

## Green Building Adaptability will sink the Demands of Natural Resources and Ease in Urban Governance

<sup>a</sup>Mr.Mohammed Abdul Majeed, <sup>b</sup>Dr. Veeresh Babu A

<sup>a</sup>Research Scholar, National institute of Technology, Warangal, Mechanical Engineering Department.

<sup>b</sup>Associate Professor, National institute of Technology, Warangal, Mechanical Engineering Department.

**Abstract:** The worldwide urban sustainability by residents has led to growing demands for green buildings, Property care and sustainable livelihood. In response, many developed countries on the globe took the leading role in green or sustainable building construction and practices by supportive policies and financial support, but country like India is in its starting stage in adapting market, educating citizens and policies to encourage more green building developments. Indian cities are scattering the crisis of civilians with escalating urban population, which is destroying the attraction of historical cities in the states of India. Hyderabad, which is served last 400 years under different regime, is clutching the citizens with its heat-island actions on cool zone of Deccan plateau. This paper is intentional to expose the necessity of green buildings to defeat high expenditure crisis with deprived natural resources for sustainable developments in India. Also, elaborates required actions to control the stress on natural resources like water, energy (energy efficiency), radiation (Temperatures)... under the limits of urban municipalities with proper mechanical attention. It also delivers the required road map for preparing potential government policies and institutional governance to save money of million pockets.

**Key words:** Rain fall, Urban heat island, ground water, solid waste, sustainability.

### Introduction:

The consequences of urbanization vary across different regions of the globe. The United Nations has estimated that by the end of 2008, half of the world's population would live in urban areas. It is predicted that, by 2050, 64.1% and 85.9% of the developing and developed world respectively, will be an urbanized international (**Tribune, 2008**) (please see ref: 01). Growth of urban culture in India is not a new phenomenon in the history of human civilisation. Even the archaeological sites of Harappa and Mohenjo-Daro provide evidence of urbanization. Today, every city with a history has been either a capital town or a commercial and trading center or place of educational excellence. Hyderabad, which is served four centuries for different regimes with above all merits, is growing continuously as capital city of new formed state Telangana.

Hyderabad City is growing because of three main factors like increase natural urban births, adding rural areas as urban areas (merging of outer villages) and rural-to-urban migration for jobs, educational attainment and for the purpose of business has many effects on human life. Due to the urban mess Musi river which is passing from the Hyderabad city is being polluted most water bodies by the garbage and human waste (sewage discharges) which people directly throw in these river tributaries (**Please see ref. 02**). This population growth creates unprecedented challenges, among which provision for fresh surface and ground water, pollution and radiation with vehicles exhausts at traffic jams, health problems with

disasters and poor solid waste and sanitation management practices, have been the most pressing and painfully felt when lacking.

Apart from the above, city expansion has included encroachment, contamination with waste (solid and liquid) discharges and reclamation of hundreds of fresh water lakes, such as tanks, for construction purposes. This is also reducing water absorption (percolating) of ground and storage capacity of reservoirs. Consequently, a major part of Hyderabad city face flash floods and frequent inundation. The devastating floods in Hyderabad city in September 2000, confirmed the magnitude of the damage done to natural urban watersheds due to unplanned and unregulated city growth.

If the situations drive like this, the scarcity of water will pressure the sustainability of urban civilians by destroying the

1. **Mechanical** (Automatic) Practices of planers (Town Planer or construction contractor or sanctioning authority): Today, 38% of Indians are living in urban areas. A country is considered to urbanize when over 50 per cent of its population live in the urban areas. The criteria used to define urban can include population size, space, density and economic organization (**Grannis, 1998**) (please see ref: 03). Indian cities are growing vertical and horizontal way with rural migrations.

Hyderabad city also sheltering with a growth of 2.15 percent, which requires more constructed houses, water reserves, infrastructure, energy and other operational facilities for sustainable development. As shown in **Fig 01 (Please see annexure 01)**, City ground water table is falling year by year because of “less rain fall and changes in distribution of rain”. The gap between rainfall and water flow is increasing gap between cumulative water storage (ground and Surface) and consumption by citizens. To fill this gap urban water supplying boards are establishing infrastructures for water transporting and sewerage treatment by imposing power and water bills.

	2014	2015	2016	2017	2018
Jan	0.0	0.1	1.2	0.0	0.0
Feb	0.60	0.0	0.0	0.0	0.0
Mar	55.5	20.8	0.3	2.5	0.8
Apr	9.0	55.8	6.6	18.5	46.2
May	41.9	4.7	124.3	42.6	43
Jun	58.6	115.4	105.4	163.3	85.7
Jul	137.7	39.4	185.8	138.8	103.9
Aug	131.1	75.4	111.7	250.5	146.5
Sept	95.8	129.5	435	155.7	97.1
Oct	28.9	74.5	63.5	248.4	40.8
Nov	53.4	0.3	4.6	0.0	0.0
Dec	0.2	0.0	2.5	0.0	18.6

**Fig 01: Monthly rainfall (mm) in Hyderabad**

The Water Board’s month to month power utilization is in the vicinity of 120 and 150 Mega Watt (M W) costing Rs. 55 crores monthly. The water board is working three out of six pumps for providing Godavari water to the city and 24 pumps (three pumps for every stage) for providing of Krishna water. For this, almost 100 MW of force utilization is required (**Please see ref: 04**).

2. **Energy efficiency** in all areas (Required power bill of Water board and households): It is recognised that globally, urban groundwater use is intensifying to meet demands for growing population and industrialisation. The high contamination of surface water is one of the main reasons for increasing the above demand. In this sense, the demand and supply of electricity for pumping is continuously increasing with a small gap under some government policies. Furthermore, planning for climate-change mitigation must consider CO<sub>2</sub> emissions resulting from pumping. Already, the

burden on governments with subsidized rates (tariffs) for power generation companies and distribution corporations is mounting with ground water scarcity or falling of ground water table in urban areas and free power for agriculture conservation by farm community. Indiscriminate groundwater pumping from hundreds of feet leads to heat island situations and threatens the long-term sustainability of aquifers, climate trends and challenges, energy efficiency, industries, water uses, employment and ecosystems. Unexpected population growth is related to water quality degradation and is causing large increase in nutrients and microbial loads (**Ghosh et al., 2014; Krishnan et al., 2013; Maillard and Santos, 2008**) (**Please see ref: 05**). To overcome water scarcity in cities like Greater Hyderabad limits, state government is examining the urban infrastructure regularly.

- 3. Plumbing practices – reduce waste and pollution:** Greater Hyderabad population exploitation is flagging sustainability of its urban infrastructure and governance. Greater Hyderabad Municipal Corporation (GHMC), Hyderabad Metro Development Authority (HMDA) and Hyderabad Metro Water Supply and Sewerage Board (HMWSSB) continuously doing their plumbing and cleaning works for building infrastructure (roads, Water, Green space, subways, way bridges...) by demolishing properties of public and private at required places. In this process, the above organisations and civilians are generating tons of debris and dumping at open areas, eco systems present at lakes, water tanks, Musi river banks, corridors and sewerage pipelines. Apart from that, Hyderabadies are generating around 4200 Tons (**Please see annexure 06**). Solid waste per day and discharging 80%. Consumed water as sewerage (polluted or contaminated). To cross this emergency with “generated aroma waste”, Authorities are collecting, segregating and dumping at available government lands. This is again posing a big treat million household near dump site at the time of gales and flash floods. Another side the change is with deprived rainfall distribution under urban limits is increasing the necessity of investing on “sewerage treatment plants (STPs)”, which are not even increasing fresh ground water levels after treating. These kinds of practices were putting more loads on urban governance with debts (borrowings) and taxes.

The above three parameters are not only emptying the savings of citizens with imposed taxes, high cost of living and damages due to natural distress, but also pushing urban administration in to financial crisis or recession.

**Conclusion:** The above explanation is intimating upcoming **crisis with** high cost of living in urban areas with deprived and contaminated natural resources (Air, Water, land...) and showcasing new economic (new employment, additional income with taxes, relax from water scarcity,...) opportunities for future sustainability. This need-of-hour requires an alternative solution practices in infrastructure (construction) industry like “green building concept”, which will reduce the consumption levels in water, power and open lands for solid waste stockpile. Also, required ease policies, awareness for citizens under various urban ministry schemes and financial benefits from state or central governments like other countries. Finally it concludes negligence at any side may evaporate peace and lives of people in any urban area.

## References:

1. [https://shodhganga.inflibnet.ac.in/bitstream/10603/130762/8/08\\_%20chapter%201.pdf](https://shodhganga.inflibnet.ac.in/bitstream/10603/130762/8/08_%20chapter%201.pdf)
2. [http://hydro.imd.gov.in/hydrometweb/\(S\(n0svwomz14xt52yr5vvgfwv3\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(n0svwomz14xt52yr5vvgfwv3))/DistrictRaifall.aspx)
3. <http://www.fao.org/3/a0310e/A0310E05.htm>
4. <https://www.masterbuilder.co.in/water-board-use-solar-energy-reduce-bills/>
5. [https://www.researchgate.net/publication/322813271\\_Urbanization\\_and\\_Its\\_Effects\\_on\\_Water\\_Resources\\_An\\_Exploratory\\_Analysis](https://www.researchgate.net/publication/322813271_Urbanization_and_Its_Effects_on_Water_Resources_An_Exploratory_Analysis)
6. <https://timesofindia.indiatimes.com/city/hyderabad/hyderabad-tops-in-per-capita-waste-generation/articleshow/64515720.cms>