

By Ashish Mahajan
Founder, PropStory

Infrastructure is the key to the growth of any city. All major cities of the world continue to thrive as long as there is constant and consistent upkeep, revamping, expansion of or addition to existing infrastructure. In India we see this with Mumbai, Pune, Delhi-NCR, Bangalore and Chennai. Pune in particular has finally stepped out from the shadow of its

5 Infra Projects That Could Put Pune Among Global Top Cities

illustrious sister city Mumbai. The Mumbai-Pune Expressway and subsequent highways, expressways and dedicated rail services initiated the emergence of the city from a town. Since then there has been no looking back, Pune city races at the forefront of development. It is becoming the city of choice for more and more homebuyers, not least because of its status as a tech hub.

However, of late this picturesque, landlocked city has been struggling to cope with rapid population growth. Its public infrastructure and services are sagging under the pressure. Meanwhile, the various municipal bodies as well as associated non-profit and private bodies are engaging more regularly to come up with sustainable solutions. While there are numerous solutions and proposed developments, a few of them are highly

GET SET LOOPI!



Clockwise: Virgin Hyperloop One Test Track in North Las Vegas, Nevada, United States • Mumbai Pune Expressway has improved connectivity • Pune Metro work under progress.

discussed and critiqued. These include, but are not limited to the following:

PUNE RING ROAD:

The proposed Pune Ring Road is one of the most anticipated infrastructure projects in Pune and equally one of the most controversial. There are regular updates about the budget allocation, the total distance it will cover and when the first phase will actually begin. This particular 128 km eight-lane project is expected to do much for Pune city and enhance connectivity, however, it keeps running into land acquisition hurdles. The proposed route will pass through many villages on the outskirts of Pune such as Khed Shivapur, Maval, Kesnand, Waghodi and Pirangut. The Pune Metropolitan Regional Development Authority (PMRDA) tasked with overseeing this ambitious project has to manage the unenviable task of land acquisition. The Ring Road has also become a pet topic on the development platform that every political outfit uses to contest elections.

PUNE METRO:

The Pune Metro is a much anticipated mode of mass transit that will be a game changer in

how Puneites commute daily. The overused Pune BRTS and terrible daily traffic snarls prompted the initial need for the Metro. Although discussions began in 2008, the final approval was received only in 2016 and on 24 December that year PM Narendra Modi laid the foundation stone. Two lines are being constructed - Pimpri Chinchwad Municipal Corporation (PCMC) to Swargate and Vanaz to Ramwadi - by the MAHA-METRO. The first line will be partly elevated and partly underground and second will run on elevated rails. Work is in progress with around 20% of construction completed. The Pune Metro project is expected to be completed in 2021.

Further extensions to these two lines have been proposed such as Line 3 which will run from Hinjawadi to Civil Court and will be completely elevated. It will include numerous major stops such as both phases of Hinjawadi, Wakad and Baner among others and will be a boon to those working in Pune's IT hub. This project is currently facing land acquisition hurdles.

NEW PUNE AIRPORT

The proposed Chhatrapati Sambhaji Rajee International airport at Purandar in Pune has finally received clearance from the Civil

Aviation Ministry, however it is expected to be ready only by 2022-23. Meanwhile, the current airport at Lohegaon is grossly over-utilized as passenger traffic grew 20.6% to 8.16 million in fiscal 2017-18, compared to 6.76 million in the previous fiscal, according to AAI data. Even as the current capacity is exhausted there are plans to expand it by adding a new terminal building, solar power system, new checking counters and boarding gates as well as improved passenger amenities. This new expansion of the current airport will see an investment of Rs. 650 crore. Overall, Pune residents can look forward to a revamped airport and a brand new airport as well; something neighbouring city of Mumbai will envy!

SMART CITY

Pune is one of the 98 smart cities shortlisted for development under the Smart Cities Mission. The Pune Smart City Development Corporation Limited (PSCDCL) SPV was formed to plan and implement specific smart projects in Pune. A number of initiatives that residents can look forward to include better and environment-friendly transport, water, sewage and solar power infrastructure as well as slum rehabilitation. A laudable initiative that the PMC launched is the Public Bicycle Sharing

service to encourage more residents to opt for cleaner modes of transport such as bicycles. The Digital Pune Hackathon 2015 was launched to solicit smart solutions to various developmental problems faced by city. A number of such solutions were selected for implementation by various municipal bodies.

MUMBAI-PUNE HYPERLOOP

Probably one of the most ambitious projects to ever be considered, the hyperloop route between Mumbai and Pune is expected to reduce travel time from 4 hours to just 20 minutes! Sounds like science fiction? Probably, but the next-gen magnetic levitation technology backs it. The futuristic transport system which envisages transporting people in passenger pods travelling through near-vacuum tubes at speeds faster than that of aeroplanes is still in its infancy. Virgin Hyperloop One demonstrated a prototype in the Nevada desert in December last year which travelled at 240 miles per hour. Despite many experts and critics suggesting that the technology will only be fit for commercial use by 2030, Maharashtra CM Devendra Fadnis signed an MoU with Virgin Hyperloop One to carry out feasibility tests to build the Mumbai-Pune hyperloop.

In the real estate sector most projects, particularly residential ones are planned around proposed and upcoming infrastructure projects. Personally I have been involved in discussions where developers have been faced with questions from homebuyers regarding such infrastructure. One of the most discussed has been the Ring Road around which numerous projects have been planned or are coming up. Pune has the potential to be one of the top cities of India, especially as the smart projects start yielding sustainable benefits and the metro project and airport expansion reaches completion, however, better implementation and focus on adhering to timelines is required. Meanwhile, Pune continues to grow beyond most pundits' ability to predict.

By Sachin Goregaoker
Director, GA design

Construction forms a major part of a city and therefore it impacts upon the environment in various ways. Green and Sustainable are the buzzwords in the building and construction industry today. In order to move towards ecologically sustainable and green buildings, we must first understand how a building can affect the environment.

Construction activity can cause significant change to the surface of land during excavation by polluting the surroundings with dust and noise. The tools and resources used by labourers and even the diesel used by excavators and trucks can harm the environment. Moreover, according to research, building materials like aluminium, steel and concrete emit large quantities of CO2 which clearly is a harmful element. Chemicals used during construction can be harmful to the labourers as well as surrounding environment, if not handled correctly. Waste-water and the release of oils and compounds during construction if discharged safely and correctly can limit the negative impact on the surroundings.

Architects, builders and building owners have to seek a balance between conflicting considerations such as aesthetics, comfort, timelines, effective construction, regional building guidelines, costs and profits. Environmental impact is an added challenge and it should be considered in the initial design process to limit additional costs and resources. Fortunately for us, the incredible technological advancement in this century has made it possible for us to move towards sustainable architecture and healthy living. The IGBC (Indian Green Building Council) and other such bodies carry out various architectural design and technical analyses and a report is generated which incorporates the intent, methodology

Why Go Green?



Solar energy has become a very important concept.

and outcome of green buildings. A points-based rating is given to the building on the basis of the documented report and this provides an incentive to builders and architects to ensure that their projects contribute to sustainable architecture.

Green buildings focus on energy consumption as it is the single largest way to negatively impact the environment. Energy consumption can be effectively reduced by improving insulation of a building to prevent heat dissipation, increasing ventilation to remove polluted air and installing solar equipment for heating purposes.

The use of sustainable recycled building materials is cost-effective as well as environment-friendly. Wood, stone, metal can be reclaimed from demolition sites and re-cycled and reused during new construction. Green materials like bamboo and cork can be incorporated in building interiors.

Waste management is another way of contributing to sustainable architecture. It not only includes effective waste disposal, but also on-site recycling of as many materials as possible. Waste disposal can be identified in paper, plastic, concrete and metal form, to be recycled and reused effectively.

Storm-water management can effectively reduce the negative impact of the building. It has to be considered during the design process of a project and incorporated during the initial stages of construction.

As a result of this awareness, architects, builders and the general public are now catching on to the importance of green buildings. The green building movement has gradually progressed from a focus on reducing water and energy usage, to a more holistic approach that understands how buildings affect the people residing in them, with a goal of making our environment and lifestyles healthier for people.

'Designing Sustainable Buildings and the Need for Green Architecture'

By Amin Nayyar,
Founder and CEO of ANA Design

Every year in winter, my kids stop playing, a couple of elderly neighbor's are hospitalized and a pall of smog disrupts flights. The winter fog and chill doesn't make for a merry Christmas anymore and we ourselves are to blame.

The frenzy of "development" we have seen in the past few years coupled with a car driven commute has given us the dubious distinction of living in one of the most polluted countries in the world.

The concept of sustainability, quite literally, is now about the very sustainability of human life as we know it. A mix of technology, optimization and lifestyle will define the new and hopefully healthy future for our population. Apart from an environment friendly master plan, which cuts down on commute, and encourages sustainable neighborhoods, the engineering and design aspects of each building and its components is critical to a healthy living.

Our buildings must respond to the climate, given the extremely tiny lots that we have for house design; insulation and air tightness are key concepts that need to be stressed. Usage of air-conditioning, and thereby of electricity, can drop up to 20% simply by ensuring tight fitting doors and windows. A well-insulated roof and high performance glass can further reduce electricity consumption by another 15%.

The material we use, especially, processed ply woods, paints and fabrics may also contribute to extreme indoor pollutants, and also, carcinogens. Ensuring low or zero VOC in paints and plywood not only improve indoor air quality, but also ensure a more sustainable way of timber and material procurement and compliance to environmental best practices.

Technology is now available that can easily interconnect various home appliances such as air conditioners, lighting etc. through a smartphone interface. By having the building assessed for energy usage, and automating the process of lighting and comfort conditioning, massive amounts of energy can be saved over the lifecycle of a building. Using BIM as a full building lifecycle tool allows us today, to predict the most optimum material utilization, bring down cost and latent energy, and allow for a healthier, better lit and more optimized building.

The introduction of BMS in the building design can help track and optimize the utilization of water and electricity, as well as help optimize and manage the waste being generated. Technology is available where all the wastewater being generated, i.e. kitchens and toilets can be treated and re-used for flushing and gardening. This reduces the extraction of ground water as well as the energy and water demand from water reservoirs and supply systems. In fact, with improved water proofing, the idea of roof top kitchen gardens should be mandated to provide fresh and organic vegetables, fruit, and even honey.

Landscaping design is an important factor in making a place "liveable" by specifying local plants suited to a particular climate, and requiring lesser maintenance and upkeep, it is possible to reclaim some of the lost green cover.

Vertical Walls – The New-age Gardens

By Hemil Parikh
Founder, Elysium Abodes LLP

Sustainability being the need of the hour, modern landscaping has become a hot trend these days. Nothing offers you more joy than the idea of being surrounded by the aura of blissful gardens and greenery.

In today's time of burgeoning high-rises, the space available for your own private garden is restricted. Increasing concretization in urban areas barely lets you see any greenery around. Sustainability and green living are buzzwords of the modern-day world. As concrete landscapes continue to develop, more and more people are understanding the significance of greenery. While people are looking to implement more and more choices which are ecologically beneficial, an extensive and appealing way of incorporating nature in households is by making green walls a part of your home.

Gardens in modern times come with a lot of smart



variations like indoor gardens, vertical gardens, speciality gardens, woodland garden's and water gardens to name a few. An innovative, yet environment-friendly solution to these decreasing horizontal spaces is a 'vertical garden' which, as the name recommends, offers the choice of having greenery growing vertically straight up. In simple terms, vertical gardens are living walls - free standing, or as a

part of the building edifices - which are covered with flora or foliage anything from grass to plants or herbs and even vegetables.

One of the biggest promoters of green design and sustainability, the vertical gardens are today the most popular gardens commonly seen either in homes or in commercial and hospitality segments. A vertical garden is nothing but a

green wall that is partially or completely covered with green plants. Green walls are a good option to contemplate if you have space restrictions, yet want greenery around which certainly adds to the aesthetic value. These gardens can be used both indoors or outdoors and can be either free-standing or attached to the wall.

These new and innovative gardens work well if you have a bare wall. You can grow these vertical planters on the wall and see the wonders for yourself. Vertical gardens will only grow vertically, thus leaving a lot of space for horizontal growth in the gardens. All you have to do is to choose a wall on which you want the green plantations to grow and build a frame with a plastic sheet where you want your plants to be placed. Since these gardens need to be watered regularly, many vertical gardens come with an in-built irrigation system. After you have chosen the plants you want to see in your vertical gardens, you can start inserting them in the vertical wall.