



“Retrofitting of MEPs and a strategy for making sustainable Hyderabad city in Telangana state”.

¹Mr.Mohammed Abdul Majeed, ²Dr. Veeresh Babu A,

¹Research Scholar, National institute of Technology, Warangal, Mechanical Engineering Department. E-Mail: mamajeed79@gmail.com

²Associate Professor, National institute of Technology, Warangal, Mechanical Engineering Department.

Abstract: As the year’s ephemeral, the footprints of heritage transforming to the next generations with monuments in several cities or countries on this planet “Earth”. Hyderabad, whose governance with mixed communities and culture was urbanized by the Nizams period. They constructed many like buildings, dams, bridges, lakes, etc. are under stress with natural disasters like flash floods, high temperatures, pollutions, Gales etc. This density is increasing with seismic stress manifested by “Climate Change”, which is mounting revenue loss, taxes, wastages, etc. Several departments’ Infrastructure is damaging with impediments and demanding retrofitting technologies to shield public and private properties. Also, urban governance was spending millions of rupees for tailing the elucidations to safeguard the heritages. But, they forgot adopting and educating the ecofriendly green building technology for retrofitting the history, culture and sustainability of citizens. This paper elevates the available technologies, profits and uses of adopting retrofitting technologies (jacketing) in the governing limits for controlling pollution loadings in water bodies.

Key words: Climate Change, SDGs, Retrofitting, Heritage, Sustainability.

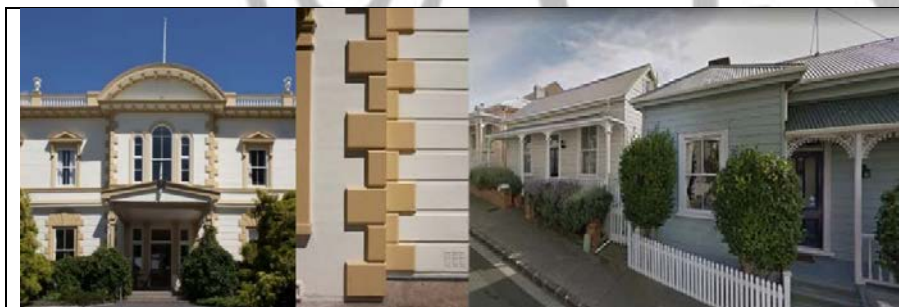
Introduction: Cumulative urban population growth in India is devastating the ecology and worsening the community facilities, energy and water consumption, air quality etc. historical cities like Mumbai, kolkatta, Chennai, Delhi, Bangalore, Hyderabad are growing fast from past few decades. Hyderabad was urbanized in kings Quṭb Shahi (16th century) period. Hyderabad built a global history under their reigning. After relieving from kings rule, city attracted migrators from all corners. It is estimated to be 30 to 35% of migrants coming from different parts of India, made this city as their home due to low cost of living, work prosperous of Industrial, IT etc. (Please see reference 01). The city expanded from 170 sq. Kms in 1990 to 650 sq.km in 2020 and population 4 million to 10 million. The parallel and vertical (heights of building) development of city is increasing seismic pressure day by day. This development brought magnificent changes in livelihood, governance and development at side, another side the environmental degradation uprooting the history (monuments, properties, nature) and sentiments (private properties) with catastrophes. Several tourist attracting historical monuments like charminar, golkinda fort; Chowmahalla Palace, Mecca Masjid, Falaknuma Palace, British Residency etc are getting cracks and plumbing problems (Fig No.01) (Please see reference 02). The Archaeological Survey of India (ASI), self-owned and urban governance is facing too many challenges to carry history for offshore.



Fig No: 01 – Charminar cracks
<https://www.livemint.com/>

Several urban governance, communities and nations are designing their “CODAL” for arresting wearer actions, dwelling isolations, seismic forces etc. under different climates. Adapting green building technologies with suitable modifications will give sustainable livelihood and infrastructure.

Adapting wood technologies in retrofitting:



(a)

(b)

(a) Old Government House in Auckland, built with local timber fashioned to look like stone (b) Typical timber houses in Renall St. Historic Area, Auckland.



(a)	(b)
(a) Christchurch Cathedral after the earthquakes in 2011 ; (b) URM building on Barbados St. damaged after the earthquake	

Restoring the history of monuments functions and heritage powers

became a tough job in all urban governance. Several cities are practicing retrofitting activities with modifications. Few cities like Auckland (cold and damp regions), (see fig no: 02), are retrofitting with wood by melding like stone structure. It will be sophisticated, tunes internal climate, develops business (paints, timber etc.) in several ways. Nations, which are climate vulnerable with gales, tornados, flash floods, storms, earthquakes etc. will see mixed (loss and profits) results equally. Also, it will be a biggest challenge to designers to estimate “warrants of fitness” for existing dwellings. In such cases, adopting (seismic retrofitting) glutting metal, concrete and fiber frame designs and ecofriendly technologies (Weightless materials) will reduce seismic pressure.

Green Building Technologies: considering the present urban seismic pressure with masonry (stone, block, brick), Hyderabad should adopt green building technologies for sustainable communities. These dwellings not only resource efficient (design, construction, operation, maintenance, renovation and demolition), but also adapt ecofriendly responsibilities. Considering the urban civilians passion, Indian Green Building Council (IGBC) is providing O&M Rating System for Green Retrofitting Buildings and constructions. IGBC, which was formed by Confederation of Indian Industry (CII) in 2001 to promote green technologies, is certifying design team, architects, project clients; Engineers etc. (Please see reference 03). Most of the studies on this technology reported the need for and significance of improving the sustainability of existing buildings to stabilize and reduce their greenhouse gas emissions, waste generations, efficiency of water and energy, and minimize their negative environmental impacts (Please see reference 04). Also, reported resilience in seismic evolution (earthquake intensity, structural conditions, geographical conditions etc.), frequency of vibrations, ground motion, strength of building materials etc.

Most of the Indian cities are water stressed and in cities like Hyderabad, the water table has reduced drastically over the last decade. Green buildings System encourage use of water in a self-sustainable manner through reducing, recycling and reusing strategies. By adopting this system, green existing buildings can save potable water to an extent of 15–30 (Please see reference 05). It also relaxes from extreme difficulties of handling, segregation and transporting tons waste from existing or demolishing buildings. The occupants can continuously enjoy the ot Energy efficiency, Health and Well-being with these technologies (Please see reference 06). Apart from this Thermal retro-fitment technology can adapt in few suitable dwellings for suitability. .

Conclusions: “People should have freedom in their pilgrimages and tours. They should come and visit historical monuments and sites - let's say the sites around Iran - where they can easily engage in wide- scale contacts with others” by Mahmoud Ahmadinejad, Farmer President of Iran (2005-2013). This quote exposes the importance of safeguarding community and ethos history to next generations, where people get lot of economical (employment, income, sustainability in livelihood) benefits with tourism and cultural practices. Hyderabad with Centuries of history is attracting millions of tourists with it's existing architect. To carry this to offshore urban community partners (builders, citizens, government, architects, engineers etc.) should adopt available and adaptable technologies to safeguard the “urban sustainable livelihood”, else the continuous degradation will disconnect it's trade mark (sovereign) from any corner on this planet.

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