

The Northern site is irregular in shape and cut across by multiple roads along the sides

The Southern side is partially regular in shape.



Property Map – 3D model

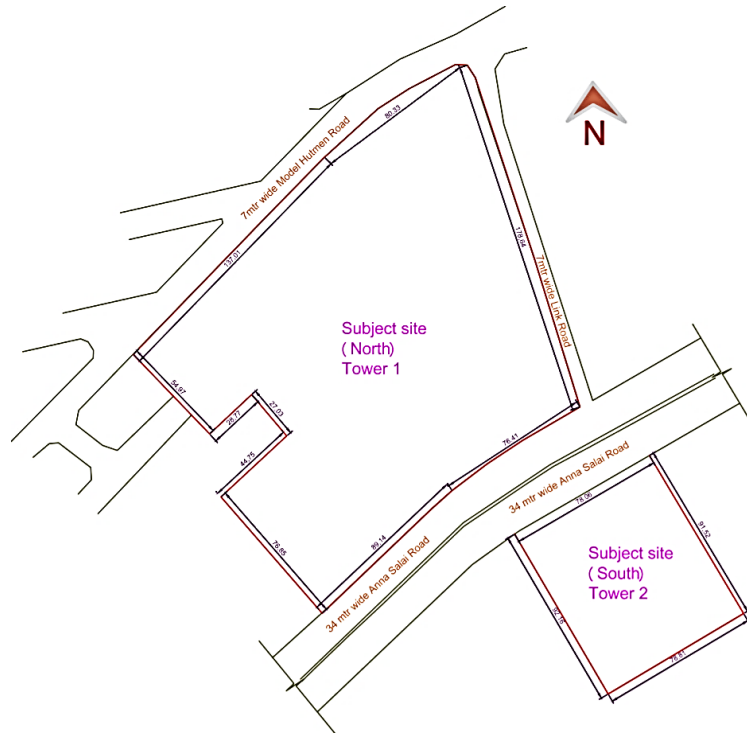


5.6 Height Restrictions

The height of the commercial highrise development can exceed 60 meters when the abutting road is wider than 30.5 meters. And, both sites area part of the J16 Grid of the Color coded zoning map of Chennai, AA18 – NOC required from AAI if the development height exceeds 55 meters; maximum permissible height is approx. 123 meters.

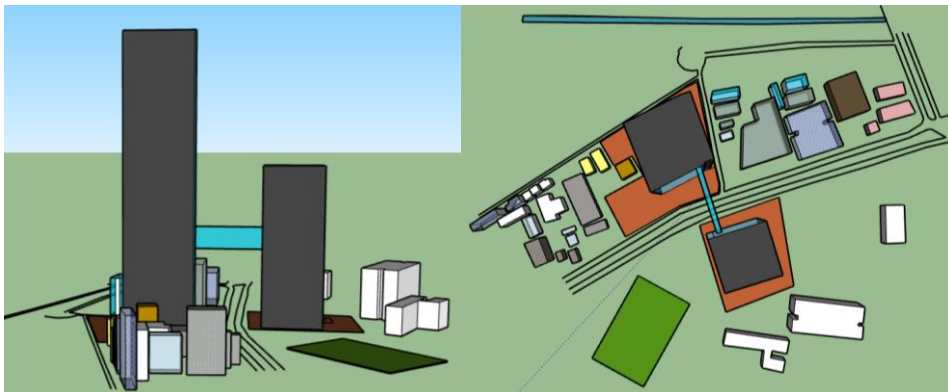
Frontage

North side land site has a frontage of approx. 400 ft
South side land site has a frontage of approx. 200 ft



VI. OPTION 1:

An proposed Integrated Economic hub with three key activity centres viz. Primary revenue generator – Commerce Hub (An Iconic office space tower). Secondary revenue generator and Image enhancer – Retail, Hospitality/ Tourism Hub (An Iconic tower connected to the primary component with a sky bridge. The value enhancer or the Knowledge Hub – Start-up city offering incubation and co-working spaces that could be modelled in the lines of T Hub in Hyderabad.



6.1 Sky Bridge:

A sky bridge would be used as unique design element to connect both the towers which are of different heights at a concourse level retail with a massive 'Food Court space'.

OPTION-2 :

The same usage would be inherited for the subject site, an Iconic, large commercial office space towers on Site 1 – which would be segregated as corporate office space with smaller floor plates zoned for Northern Site and regular office space tower that can be leased to IT/ non IT companies.

VII. CONCLUSION

The vision for the iconic development is to create a landmark for the Chennai City and reinstate Anna Salai as a prime commercial location by means of generating economic and social value to the State of Tamil Nadu and set a benchmark for Office Space and commercial activities in the country. This design will provide

comprehensive profiling of the Anna Salai region and its immediate surroundings to understand the inherent challenges and opportunities. The Central Business District and Off CBD vectors have continued to be a preferred office space market for small to medium term requirements of Non-IT & IT corporates. This is due to the region's locational advantages in infrastructure, visibility, connectivity, and more. Shared office space is a recent trend that is witnessed, providing a complete range of workspaces, often accompanied by various support services.

Shared office spaces offer cost-effective alternatives to traditional office spaces, along with access to a diverse range of amenities. The option of working from multiple offices within the same city helps to ease traffic woes – a critical factor in all top Indian cities – this is a vital demand driver for corporates evaluating and leasing shared office spaces.

REFERENCES

- [1]. <http://www.cmdachennai.gov.in/pdfs/TNCDBR-2019.pdf>
- [2]. CBRE Finalreport – Pre-Feasibility For Tamil Nadu Commerce Hub
- [3]. High Rise Buildings. The challenge of a new field of possibilities for the use of structural concrete H. Corres, J. Romo & E.Romero FHECOR Ingenieros Consultores.
- [4]. Research on the Effect of High-Rise Commercial Building Construction on Land Value of Shanghai in the 1920s Le Sun, College of Architecture and Urban Planning, Tongji Universit
- [5]. A Study of Challenges in Designing and Construction of Skyscrapers by Ar.V.Vijayasree, Professor, School of Environment Architecture and Design SRM Institute of Science and Technology, Ramapuram campus, Chennai.
- [6]. High-rise Building Optimization - A Design Studio Curriculum 2015 Agata Pasternak
- [7]. High- Rise Buildings – Needs & Impacts - Eldemery Ibrahim.
- [8]. Technological Advances and Trends in Modern High-Rise Buildings by Jerzy Szolomick and Hanna Golasz-Szolomicka.
- [9]. Study of High Rise Residential Buildings in Indian Cities (A Case Study –Pune City) Rupali Kavilkar and Shweta Patil
- [10]. Tall Buildings and Urban Habitat of the 21st Century: A Global Perspective by Mir M. Ali and Kheir Al-Kodmany
- [11]. Sustainable development of high-rise building - Pan Feng and Wu Xingkuan.
- [12]. Site selection and physical proportions in tall buildings - Neda Rafizadeh, Institution and department, University of Tehran, School of Architecture
- [13]. Establishment and locating criteria of tall buildings - Salman Hasanvand, Department of Art and Architecture, Science and Research branch, Islamic Azad University, Tehran, Iran. Mohammad aminkhojastehghamari, Member of Young Researchers and Elite club, Tabriz Branch, Islamic Azad University, Tabriz, Iran. Meysam Rezaei - phd student,department of urban planning,faculty of geography and planning,Isfahan university,iran
- [14]. Mixed-use development in a high-rise context - Elena M. Generalova1,*, Viktor P. Generalov1, Anna A. Kuznetsova1, and Oksana N.Bobkova11Samara State Technical University, Institute of Architecture and Civil Engineering, 443001, Samara, Molodogvardeyskaya St, 194, Russia.
- [15]. <https://www.slideshare.net/senshots/masters-thesis-report-skyscraper-high-rise-mixed-use-development>
- [16]. Effective selection of form work for high rise buildings a.sharmila1, a.aaron christober2, 1PG Student, 2Assistant Professor, Construction Engineering And Management,, The Kavery Engineering College, Mecheri, Tamilnadu, India
- [17]. Skybridges: A History and a View to the Near Future, Antony Wood, Chief Executive Officer, Council on Tall Buildings and Urban Habitat.
- [18]. <https://www.dezeen.com/tag/linked-towers/>