

SUSTAINABLE URBAN CANVAS- EXPERIMENTS WITH TRUTH

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ABSTRACT

The phenomenon of urbanisation, especially suburbanisation, is observed monolithically worldwide, but in a rippling wave like vogue. It trickles down vertically and diffuses out horizontally from the developed to the developing areas and from central to the peripheral regions, respectively. No economically progressing country has ever been able to avert its occurrence, which is inevitable and challenging. The daunting task of intelligently designing and confirming sanity and sustainability for an urban canvas is a multidimensional and multi / cross disciplinary endeavour. This demands retrospective understanding of the place and its people; anticipatory sense to forecast and strategize; and awareness about the practices worldwide and indigenous. Civilizations have always been civilized because of their informed and active citizens, who have come forth to the rescue of their lands of origin and fellow natives. Representation of this kind can be cited in the Garden City and City Beautiful movements of the late nineteenth and twentieth centuries, followed by many similar smaller and bigger experiments to the formal school of thought of urbanism, called “New Urbanism”. Many experiments happened under the wide umbrella of New Urbanism and garden city movement across the globe. From Great Britain, to the USA, Abu Dhabi and India, all have witnessed and / or are undergoing the sweeping dynamism in thought and action, for the pursuit of urban revamp and sustainability. This piece of research is an attempt towards compiling and evaluating such utopian models, taking cases from different countries, from different time periods, that have aimed at urban amelioration. The paper considers four cases of Masdar City (Abu Dhabi), Letchworth City (U.K), Disney Celebration Community (U.S.A.) and Magarpatta City (India) to showcase people’s experiments with truth for urban sustainability.

KEYWORDS - Urban sustainability, Garden City Movement, City Beautiful Movement, New Urbanism**MOVEMENTS THAT MOVED ‘NEW URBANISM’ – ‘GARDEN CITY’ AND ‘CITY BEAUTIFUL’ MOVEMENTS**

Mass urbanisation, especially suburbanisation, created urban sprawls across the world in the nineteenth century post advent of industrialisation, especially in the developed parts of the world. Government subsidised loans for white middle-class home buyers transformed the suburban landscape and provided the impetus for construction of a very different lived environment than had heretofore existed.¹ Today massive WorldWide Indexing, Abstracting and Readership. Peer Reviewed- Refereed International Publication available at <http://thescholedge.org>

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suburbanization has gripped and crippled the developing countries' urban life too. The rattling problem is rifting and drifting from one nation to the other and from one region to another. Lewis Mumford in his book, "The City in History", contends that "the ultimate effect of suburban escape in our time is, ironically, a low-grade uniform environment from which escape is impossible".ⁱⁱ Functionality and aesthetics left aside, urban canvas craves for attention, inclusion and sustainability.

Concerns over rapid mechanisation and homogenisation of urban expansion were raised parallel in Europe as well as USA in late 19th century. As a reaction, in the U.S.A. Daniel Hudson Burnham initiated "City Beautiful Movement" which brought into effect civic engagement through the construction of "humane" structures. Daniel typified the new kind of architect and planner who felt that large scale and rational planning initiatives were need of the hour. Under the McMillan Plan that was unveiled in 1902 Daniel was hired to make a fresh plan for the mall area in Washington D.C., which he got demolished to create the "Federal Triangle" of the day. The success was allowed to repeat itself and Cleveland, Ohio was the next to get a makeover under 'City Beautiful Movement', where Daniel Burnham, Arnold Brunner and John Carrere were put on job and later came to be known as Clevelanders. Larger than ever before Daniel Burnham and Edward Bennett got a larger canvas in Chicago in 1909 to prove that, "Make No Little Plan" was the order of the day.ⁱⁱⁱ

On one hand Daniel was leading the 'City Beautiful Movement' in the USA, a similar movement was to begin under stewardship of Ebenezer Howard in Great Britain called the "Garden City Movement" post his books "Tomorrow: a Peaceful Path to Real Reform" and "Garden Cities of Tomorrow", published in 1898 and 1902 respectively. C. B. Purdom (1919) defined Garden City as, "... a town designed for industry and healthy living; of a size that makes possible a full measure of social life, but not larger; surrounded by a permanent belt of rural land; the whole of the land being in public ownership or held in trust for the community."^{iv} Garden city would be based on strong principles of – strong vision, leadership and civic engagement; community ownership of land^v, mixed-tenures homes also affordable for ordinary people; strong local job offers within easy commuting distance; generous green space, opportunity to residents to grow their own food; land value captured for benefit of the community; strong cultural, recreational and shopping facilities in walkable neighborhoods and integrated transport system.

Following the two movements a strong foundation was laid already, for an organized change in the way urban canvas was perceived and envisioned. Andres Duany and Elizabeth Plater-Zyberk then formulated a blueprint and set of prescriptions for an organized "urbanism" that they called "New Urbanism". New Urbanism was an attempt to humanize the dangerously mechanized face of urban sprawls, but with no insistence on design determinism, rather taking urban forms from the past that were intensive and human centric. In words of Duany and Plater-Zyberk, New Urbanism focuses on design change that have effects of "the making of space

that draws people out from their private realms to stroll and loiter with their neighbours, making the neighbourhood more “intimate” rather than anonymous.”^{vi}

NEW URBANISM – ORGANIZING URBANISM VISION INTO A FORMAL SCHOOL OF THOUGHT

The Garden City and the City Beautiful movements coincided to offer a formal school of thought for urbanism, called “New Urbanism”. The founders of New Urbanism, Andres Duany and Elizabeth Plater- Zyberk^{vii} in their essay “The Second Coming of the American Small Town”, in the Winter 1992 WQ, suggest – “In order to promote community, the built environment must be diverse in use and population, sacred for pedestrian and capable of supporting mass transit as well as the automobile. So far, the mass produced suburbs and the sprawling communities were focused on the nuclear / single-family house, assuming that the residents would be dependent on automobile, which eventually resulted in physical and social fragmentation of the urban canvas.^{viii} Urban extensions should have been organized as neighborhoods and districts, and not as scattered dormitory suburbs, and developed with a mix of activities and with homes for a spectrum of incomes so poverty be not concentrated and opportunity diffused. New Urbanism theory of urban design therefore proposes that communities should be built for long life and loose fit, reducing the need for everyday travel.^{ix} Mixed use development here does not mean indiscriminately combining different functions, but mixing uses in such a vogue that it generates heavy traffic at different times of the day, while various uses complement each other taking care of design quality at the same time.

All such efforts started prior to the World War II in favor of urban revamp and restructuring are commonly categorized as New Urbanist developments, if such communities, in words of Eric M. Braun are –“...more compact, pedestrian friendly, mixed-use, that incorporate housing opportunities within walking distance of retail shopping, employment centers, and mass transit modes. Single family homes are located on small lots and are interspersed among multi-family townhouse and / or apartment developments. Side-walks are abundant and cul-de-sacs are minimized in favor of short interconnecting “grid pattern” street systems. Residential districts are planned with a variety of housing types designed to appeal to a range of income groups.”^x

This new vision for ‘polis’ is credited to individual designers like Tony Garnier, Antonio Sant’ Elia, Le Corbusier, Frank Lloyd Wright and Leon Krier^{xi}; whereas the architect groups that promoted modernist visions of city are CIAM, Team 10, Archigram and Metabolists. New Urbanism encompasses the principles and ideals, like – Denser, compact and clearly bounded communities that preserve places^{xii} and systems; Finer grained mixing of diverse land use, building types, age groups and socio economic groups instead of single-use zoning; Facilitation for walking, bicycling and public transit^{xiii} systems to replace automobile for routine trips; More brownfield than greenfield development; Spatially coherent and cohesive sense of place of neighborhood and

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community; Strengthening of public realm with face to face interaction and citizen participation^{xiv}; Reduced commodification and consumption of land and natural resources and enhanced sustainable practices.^{xv} New urbanism is effectively an urban design package that combines neo-traditional style of buildings arranged in street grids to form relatively dense^{xvi}, walkable mixed-use neighborhoods. While originally associated with new housing development new urbanism also addresses infill development and retrofitting urbanism to existing suburbs. Therefore New Urbanism intends to be nothing less than an alternative approach to ‘town making’, which emphasizes on – good governance, social equity, economic viability, self-containment and sustainability. New urbanism may be used as a guiding force for urban development at all scales, is a blend of architectural styles, is anti-sprawl smart growth and is transit oriented sustainable urbanism.^{xvii} The historian and architectural critic Victor Scully defines new urbanism as –“...reshaping the sprawl of automobile suburbia into communities that make sense.”^{xviii}

JUSTIFICATION FOR “NEW URBANISM”- AS A WAY FORWARD

New Urbanism gives more place specific, comprehensive and holistic solutions for urban sprawl. It addresses head-on the economic, environmental and social costs of urban sprawl. It is predicated on the notion that the most promising and cost-effective scale to address society’s^{xix} problems is the neighborhood and region, rather than household and municipality. Therefore rather than department of housing and urban development, there be department of neighborhood and urban development. Massive change in approach, from problem specific to place specific to have more comprehensive and place specific solutions in favor of more holistic governments and communities.^{xx}

Universality and adaptability of principles of New Urbanism give it merit across the globe. Michelle Thomson-Faawcett analyses the diffusion of new urbanist ideas, focusing on interweaving strands of innovation between key individuals and organizations in Europe and the United States. The analysis reveals how American new urbanist ideas have closely -perhaps organically – developed and intertwined with the European urbanism, shaping a variety of new developments being built out in a diversity of locations, as New Urbanism is adapted to different contexts.^{xxi}

New Urbanism is voicing the people’s inclination, rather than forcing upon them alien systems in the name of sustainability, survey by Center for Public Interest^{xxii} conducted and concluded as, the United State’s public opines the life style preferences in the following order – small town, village, rural setting and suburbs. A fresh poll in 1989 by Gallup, on the kind of place people wanted to live, results were almost the same, that is – 34% chose small town; 24% chose suburbs; 22% farm and remaining 19% city.^{xxiii} That clearly states that despite

ascending suburbia, it does not reflect the true preference of the people, but just a compromise in the absence of a better option.

Besides, New Urbanism is proponent of the holistic approach to urban development with a wider coverage of issues like economics, governance and regional planning than just architecture and site design.^{xxiv} It is people centric, considerate towards environment, politically acceptable, economically viable and culturally enriching.

EXPERIMENT WITH TRUTH IN UNITED KINGDOM – “LETCWORTH CITY”

Sir Ebenezer Howard is credited to have invented and initiated the ‘Garden City Movement’, that was introduced to the world through his books - "Tomorrow: a Peaceful Path to Real Reform", published in 1898 and “Garden Cities of Tomorrow” in 1902; and which saw the light of day in 1903 when he founded the first garden city of the world called Letchworth Garden City.^{xxv} Howard wrote in his book “Garden Cities of Tomorrow” - “...It is deeply to be deplored that the people should continue to stream into the already overcrowded cities, and should thus further deplete the country districts”.^{xxvi} Despite being the founder of the Garden City Movement, Ebenezer Howard was neither a planner nor an architect, he was a shorthand typist^{xxvii} but a man with vision and willingness to change poverty struck Britain in his own innovative manner.

Howard saw urban planning as an exercise to blend the elements of town and country side lives together to bring to people vibrancy of town and serenity of countryside simultaneously. He called town and country side as two magnets, benefits of which combined would produce “Town-Country”, and to him this was the best fit for urban life. Indirectly he was referring to sustainability from perspectives of – society, environment and economy. In Howard's words, “...a third alternative, in which all the advantages of the most energetic and active town life, with all the beauty and delight of the country, may be secured in perfect combination. Human society and the beauty of nature are meant to be enjoyed together.”^{xxviii} Howard outlined a model for self-sustaining towns combining the convenience of urban life with the advantages of a countryside location, surrounded by an agricultural greenbelt that provided jobs and food.

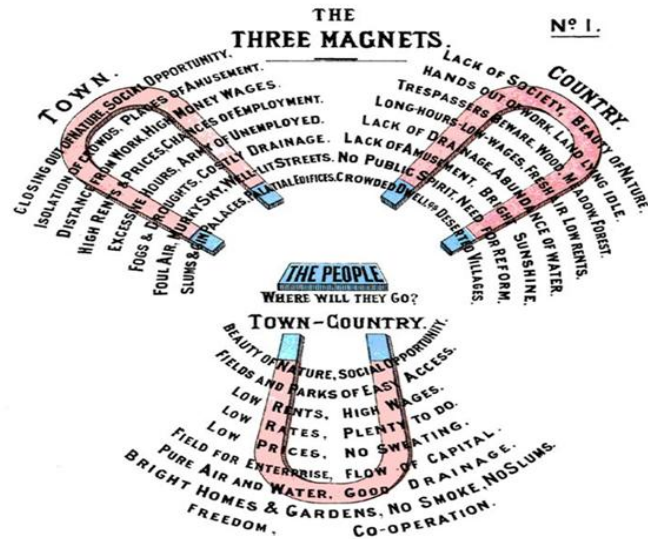


Figure – Three magnets diagram by Ebenezer Howard. Spatial Agency : Letchworth Garden City.

Source- www.spatialagency.net

Howard's books generated a lot of interest in the people, enabling Howard to have found the Garden Cities Association in 1899 and raise enough money for Letchworth to be delivered entirely by private enterprise.^{xxix} An experiment in social reform as much as town planning, it was put into practice when First Garden City Ltd was formed in 1903 and purchased around 1600 hectares (almost 4000 acres) of agricultural land^{xxx} close to London, in the three adjacent villages of Letchworth, Willian and Norton. Townplanners Barry Parker and Raymond Unwin, whose plan was adopted in 1904^{xxxi} for Letchworth carefully separated residential and industrial zones to minimize externalities on the negative side.

Today Letchworth is home to population of approximately 33,690 people and attracts visitors in huge numbers from across the globe. The community management of Letchworth still broadly follows Howard's principle of 'rate-rent', where residents pay for their services (rates) and those who invested in the initial development receive a return (rent), which in this case is reinvested back into the town.^{xxxii} This economically sustainable system has enabled the LetchworthHeritage Foundation to develop a range of services and amenities including hospital, museum, parks, minibus and shopmobility service, whilst also operating a number of businesses to supplement its income. After Letchworth, Howard established Welwyn Garden City in 1920 and since then the garden city movement has been hugely influential in the UK and around the world^{xxxiii}. Howard not only propounded a sustainable solution from economic and environment viewpoints but he also coined a co-operative system of community formulation which will indeed have seeds of social sustainability.^{xxxiv}



Figure - Letchworth Garden City

Letchworth has great outdoors open to all in the form of 'Green way' which is a circular route that surrounds the city facilitating leisure walks and strolls for residents for them to experience the country side beauty in town.^{xxxv} City offers 'Broadway Cinema' for its people to enjoy film, theatre, opera, ballet, music, kids club and more.^{xxxvi} City has its 'Art Center' to inculcate, preserve, exhibit and cherish various art forms. Exhibitions, live shows, and arts related courses for children and adults are main attraction. Three galleries, diverse artists, work of national and international acclaim embellish the center. Touring theatre, music, Comedy Club, storytelling for children -- and more is what community gains from the center.^{xxxvii} 'Letchworth Standalone Farm' introduces community to the biodiversity around with its creative encounters and interactions planned for the people, like - feeding sessions for cows, ducks, pigs and chickens; cow milking demonstrations and tractor trailer rides.^{xxxviii} City has its 'Community Hub' where people pop in if they need any changes in their homes, or community grants, or have queries pertaining to property or have ideas for the garden city present and future.^{xxxix} 'Garden City Collection' is another charm of the city which it takes up as a responsibility being the first garden city of the world. There are over 40,000 items to discover, including: the archives of the early Garden City Movement^{xl} and the architectural plans of the world's first Garden City; furniture; art and a wealth of social history telling Letchworth's fascinating story. This collection has pictures of awards won by this city like Wildlife Conservation Award by 'Farming and Wildlife Advisory Group Hertfordshire Branch in 1991; or the image that shows an open field/ plot of growing vegetables and surrounding that area are many trees with no buildings or roads visible from 1940-50s; or images from 1973 of school children putting new life into polluted land at the city. All this become heritage of the place to be taken pride of by the residents and to have bound them together as a community. The city has created history for itself and others who wish lessons from it in last 110 years of its existence.^{xli}

EXPERIMENT WITH TRUTH IN U.S.A. – “DISNEY CELEBRATION”

Certain traditional values like - diversity, community, frugality and human scale have become the foundation of a new direction for both American Dream and American Metropolis.^{xliii} Americans have been pioneers in popularizing New Urbanism and should be given the credit of formalizing this school of urban thought in mid twentieth century. Disney Celebration, Florida; Seaside, resort village, Florida; Laguna West, California are all examples of what U.S.A. has offered to strengthen New Urbanism school of thought in practice. We discuss Celebration as a prototype of New Urbanism from this country.

Walt Disney Company created a planned community in Florida, USA in 1994. Situated outside of Orlando, Celebration community sits on 4,900 acres of land, housing 20,000 people in 3,500 apartments. Famous architects of the time, Robert A.M.Stern (who is an industry leader in the design of buildings that are environmentally sustainable and energy efficient) and Jaquelin Roberts gave Celebration the flavors of Caribbean architecture and southern American village from the early twentieth century. Fleet of other architects have worked to create Disney’s dreamland community, where Celebration’s post office has been designed by Michael Graves, Florida bank designed by partners Robert Venturi and Denise Scott Brown, Celebration’s Stetson University Center by Deamer and Phillips, the 115-room "inn" by Graham Gund, Town Center incorporating 123 apartments and 150,000 square feet of retail, entertainment, and office space by Robert A.M. Stern, Paul Whalen, Daniel Lobitz, and Gary Brewer and the town hall by Philip Johnson.

Walt Disney planned Celebration as a utopian community that will be futuristic and be called the Experimental Prototype Community of Tomorrow^{xliiii}. He went on to suggest that community should be ‘built from the scratch on a virgin land’^{xliiv}. Celebration’s literature boasts that: "Celebration takes the best of what made small towns great in our past and adds a vision of the future”. The community’s foundation is based on five cornerstones: Health, Education, Technology, Sense of Community and Sense of Place^{xliv}. With “Live, Work and Play” as its motto Celebration likes to claim that it is a wonderful place to visit, and an even better place to call home^{xlvi}.

Often cited as a neat example of New Urbanism, having a neo-traditional town design, houses at Celebration are clustered around pedestrian-friendly shopping area. Buildings have been molded to fit the shape of streets to redefine the importance of lively streets. The market street has colorful storybook atmosphere which residents and visitors like to call “Disney-esque. A strong public realm has been created with the interplay of ‘streets that work’, walkways that eventually culminate into either parks, waterways or in natural woodlands, garages that are located on alleys and look upon the open streets, golf course that is bordered by public street rather than privatized, tree lined streets, parks and buildings, and shady vias and store-lined walkways that

connect the downtown parking areas to the surrounding streets. A special effort has been made to introduce demographic heterogeneity in the neighborhoods, in contrast to suburban homogeneity. Businesses mingling with living quarters, entertainment with commercial spaces, leisure with work places, nature with residential areas facilitate human interface, outdoor life and random interactions at Celebration, giving community life a whole new meaning. On the other hand extensive intranet system, school, university center and hospital make the community functionally complete.



Figure – Celebration Community

Celebration keeps buzzing with community life with various events happening all round the year. Vibrant life at Celebration sees the ‘Jazz Festival’ featuring middle and high school jazz band students and other jazz bands from around the county ; ‘Food Truck Fridays’ which welcome dozen of the best food trucks from central Florida to the Celebration Town Hall parking for residents of Celebration to indulge in food and music ; ‘Annual Posh Pooch Festival’ where variety of dog-friendly vendors and rescues meet at the Lakeside park for demonstrations, expert presentations and entertainment ; ‘Home Expo’ -“A job for every tool, a tool for every job” where a wide assortment of products and services get displayed including appliances and mechanical equipment, interior services, exterior services, structural attachments and landscaping; ‘Exotic Car’ Festival that flaunts cars from across the world and of different eras; ‘Relay For Life’ in collaboration with American Cancer Society; Summer Camp for kids; Memorial flag ceremony; Annual Meetings with residents; Easter Egg Hunts; ‘March for Meals’ in partnership with Meals on Wheels Association of America. Celebration pampers its residents with opportunities of a healthy community life.

Well acclaimed for what it offers, Celebration attracts criticism too for what it does not, though it should. Celebration as a community claims more than what critics think it delivers. Firstly, it claims to give to its residents a fine balance of utopia and futurism by providing a small town ambience and feel. Walt Disney

though had once destroyed the old Orlando communities to establish his Disney World. Therefore it is just reacting on its own action and trying to cover up the losses incurred to the local communities of Orlando. Secondly, Celebration forces on its people rules and regulations to the extent of whims and fancies. The commons at Celebration have to sign a “Declaration of Covenants” which are too authoritative like – no more than two people can sleep in one bedroom, homeowners have to follow specific guidelines about what kind of plants and shrubs may be planted in^{xlvii} the yard, to what height can the fence be raised, any exterior design could be changed only with permission of the committee, only white curtains should be seen from the outside, etc. Celebration may claim to have brought variety and heterogeneity to the ‘community living’, but the 2000 census revealed that the community was 88 percent white, compared to the surrounding county's 59 percent white population^{xlviii}. Celebration has separated itself economically by pricing its apartments at 20-30% more than the comparable developments. Michael Bierut of the New York graphic design powerhouse Pentagram^{xlix}, designed the signage for Celebration says - "We ended up designing not only street signs and shop signs, but manhole covers, fountains, golf course graphics, park trail markers, the sales center and even that pattern book for the houses,". This kind of development is inorganic and imposed. This over-engineering lacks “authenticity”

EXPERIMENT WITH TRUTH– INDIA – “MAGARPATTA CITY”

Maharashtra is one of the most forward and urbanised state of India with Mumbai as its capital, which also serves as financial capital to the country. Pune is in vicinity of Mumbai and the population and business traffic shifts and sweeps conveniently from Mumbai to Pune, making it a hub of education and business houses. Pune is also a hub of integrated townships with more than 10 big projects in its stride, like Magarpatta, Nanded, Amanora, Blue Ridge, Life Republic, Lavasa, etc. On the other hand Maharashtra has been one of the pioneers for drafting its independent Township Policy along with states like Andhra Pradesh and Gujarat. It clearly states the norms and regulations for an integrated township, for example – a minimum uninterrupted land parcel of 100 acres; minimum 60% residential coverage out of which 10% for lower income groups; mix of commercial, business, residential, educational and health institute incorporation; availability of social and physical infrastructure, etc. In the following section we consider Magarpatta city which is an ISO 9001: 2008 certified township built in 1990's even before the township policy came into being, therefore in a way is a flagship township also sometimes called “Pride of Pune” for its exemplary social model, along with environmental and economic sustainability features.



Figure – Magarpatta City

Magarpatta city was built over 400 acres in the erstwhile village of Hadapsar, on the outskirts of Pune. Magarpatta was conceived to have residential as well as corporate, mostly IT/ITES, community. The master planning and architectural development of Magarpatta City was undertaken by Associated Space Designers Pvt. Ltd, Pune, under the stewardship of Ar. Prakash Deshmukhⁱ. The Magar clan and their immediate neighbors, comprising 123 families decided that they would develop the land themselves. They pooled 400 acres (162 ha) before requesting architect Hafeez Contractor to draft a private township plan, which was submitted to theⁱⁱ departments of the state administration for approval. They mooted the idea of a company rather than a cooperative so that each family got shares equal to the size of their landholding. The company was registered as the Magarpatta Township Development and Construction Company Limited; Satish Magar is its managing directorⁱⁱⁱ.

A clean and healthy environment is one of the most essential features furnished by Magarpatta City. It has devoted 120 acres for gardens out of its total area of 400 acres. Covering 25 acres, the Central Aditi Garden is one of the largest gardens in Pune. In addition to this there are 25 block gardens each of 3-4 acres area. At present the city has over 4.5 lakh sq. ft. of well-manicured lawns that extend all over. Plus over 6,000 trees, garden traffic islands and glorious fountains add to the city's beauty and keep the air fresh. City practices various Sustainable Energy Systems on a huge scale striving to reduce Global Warming. Beginning with the inbuilt or imbibed energy in the construction of the buildings in terms of material used - Magarpatta uses fly ash, which is an environmentally hazardous waste produced by thermal power plants is used as a part replacement of cement and fine aggregates, is an inert material & saves energy required for production of cement. Usage of fly ash bricks helps in reduction of greenhouse gases, which are depleting the ozone layer.

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These bricks are better than traditional bricks because of various reasons, like controlling of pollution, cost, breakage, wastages, evenness, finish while manufacturing and more compressive strength. As fly ash bricks are produced mechanically they are economical, good for any type of masonry and absorb very less water. For every ton of fly ash used in construction, approximately 1 ton of CO₂ emission in environment is reduced. Magarpatta City is set to consume 1,30,000 ton of fly ash by the time construction is completed there, translating into a huge saving of over the same, i.e. 1,30,000 tons of carbon emission.

Magarpatta City also provides eco-friendly amenities like solar water heating and lighting, and adopts practices like hygienic garbage disposal to further preserve the ecological sanctity. Magarpatta City has become home to one of the largest residential Solar Water-Heating systems in the country. The solar panels have been put in all the residential apartments comprising of about 3500 flats in the Phase-I & II. On completion, the total capacity will be in the region of 7 lakh liters per day which will save power to the tune of 37 KWH per day and in monetary terms Rs.3.9 crore a year. This is one of the many environment-friendly practices carried out in Magarpatta City. Another important feature is the Garbage collection and treatment at the city. Eco-friendly practice of segregation of over 400 tons of household and commercial garbage, trash and waste per month is done at source of which 280 tons of biodegradable waste is used for vermi-culture and bio-compost. Over 120 tons non-biodegradable waste is recycled in a way not hazardous to nature, disposed-off safely and the re-usable scrap is soldⁱⁱⁱ. In this way Magarpatta is achieving its objective with which it was established and living its vision, which is - To create a new way of life for the networked society of the new millennium. With emphasis on proper environment control, good living standards, modern educational system and state-of-the-art working conditions with total security^{iv}.

Magarpatta city is a fine blend of community building its place keeping account of economic and environmental sustainability. It is an exemplary city with true democratic essence justifying its relevance in favor of “of, for and by the people”. Questioning such prototypes of New Urbanism, caution is not yet laid on integrating the various such cities together to make the whole city system of the parent city holistic and sustainable.

EXPERIMENT WITH TRUTH– ABU DHABI – “MASDAR CITY”

Initiated in the year 2006 and expected to be complete by 2030, built by the Abu Dhabi Future Energy Company, a subsidiary of Mubadala Development Company, Masdar City is a planned city with the majority of seed capital provided by the government of Abu Dhabi. Designed by the British architectural firm Foster and Partners, the city will rely entirely on solar energy and other renewable energy sources, with a sustainable, zero-carbon, zero-waste ecology and will be a car free city. The city is being constructed 17 kilometers (11 mi)

east-south-east of the city of Abu Dhabi, beside Abu Dhabi International Airport^{lv} and covers an area of around 6 square kilometers. The city claims to be the most sustainable city in the world built at a cost of US\$ 19.8 billion and shall be abode to 40,000 people and additional 50,000 who shall commute everyday to Masdar. There are certain overriding characteristics that define Masdar city – Optimal Orientation - that is southeast-northwest axis, providing shade and breeze to its streets and minimizing thermal gain on the buildings; Integrated in nature and design – for commercial, residential, research and education purposes; Low Rise and High density – this is a basic element to low energy urban community; Vibrant Urban Realm; pedestrian friendly; High quality of life, Convenient Public Transportation and Traditional Arabian City Design^{lvi}.



Figure – Masdar City^{lvii}

One interesting fact out of many others, is that at Masdar the biggest environmental gains come from the least financial investment, for example city's orientation and form^{lviii}; responsive shading and maximizing use of natural lighting and ventilation; the relatively expensive active controls such as heat recovery and photovoltaics^{lix} with lowest relative money returns are put on lowest priority, preference is given to minimizing the energy requirements in the first place through intelligent and responsible designing. These features add to the environmental along with economic sustainability. Masdar relies upon renewable sources of energy, there are 35 different panels being tested, including thin-film and crystalline^{lx} photovoltaic panels to check the best suitable and efficient one that could perform well in humid and sandy conditions of the location. Masdar also flaunts the low cost and high efficiency Beam Down Project – a joint pilot project of Masdar Institute of Science and Technology, Japan Cosmo Oil Company and Tokyo Institute of Technology. This beam takes the conventional concentrated solar power (CSP) design and turns it on its head. Although still in the R&D stage, initial results show that the 100kW tower could generate 75-85MWh of clean electricity a year enough to power

10-15 homes^{lxi}. Applications of geothermal energy are also being explored, and city's most exciting project is the exploratory drilling deep underground to test the availability of sufficiently hot water to be used in thermal cooling^{lxii}, power production and desalination. On the city's surface flourishes the 10 MW Solar Photovoltaic farm that aims to produce 17,500MWh of clean electricity annually, thereby offsetting 15,000 tons of carbon emissions per year- equivalent to taking 3,300 cars off the Abu Dhabi's roads^{lxiii}.

City has its recycling centre that diverts upto 96% of construction waste from landfill and use in the build of the city; the personal and freight rapid transit system (City PRT) was designed by the legendary Italian automotive and design house Zagato, which had designed cars for Ferrari, Bentley, Rolls Royce, Jaguar and Aston Martin^{lxiv}. Also an extremely interesting feature to conserve energy and encourage walking within the city, which is as simple as, highlighting the staircases and making the escalators not easily visible is working wonders, this is against the conventional building set up where the lifts are highlighted and staircases often hard to locate. For a better pedestrian environment, the combination of shading, planting and water features that lower the perceived temperatures on Masdar streets by 20 degrees celsius compared to the open desert and 25 degrees compared to modern Gulf city centres during hottest days of the year^{lxv}, this encourages and facilitates the residents to walk rather than using vehicles. Only to add to the intelligent designing Masdar has a wind tower at the bottom of which is the Urban square, there are two functions of this tower – first, that the LED lighting the tower changes colors to let residents and visitors know whether they are using too much of energy or an appropriate one; second, that the layout of the square has been designed so that the more actively used areas receive a larger share of wind tower's moderating effects, thus consuming less energy and enhancing comfort. The building façades have wall insulation levels are more than three times higher than the benchmark set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), while strict air-tightness standards aim to control the infiltration of hot, humid air^{lxvi}. City has ready mix concrete batching plant, that replaces a portion of concrete's Portland cement with two supplementary cementing materials (SMCs) – fly ash from coal combustion and blast furnace slag from iron production- to produce concrete which reduces greenhouse gases and air pollution^{lxvii}. Concrete is the second most commonly used material on earth; however, just one cubic meter of concrete generates approximately 240kg of CO₂. Since production began in January 2009, the plant has supplied more than 250,000 cubic meters of concrete, representing a savings of approximately 29,250 metric tons of CO₂ equivalent^{lxviii}. There are numerous other features that make Masdar an ideal destination for modern living with a high sense of intelligence and environmental sustainability. To encourage more research and business organizations to join Masdar city, Government of UAE has given an incentive of zero tax from the investors and business houses and this is an additional attribute for Masdar becoming a magnet to all super specialized and other business and research houses.

Masdar City focuses on environmental and economic sustainability more than the social. The city erected from the government seed money and the local community has no role whatsoever to play in the city, except for implying with the rules and guidelines set by the city authorities. Not much can be commented on the success of Masdar city as it is yet to get completed and fully occupied. But in all the community participation is what one would like to see more in such projects.

FROM EXPERIMENT TO PROTOTYPE OF NEW URBANISM

New Urbanism has come a long way since 1898, from days of Ebenezer Howard and Daniel Burnham, from 1950's Andres Duany and Elizabeth Plater-Zyberk to date, from individual movements to universal goals of urban revamp and amelioration. Various countries and communities may have named it differently or would have approached to it in diversified manner, but each is looking at urban sustainability and community well-being as the final goals. Communities like 'Disney Celebration' seem over-engineered and extra-articulated that attract the elite and the rich, but is still rewarding in terms of community experience and healthy living. Letchworth city, is an epitome of 'community building a community for it-self', it has stood there for over hundred years to prove what it stands for. Magarpatta city is exemplary for being "of, for and by the people", where like Letchworth city people made what they wanted, and have taken the onus to carry the legacy forward without any external support. Masdar city on lines of Celebration, has been introduced to the system by an external agency, in case of Celebration it was Walt Disney Company and for Masdar it is the government taking giant leap forward towards sustainable community building.

The two cities of Letchworth and Magarpatta come from the people and bottom of the pyramid which follow more or less the co-operative system of community building and management. Contrast to this, Celebration and Masdar cities may have to walk an extra mile to earn familiarity, faith and confidence of the people. These cities may not be 'unalloyed good' to become a universal prescription. But what is common in all these experimental cities is that they have been built with a vision, purpose and determination to change the urban face of the world, for better. Such large scale experiments are all around, but it is time to accept them as prototypes, critically analyze their worth in time and space contexts, and replicate them adapting to the needs of the local people and places. Our anxious search for a sustainable urban canvas, may find its answer in an organized movement, a one more time in the twenty first century. Community building is means and ends both, where 'human-centric' approach cannot be belittled. So let the commons contribute to the creation of their community for "common future of mankind".

This is also exactly what Elinor Ostrom has prescribed, that commons are the best judge, managers and visionaries of their common resources, and what could be a better such sphere than communities themselves.

Let commons design their own communities organically, intelligently and farsightedly. No citizen would then feel alienated from his city or anonymous in the community he resides, on the contrary he will take the onus and would relate with his city more in every way. Such experiments have time and again proved that sustainability can never be imposed on people from the authority, rather it sets in along with the conferred and assured sense of ownership of community and participation in its building. It is time to welcome communities built by commons and we have some exemplary communities like Letchworth and Magarpatta along with others to validate the point well enough.

ENDNOTES

- ⁱ Kenneth, Jackson (1985): “The Suburbanization of the United States”, Crabgrass Frontier, New York.
- ⁱⁱ Bartling, Hugh E. (Summer) “Disney’s Celebration, the Promise of New Urbanism, and the Portents of Homogeneity”, Submitted to University of Central Florida
- ⁱⁱⁱ Klein, Richard “The Overview of City Beautiful Movement as Reflected in Daniel Brunham’s Vision”, Viewed on 22/April/2015
(http://academic.csuohio.edu/tah/regional_arts/artsheritage/p61anoverview.pdf)
- ^{iv} Letchworth Garden City, Viewed on 22/April/2015 (<http://www.garden-cities-exhibition.com/howard/>); Garden Cities, Viewed on 29/ May/2015 (www.tcpa.org.uk)
- ^v Creating Garden Cities and Suburbs Today, Viewed on 29/May/2015 (www.tcpa.org.uk)
- ^{vi} Bartling, Hugh E. (Summer 2002) “Disney’s Celebration, the Promise of New Urbanism, and the Portents of Homogeneity” Submitted to University of Florida, (Student Paper).
- ^{vii} Duany, Andres & Plater-Zyberk, Elizabeth (Winter 1992), “The Second Coming of American Small Town” Viewed on 29/May/2015 (eprints.nottingham.ac.uk)
- ^{viii} Rybczynski, Witold (Summer 2012): “The Dawn of Market Urbanism”, The Wilson Quarterly (1976), Vol.36, No.3, pp 16-19
- ^{ix} Hebbert, Michale (2003): “New Urbanism – The Movement in Context”, Built Environment(1978), Vol.29, No.3, New Urbanism, pp 193-209
- ^x Braun, Eric M. (1999), Viewed on 29/May/2015 (Isr.nellco.org)
- Sitkowski, Robert J. & Ohm, Brian W. (Fall 2002) : “Enabling New Urbanism”, The Urban Lawyer, Vol.34, No. 4, pp 935-943 – American Bar Association – Defending Liberty, Pursuing Justice
- ^{xi} Submitted to Florida International University
- ^{xii} Viewed on 29/May/2015, (www.architects.org)
- ^{xiii} Submitted to University of Western Sydney
- ^{xiv} Viewed on 29/May/2015, (www.architects.org)
- ^{xv} Kelbaugh, Doug (Nov 1997): “The New Urbanism”, Journal of Architectural Education (1984), Vol.51, No. 2, pp142-144
- ^{xvi} Viewed on 29/May/2015, (eprints.nottingham.ac.uk)
- ^{xvii} Marshall, Stephen : “New Urbanism : An Introduction”, Submitted to University Built Environment Vol 29 No 3

-
- ^{xviii} Shibley, Robert G. (1994) “The Complete New Urbanism and the Partial Practices of Placemaking” – Architecture, Design, and Utopia”, Utopian Studies, Wntr 1998 Issue
- ^{xix} Submitted to Florida International University
- ^{xx} Shibley, Robert G. & Kelbaugh, Doug (1984): “The New Urbanism”, Submitted to Florida International University, pp142-144
- ^{xxi} “New Urbanism : An Introduction”, Submitted to University of Newcastle
- ^{xxii} Center for Public Interest Polling CPIP (1988), “Housing Preferences- Results of a Poll” Urban Land 47, no.5pp:32-3)
- ^{xxiii} Shibley, Robert G. “The Complete New Urbanism and the Partial Practices of Placemaking”, Journal of Architectural Education
- ^{xxiv} “New Urbanism : An Introduction”, Viewed on 29/May/2015 (massengale.typepad.com)
- ^{xxv} Viewed on 29/May/2015 (<http://www.look-trade.co.uk>)
- ^{xxvi} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.garden-cities-exhibition.com/howard/>)
- ^{xxvii} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.garden-cities-exhibition.com>)
- ^{xxviii} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.northherts.gov.uk>)
- ^{xxix} Letchworth Garden City, Viewed on 10th April 2015 (<http://www.spatialagency.net>)
- ^{xxx} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.northherts.gov.uk>)
- ^{xxxi} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.northherts.gov.uk>)
- ^{xxxii} Letchworth Garden City, Viewed on 10th April 2015 (<http://www.spatialagency.net>)
- ^{xxxiii} Letchworth Garden City, Viewed on 10th April 2015 (<http://www.spatialagency.net>)
- ^{xxxiv} Letchworth Garden City, Viewed on 10th April 2015
<http://www.spatialagency.net/database/why/political/garden.cities>
- ^{xxxv} Heritage Foundation, Letchworth City, Viewed on 12/April/2015
(<http://www.greenway.org.uk/>)
- ^{xxxvi} Letchworth Garden City Broadway Cinema (<http://broadway-cinema.com/Browsing>)
- ^{xxxvii} Letchworth Garden City, Viewed on 11/April/2015 (<http://www.letchwortharts.org/>)
- ^{xxxviii} Standalone Farm, Letchworth City, Viewed on 9/April/2015
(<http://www.standalonefarm.com/>)
- ^{xxxix} Letchworth Garden City, Viewed on 11/April/2015 (www.tcpa.org.uk)
- ^{xl} Garden City Movement, Viewed on 29/May/2015 (www.tcpa.org.uk)
- ^{xli} Garden City Collection, Viewed on 10/April/2015
(<http://www.gardencitycollection.com/home>)
- ^{lii} Shibley, Robert G. : “The Complete New Urbanism and the Partial Practices of Place Making”, Architecture, Design, and Utopia”) Utopian Studies, Wntr 1998 Issue
- ^{liii} Viewed on 29/May/2015, (www.societyofcontrol.com)
- ^{liiv} Viewed on 29/May/2015, (www.societyofcontrol.com)
- ^{liv} Viewed on 29/May/2015, (www.equitabletitlegroup.com)
- ^{lv} Viewed on 29/May/2015, (www.equitabletitlegroup.com)
- ^{lvii} Viewed on 29/May/2015, (www.societyofcontrol.com)
- ^{lviii} Viewed on 29/May/2015, ([gizmodo.com](http://www.gizmodo.com))
- ^{lix} Viewed on 29/May/2015, ([gizmodo.com](http://www.gizmodo.com))

-
- ⁱ Viewed on 29/May/2015, (en.wikipedia.org)
- ⁱⁱ Viewed on 29/May/2015, (www.absoluteliving.in)
- ⁱⁱⁱ Viewed on 29/May/2015, (en.wikipedia.org)
- ⁱⁱⁱⁱ Viewed on 29/May/2015, (www.magarpattacity.com)
- ^{liv} Viewed on 29/May/2015, (www.industryleadersmagazine.com)
- ^{lv} Viewed on 29/May/2015, (en.wikipedia.org)
- ^{lvi} Submitted to Universitat Stuttgart
- ^{lvii} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lviii} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lix} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lx} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lxi} Viewed on 29/May/2015, (www.masdarconnect.com)
- ^{lxii} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lxiii} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lxiv} Viewed on 29/May/2015, (www.industryleadermagazine.com)
- ^{lxv} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lxvi} Viewed on 29/May/2015, (www.masdarcity.ae)
- ^{lxvii} Submitted to Deakin University
- ^{lxviii} Viewed on 29/May/2015, (www.masdarcity.ae)

REFERENCES

1. Bartling, Hugh E.: “Disney’s Celebration, the Promise of New Urbanism, and the Portents of Homogeneity”, Submitted to University of Central Florida
2. Braun, Eric M. (1999):“Growth Management & New Urbanism: Legal Implications”(isr.nellco.org)
3. Calthorpe, Peter (1996), Presented in a keynote speech at the Environmental Design Research Association Conference, Salt Lake City, Utah.
4. Center for Public Interest Polling CPIP. “Housing Preferences- Results of a Poll” Urban Land 47, no.5 (1988):32-3)
5. Champbell-Dollaghan, Kelsey (2014): Celebration, Florida: The Utopian Town That America Just Couldn’t Trust” (<http://gizmodo.com/celebration-florida-the-utopian-town-that-america-jus-1564479405>)
6. Craven, Jackie, Viewed on 9/April/2015:Celebration, Florida[http, About Home](http://architecture.about.com/od/plannedcities/ss/celebration.htm) ([//architecture.about.com/od/plannedcities/ss/celebration.htm](http://architecture.about.com/od/plannedcities/ss/celebration.htm))

-
7. Creating Sustainable Energy in Masdar, Abu Dhabi”
(<http://www2.dupont.com/inclusive-innovations/en-us/gss/global-challenges/energy/science-hope.html>)
 8. Disney, Celebration, Viewed on 22/March/2015,
(<http://xroads.virginia.edu/~HYPER/HNS/Cities/DISNEY.htm>)
 9. Duany, Andres & Plater-Zyberk, Elizabeth (Winter 1992), “The Second Coming of American Small Town” Viewed on 29/May/2015 (eprints.nottingham.ac.uk)
 10. Earth Techling's Lauren Craig (2012)“Masdar, Abu Dhabi Planned City, Will Lead Way In Low-Carbon Development”, Viewed on 22/April/2015
(http://www.huffingtonpost.com/2012/01/25/masdar-abu-dhabi-planned-city_n_1229311.html)
 11. Garden City, Viewed on 29/May/2015 (www.tcpa.org.uk)
 12. Hartman, Hattie (2010) “Masdar City, Abu Dhabi”
(<http://www.architectsjournal.co.uk/buildings/aj-building-studies/masdar-city-abu-dhabi/5214105.article>)
 13. Hebbert, Michale (2003): “New Urbanism – The Movement in Context”, Built Environment(1978), Vol.29, No.3, New Urbanism, pp 193-209
 14. Kelbaugh, Doug (1997) :“The New Urbanism”, Journal of Architectural Education (1984), Vol.51, No. 2, pp142-144
 15. Magarpatta City, Viewed on 13/March/2015 (<http://www.magarpattacity.com/>)
 16. Marshall, Stephen “New Urbanism : An Introduction” , Built Environment Vol 29 No 3
 17. Masdar, A Mubadala Company “Whole City Awards : Masdar City – A Sustainable Community” (<http://www.livcomawards.com/2012-awards/documents/MasdarLivComWholeCityAwards.pdf>)
 18. Masdar City, Viewed on 13/March/2015
(<http://www.masdar.ae/en/#home/detail/sustainability-in-masdar-city>)
 19. Masdar City, Viewed on 3/February/2015,
(<http://masdarconnect.com/userfiles/files/Exploring-Masdar-City-Site-Tour-Booklet.pdf>)

-
20. "New Urbanism : An Introduction", Viewed on 29/May/2015
(massengale.typepad.com)
 21. Orlando Trastic (2008), "What is Celebration Anyway"
(<http://blog.dwtickets.com/2008/12/what-is-celebration-anyway.html>)
 22. Richard Klein "The Overview of City Beautiful Movement as Reflected in Daniel Brunham's Vision Viewed on 3/April/2015
(http://academic.csuohio.edu/tah/regional_arts/artsheritage/p61anoverview.pdf)
 23. Scully, Victor (1994): "The New Urbanism", The Architecture of Community. Ed. Peter Katz. NY: McGraw Hill pp, 221-231
 24. Shibley, Robert G. : "The Complete New Urbanism and the Partial Practices of Place Making" Journal of Architectural Education
 25. Sitkowski, Robert J. & Ohm, Brian W. (Fall 2002) : "Enabling New Urbanism", The Urban Lawyer, Vol.34, No. 4, pp 935-943 – American Bar Association – Defending Liberty, Pursuing Justice
 26. Stern, Robert A.M. (1997) "Planning Celebration, Florida
(<http://www.ramsa.com/en/projects-search/planning/celebration.html>)
 27. Top 20 Green Tech Ideas Viewed on 7/March/2015
(<http://www.time.com/time/specials/packages/0,28757,2030137,00.html>)
 28. T. Pallavi, S., Manju(2014)"Integrated Townships to Resume Cities' Environmental Sustainability" in the book titled – Environment Sustainability: Concepts, Principles, Evidences and Innovations, ISBN: 978-93-83083-75-6
 29. T. Pallavi (2012) "Townships for Sustainable Development"
(<http://www.sciencedirect.com/science/journal/18770428/37>)
 30. "United Arab Emirates" International Monetary Fund Retrieved 2012-04-22
 31. United Arab Emirates: Sunday, May 13 – 2012, Viewed on 23/March/2015
(<http://www.ameinfo.com/dubai-municipality-joins-etisalat-reducing-uaes-300228>)
 32. "United Nations Statistics Division" Viewed on 23/March/2015
(<http://unstats.un.org/unsd/default.htm>. Retrieved 2012-09-27)

-
33. Walsh, Bryan (2011): “Masdar City – The World’s Greenest City”
(<http://www.time.com/time/health/article/0,8599,2043934,00.html>)
 34. Welcome to Celebration, Viewed on 9/April/2015
(<http://www.celebration.fl.us/celebration-events/upcoming/>)
 35. “World’s CO₂ Emissions from Consumption of Energy”(2010)(<https://docs.google.com/spreadsheet/ccc?key=0AonYZs4MzIZbdFF1QWoockYzOGoyWkZqcUhnNDVISWc&hl=en#gid=1>)