



Magarpatta City's
Sustainability Excellence Report 2017-18

REFLECTING ON OUR LEGACY
TO CREATE FUTURE CITIES

AN IDEA CALLED



MAGARPATTA
CITY

PEOPLE. PURPOSE. PROSPERITY.

ABOUT THE REPORT

This is the first Sustainability Report of **Magarpatta Township Development & Construction Company Limited (MTDCCL)**. The Report reflects Magarpatta City's commitment and achievements to foster leadership in sustainability and engage with stakeholders along its supply chain and local communities. Magarpatta City's responsible business practices are depicted across the economic, social and environmental parameters of the **Global Reporting Initiative (GRI) Standards 2016**. The GRI Standards Index is available in the GRI Standards Content Index section of the report. The Report is prepared 'in accordance' with the core option of GRI Standards 2016. The report boundary is Magarpatta City, located in Pune, Maharashtra for the period April 2017 – March 2018. The baseline year is 2015-16.

The information in the Economic Performance section has been reported in reference with the Company's Annual Report 2017-18. These financial statements in the Annual Report have been prepared in accordance with the Indian Accounting Standards (Ind AS) notified under Section 133 of the Companies Act, 2013 (the Act) [Companies (Indian Accounting Standards) Rules, 2015, as amended by notification dated March 31, 2017] and other relevant provisions of the Act. The Annual Report has been audited by independent external auditors - M/s SDB & Company Chartered Accountants. The data and information on environment and social parameters are derived from official Magarpatta City documents.

APPROACH AND COLLABORATION

The **Energy and Resources Institute (TERI)**¹, New Delhi was engaged to analyse the data and information, develop the strategic intent and design a roadmap for implementation, while the **Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA)**² - Sustainability Desk acted as the advisor and coordinator to this Report. Together with a cross-functional team of Magarpatta City, both the teams worked with the data, which is being captured through our systems to facilitate our decisions in making sustainable efforts for better lifecycle impact and balanced life in Magarpatta City.

TERI has evaluated the calculation methodologies adopted and analysed results to ensure that the Report adheres to the Principles of Report Contents viz. Stakeholder Inclusiveness, Sustainability Context, Materiality and Completeness; and the Principles of Report Quality viz. Balance, Comparability, Accuracy, Timeliness, Clarity and Reliability. MCCIA's 'Sustainability Desk' worked closely with the cross-functional team of Magarpatta City and experts of TERI for assessment of materiality, SROI etc.

¹TERI, based in India, is a multi-disciplinary institute that has a strong sustainability orientation with more than 40 years of experience in energy, environment and sustainable development, and has a team of highly qualified research professionals with diverse backgrounds, involved with a variety of projects on sustainable habitat and sustainability strategy development.

²MCCIA's 'Sustainability Desk' facilitates, engages and helps industry members to adopt sustainability activities within their facility to grow sustainably and to improve their triple bottom line performance.

REPORT DEVELOPMENT TEAM



The Energy and Resources Institute



The Magarpatta team was led by **Mr. Satish Magar, Managing Director.**

The TERI team was led by **Mr. Arupendra Mullick, VP – Council for Business Sustainability.**

The MCCIA team was led by **Mr. Chetankumar Adhar Sangole, Head – Sustainability Desk.**

CONTACT INFORMATION

The Sustainability Report and additional information on Magarpatta City's philosophy and journey on sustainability are available on the company's website: <http://www.magarpattacity.com/>. The point of contact for the information in this report is Mr. Ishaan Magar, Management Representative. Any query or suggestions, with respect to this report, may be addressed to **Mr. Ishaan Magar**, Management Representative at the registered office address or via e-mail to: sustainability@magarpattacity.com.



Mr. Satish Magar
MD,
MAGARPATTA CITY

Message from the MD's desk

An Idea Called Magarpatta City

We have always taken pride in taking measures that promote positive ESG - Environmental performance, Social cause, and Governance (ESG) but we wanted to verify our own efforts and also wanted to communicate its impact to investors and other stakeholders in a credible and verifiable way.

Hence, I am very pleased to present to you the inaugural Sustainability Report for Magarpatta City prepared using Global Reporting Institute (GRI) Standards. These standards are the first and most widely used global standards for Sustainability Reporting.

Our country is rapidly urbanising. As per UN's World Urbanisation Prospects 2018 report, about 34% of India lives in cities and by 2050, another 18% would be added to cities. That means Urban Population will be 52% in India by 2050. Most of this urbanisation will come around the periphery of the existing Cities - an area that is mostly farmlands today. This creates the challenge of creating sustainable cities as well as developing and growing in a participative and equitable manner for all. The Government of India has acknowledged the trend of migration and launched 100 Smart City projects. The vision and mission of Magarpatta City was aligned with the Sustainable and Future city concept 20 years ago.

Our values demonstrated our commitment towards developing a sustainable futuristic city. The efforts to create secure and safe integrated community living was incepted and designed on the concept of walk-to-work and walk-to-school. Magarpatta City is based on the ideology of co-existence. **The green campus of the city is carbon positive.** The self-sustained city, in terms of waste and energy management, adds great value to the city infrastructure. The smart city solutions like mobile applications for community connections, CCTV and sensor-based security systems are deployed with the help of new technology.

We are committed towards the environment and hence we have implemented systems to ensure best practices in waste management, landscaping & biodiversity, and energy management. We strive to harness renewable energy sources through solar water heating and now Photovoltaic system to ensure excellent energy management system, which has low impact on emissions. The green cover acting as carbon-absorbing agent is one of the key reasons for carbon positive environment in Magarpatta City. Though, we are carbon positive, we will be continuing our efforts to enhance the carbon footprint score. The waste is also considered as wealth and hence we are striving to generate the wealth from waste.

The residents of Magarpatta City are our brand ambassadors. Our ideas are aimed towards enhancing these experiences of community connect. The technology based security and safety solution and the state of art infrastructure have been created to sustain the community delight.

The model of making the son of the soil as sustained owners have been replicated in all the other projects of the organization. It is the people who make the community and the community that makes the city alive. The work places, schools, market places along with many allied services create tremendous opportunities for exponential growth in economy, which in turn, positively impacts the lowest strata of the society. The sustainable and future cities will have holistic impact by making all stakeholders have a destined purpose that will finally lead to prosperity.

For us, the sustainability and equitable growth has been a 20-year journey and this report provides us with a language to communicate our efforts to our various internal and external stakeholders. I would also like to thank the various stakeholders that have contributed to our journey and have contributed in the making of this report.

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INTRODUCING MAGARPATTA CITY



HISTORY AND LEGACY

FARMING COMMUNITIES AND URBANIZATION

The farmers' and the people at the bottom of the pyramid in our country have no collective identity- their voice often being cajoled by the men in power, their destiny passing through the convoluted streets of those who have been elected by them and the governance in all its might subsidizing mockery than burden.

But this story was to end differently. The wings of urbanization were rattling the corridors of Pune and so did the acquisition of agriculture land. In the name of development, the periphery around those lands began to get fragmented into small plots which in turn was getting sold to developers and builders. As the pay-out was large, an obvious rise in the economic status was observed by the beneficiaries. They began with spending it on unproductive assets in excess such as cars and lavish weddings. Soon it was followed by immoral practices giving rise to social problems. This led to the deterioration of their wealth and ultimately they were found to be working as house maids, drivers and security guards. Thus began the quest for solving this riddle of development fuelled by greed of the developers v/s the lands and future of farmers.

“ A combination of unique factors, which are not easy to come by in the Indian agrarian countryside, made the transition from sugar cooperatives to shareholding companies in land possible in Magarpatta City. These variables include the consolidated pattern of land ownership, the past history of collective action, and a politically and economically savvy leader in Mr. Satish Magar. ”

A study in the Department of Architecture, Landscape Architecture and Urban Planning, Harvard University



SETTING UP THE DEVELOPMENT COMPANY - MAGARPATTA TOWNSHIP DEVELOPMENT AND CONSTRUCTION COMPANY LIMITED

Steered by the vision of Mr. Satish Magar, an out of the box solution was created. The basis of the solution being that if urbanization is inexorable, whether the natives can become developers of their own land and operate it with a purpose rather than falling prey to their own imprudence. And thus, the idea of setting up of Magarpatta Township Development & Construction Company was conceived.

“ Magarpatta Township is an innovative idea which seems to meet a positive response in Pune's housing market. It is based on the laudable idea that former farmers should benefit of urbanization processes as owners and shareholders of the development company. ”

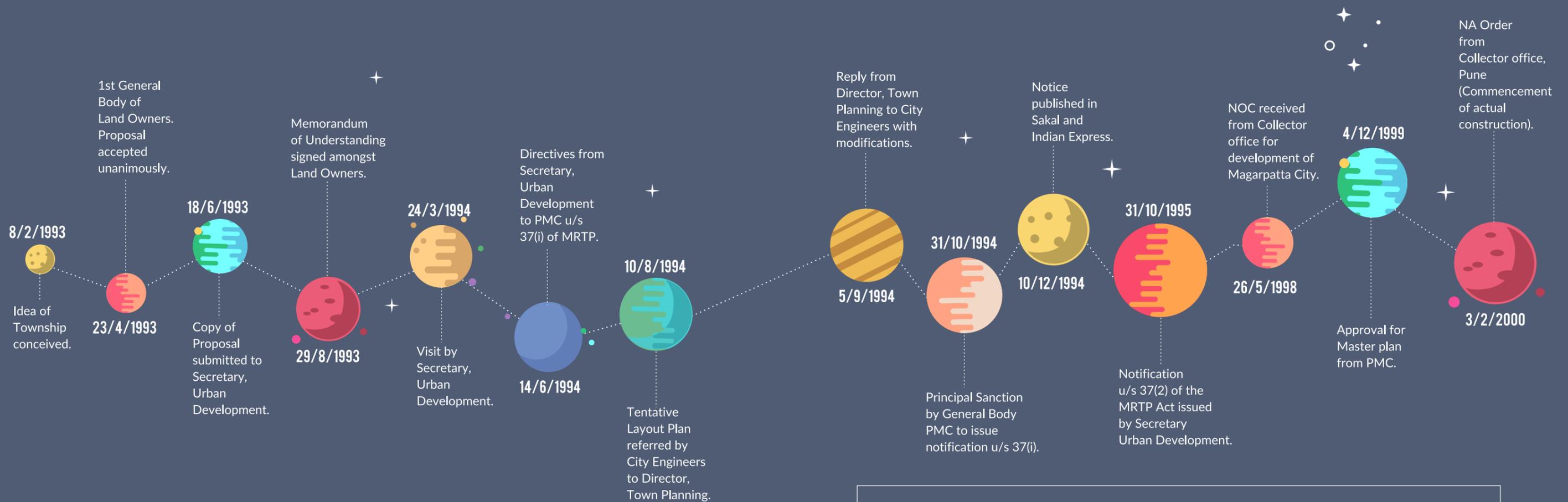
A report by GIZ-DAAD Summer School

The foremost part here was to convince his fellow agrarians' landowners for pooling the land for the construction and then lobbying out with the complex mechanisms and hierarchies of different government bodies. The process of convincing the former went smooth due to the existing social cohesion and harmony between the farmer community and the trust they have on their leader. But this was not a standalone job. A lot of thinking and planning at the backstage was done to make it robust and sustainable. Their mission was to create an integrated township incorporating a healthy balance of clean environment, good living standards, modern education system, community engagement, security and state of the art working conditions. For the same, subject experts were also consulted in tandem to build just not a township but a model that could be replicated via the domain of research, finance and construction for creating more sustainable communities across the different geographies of the nation. These experts and internal team envisaged the DNA of the township based on the **five forces of nature** along with plantations based on the nature's cycles. Thus, the idea of Rutu Chakra, to have a diverse range of colourful species throughout the year, was born.





THE JOURNEY BEHIND 'AN IDEA CALLED MAGARPATTA CITY'



“ The reason Magarpatta City is interesting is that it is an attempt to produce a socially equitable form of urban development. It is indeed a commendable achievement that the Magar community has accomplished by building an integrated township on 400 acres of farmland. Not only has it been financially profitable, it has also suggested that an alternative model of development is possible. ”

Research by Urban Regional Planning University of Michigan, in support with Foundation of Urban and Regional Studies

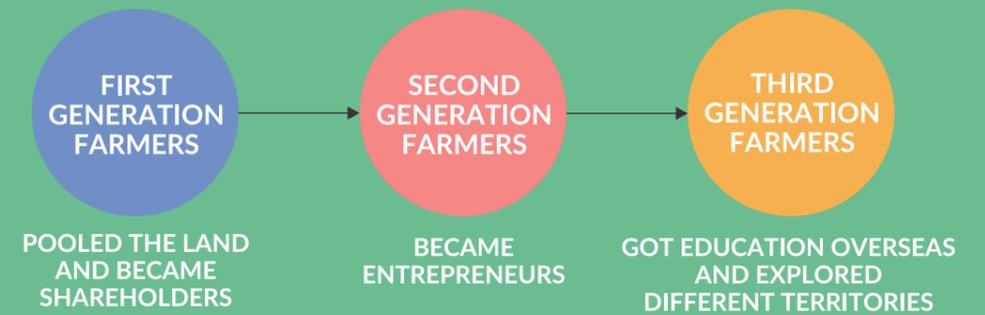


BENEFITS TO FARMERS



Magarpatta City is one the finest examples of inclusive development as the farmers who became the beneficiaries continue to reap the benefits in the long run as the revenue sharing model allowed them to do so. All land-owners are entitled to receive a percentage of money with respect to their proportion of land they owned once an apartment gets sold. Also, the point was not to repeat the mistake of depleting money without purpose. Thus, around 250 farmers turned entrepreneurs were trained in the manufacturing of construction material, landscaping and building roads making them self-reliant and gave them a social standing in the society. The third source of revenue is from Cybercity IT Park, owned by MTDCCL and leased to various organizations, ensuring a regular income to the farmers.

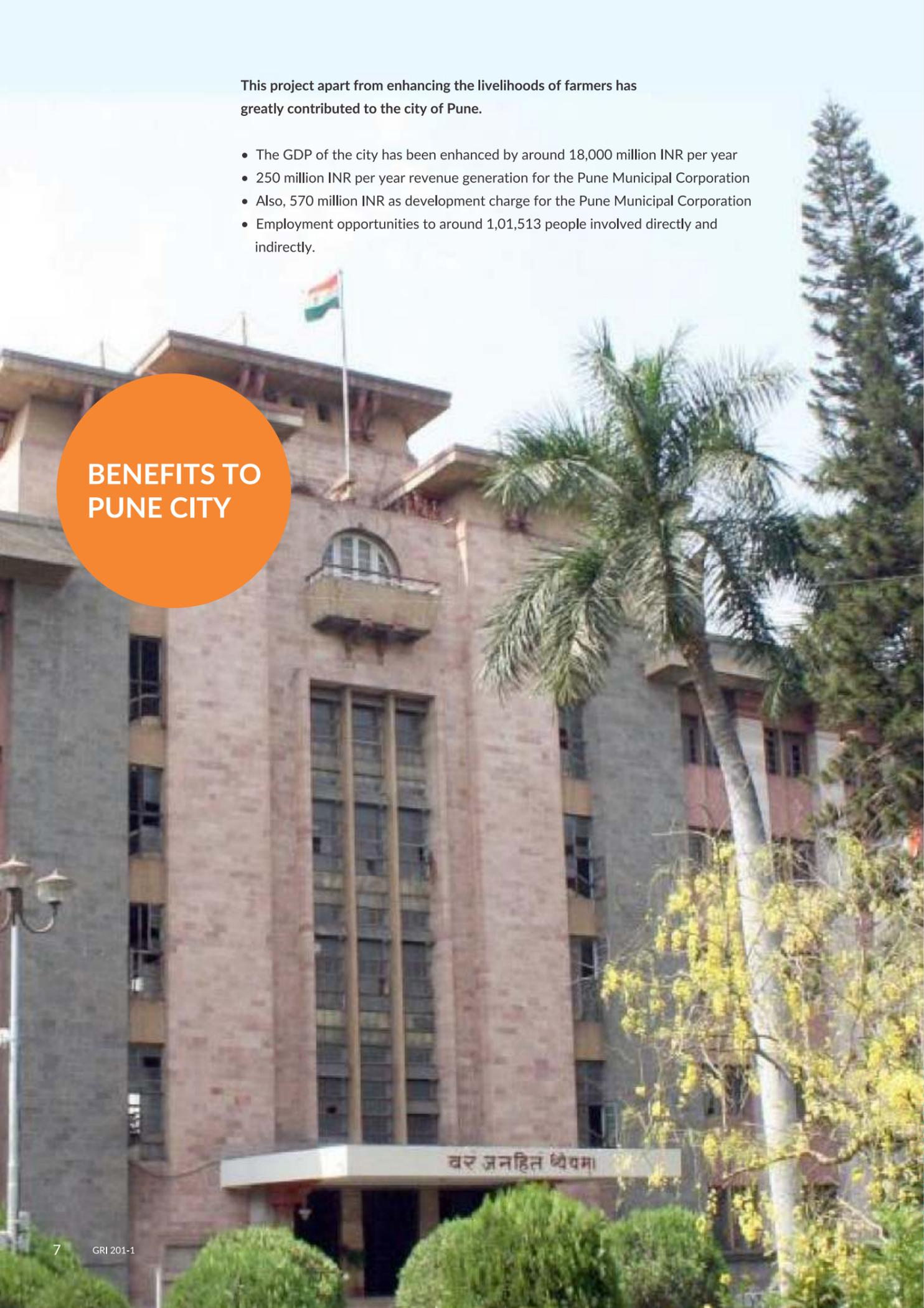
It has been very aptly termed as **FDI (Farmer Direct Investment)** as the impact can be observed not just in his lifetime but across the generations: the first generation farmers pooled the land and became the shareholders; the second generation showed more grit and turned entrepreneurs and in the process made others also self-reliant, while the third generation equipped themselves by getting education overseas and are exploring different territories. Thus, this model provided a perpetual benefit to the farmers.



This project apart from enhancing the livelihoods of farmers has greatly contributed to the city of Pune.

- The GDP of the city has been enhanced by around 18,000 million INR per year
- 250 million INR per year revenue generation for the Pune Municipal Corporation
- Also, 570 million INR as development charge for the Pune Municipal Corporation
- Employment opportunities to around 1,01,513 people involved directly and indirectly.

BENEFITS TO PUNE CITY



BENEFITS TO RESIDENTS

Magarpatta City is not unique only from its land acquisition model or by the five forces of nature approach derived in design, but for also being a social hub being fabricated by various channels such as Culture, Sports etc. and helping in nurturing engagements. It's a residential society of 29,159 people providing tangible and intangible benefits to the community through various engagements and scope not limited to the boundaries of Magarpatta City. The aesthetics part also generates revenue through film and ad shoots and Magarpatta City reserves this amount for the benefit of the community.



BENEFITS TO COMPANIES IN CYBERCITY

- First IT Park in India with a walk to work concept.
- Robust physical and social infrastructure.
- Access to 25 acre Aditi Garden



**YOUNG TEAM
 AT WORK:
 MAGARPATTA CITY
 TODAY**



Magarpatta Township Development & Construction Company Limited is located in India and incorporated under the Companies Act, 1956 on 21st October, 1994. The registered office of the company is located at Megaspaces, 13, Solapur Bazar Road, off East Street, Camp, Pune 411001. The company is engaged in the field of leasing of space & related services thereto, infrastructure development, designing, constructing & development of integrated townships.



VISION

To be the pioneers in enhancing lifestyles of our customers and stakeholders by creating Integrated Sustainable Townships through an inclusive growth model of partnering with the landowners.



MISSION

Our mission is to create a new way of life for the networked society of the new millennium with emphasis on proper environmental control, good living standards, a modern educational systems and state-of-the-art working conditions with total security.



VALUES

The values act as a binding element and benefit in developing a long term relationship with customers and stakeholders through the pillars of trust, positive work culture, adherence to statutory compliance and market reputation. The guidelines related to these above pillars are very well enveloped to protect and promote the fabric of human capital at Magarpatta City.



YOUNG AND DIVERSE TEAM

Magarpatta City is proud of its motivated workforce in achieving the objectives as stated in the mission statement vis-a-vis challenging the status-quo with their vigour. They are the ultimate drivers in delivering value to the organization and its stakeholders through their skills, talent and determination. This has shaped up into the core elements of work and ethics of the people as it is being institutionalized in descending hierarchy in the organization.



AGE DIVERSITY

The diversity in the age of the employees helps in bringing experience on one side and enthusiasm on the other. While the diversity in gender at Magarpatta City helps to inject a novel dimension – necessary for looking beyond the obvious. Magarpatta City is proud to have both of these components as they help in achieving the goal of inclusive development.

Age Group	No. of Employees			Percentage of Total Employees
	2015-16	2016-17	2017-18	
18-30	182	212	225	19.22
31-40	417	434	435	39.95
41-50	331	338	329	31.03
51- Above	94	110	112	9.81
Total	1,024	1,094	1,101	100.00

GENDER DIVERSITY

Women constitute 37 % of the total workforce.

Gender	No. of Employees			Percentage of Total Employees
	2015-16	2016-17	2017-18	
Female	387	396	397	37
Male	637	698	704	63
Total	1,024	1,094	1,101	100

COMPETENCY BUILDING FOR BUSINESS EXCELLENCE

The challenge does not lie in just finding the right talent but also in retaining and nurturing that talent. Magarpatta City, from its roots, laid down the foundations of competency building for achieving business excellence throughout its lifecycle.

The foremost step in this direction was imparting training and developing necessary skill set to perform the job. Since Magarpatta City has both residents and working people in their vicinity, the scope of training includes operations, safety and security of the residents along with the employees.

TRAINING RECORD - MAGARPATTA CITY										
Sr. No.	Type of Training Imparted	No. of Attendees			No. of Man Hours			No. of Man Days		
		2015-16	2016-17	2017-18	2015-16	2016-17	2017-18	2015-16	2016-17	2017-18
1	Cybercity Training On Disaster Management*	392	420	581	784	840	1162	98	105	145
2	On Job training details of Security Guards	889	793	939	14,224	12,688	15,024	1,778	1,586	1,878
3	Training to Magarpatta City Employees	203	528	358	1,624	4,224	2,864	203	528	358
4	Training on Fire Fighting	678	763	864	1,355	1,526	1,728	170	191	216
	Total	2,162	2,504	2,742	17,987	19,278	20,778	2,249	2,410	2,597

*Basic HVAC, Safety, Operation of Chillers, Statutory Compliance etc.

In order to achieve business excellence, it is necessary that training should not be a checklist affair. It should continuously evolve and in lieu of that Management Development Programme was launched. The purpose was twin fold:

1. To increase the capacity of existing employees for shouldering more responsibilities, and in that process
2. Evolve them such that they and their work ethics become an example to emulate

Year	No. of Trainings	Approach	Benefits/Outcomes
2015-16	23	Self-assessment questionnaires	Improvement in efficiency, effectiveness, self-confidence, inter-department communication
2016-17	22	Reference tutorials	

“ First of all, I like to mention that the working environment is very supportive and friendly. The functional freedom in decision making is also encouraged by senior management. The training module imparted helped me to learn and adapt the latest technologies. And the performance management tool used is effective as deserving candidates got the appropriate rewards. It has also improved individual as well as team performances.”

- P U PATIL, ELECTRIC DEPARTMENT

SUPPLY CHAIN AND SUSTAINABILITY AT MAGARPATTA CITY

The dimension of sustainability is not limited to the incorporation of environmental and social elements in the organization. Along with practising those elements, it is therefore required to make it an inherent characteristic independent of the market forces. Magarpatta City, in this quest, has also stretched out to its suppliers for imbibing those fundamentals in their vision, approach and deliverables.

The following are the codes to be adhered by each supplier of Magarpatta City:

LABOUR AND HUMAN RIGHTS

- No employment of child labour.
- Safety of the personnel is obligatory for the vendors. They must provide appropriate equipment and training before the commencement of the operations.

COMPLIANCE

- Meeting the required standards such as quality management, OHSAS etc. along with necessary regulations laid by the government.

AVOIDANCE OF CONFLICT OF INTEREST

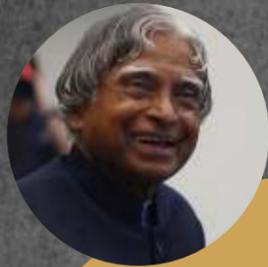
- Conflict of Interest to be avoided: Any relation of supplier/(s) with the Officers/Employers of the organization is prohibited.

ANTI-CORRUPTION CODE

- Bribery, extortion or any other form of corruption is totally unacceptable and should be averted.

FAIR COMPENSATION

- All vendors are obliged to follow the minimum wages as per the laws.



“As we realize sustainable development models and create economic entities in the rural region, there needs to be a mechanism which can ensure a win-win situation for both the entrepreneurs and the local community. Magarpatta City, a 430-acre area on the outskirts of Pune in the state of Maharashtra, is an excellent example of the need to involve the community as a shareholder and partner in development.”

-A.P.J. Abdul Kalam in his book
 Target 3 Billion



LIST OF AWARDS AND RECOGNITION RECEIVED BY MAGARPATTA CITY

- 'SWACHA PURASKAR' by PMC - 2nd prize on 2nd October, 2016
- 'MAHARASHTRIAN OF THE YEAR' for best infrastructure - Award by Lokmat on 1st April, 2016
- EDUCATION SECTOR PRESENTATION given at Georgia Tech University, Atlanta, 2010
- WCRC AWARD 2014 - India's Most Promising Brand 2013-14 in the Real Estate category
- CNBC AWAAZ REAL ESTATE AWARD 2012 - Best Integrated Project
- CNBC AWAAZ REAL ESTATE AWARD 2012 - Greenest Project
- CNBC AWAAZ REAL ESTATE AWARD 2012 - Most Consumer Friendly Developer
- ZEE BUSINESS RICS REAL ESTATE AWARD - 29th Sept, 2011 - Best Integrated Township

AWARDS

- SMART LIVING AWARDS 2010 - Best Integrated Township
- EMPI INDIAN INNOVATION AWARD in 2009 by Indian Express
- REALTY PLUS EXCELLENCE AWARD in 2009 for Cybercity
- CNBC AWAAZ - CRISIL - CREDAI REAL ESTATE AWARD for best residential property above 5 lakh sq. ft in 2009
- Magarpatta City has won accolade in the year 2008 at SYDNEY WORLD CONGRESS OF METROPOLIS
- Magarpatta City is in LIMCA BOOK OF RECORDS for having largest solar water heating system in 2008
- BEST URBAN DEVELOPMENT awarded by GIREM in Sept, 2008
- TOWNSHIP OF THE YEAR 2006 by Accommodation Times
- 1ST PRIZE IN MAHARASHTRA IT AWARDS given by Govt. of Maharashtra for Cybercity in 2004
- Magarpatta City is amongst the TOP 10 SUCCESS STORIES OF THE STATE declared in Infrastructure Summit 2002 by MEDC

GOVERNANCE

Magarpatta Township Development & Construction Company Limited has a robust governance structure in place. The board comprises of 12 directors including one woman director and are professionals from diverse fields, bringing their vast experience and domain knowledge in framing strategies for the future. There were no changes in directors and Key Managerial Personnel (KMP) during the financial year ended on 31st March 2018. The details of Directors and Key Managerial Personnel as on 31.03.2018 were as follows:

DIRECTORS NAME	DESIGNATION	DATE OF APPOINTMENT
Umesh Dattatray Magar	Whole-time Director	30/09/2014
Satish Dattatray Magar	Managing Director	30/09/2014
Dattatray Dhondo Magar	Director	21/10/1994
Maruti Hanumant Magar	Director	01/04/2004
Maloji Baburao Bhosale	Independent Director	01/08/2004
Chetan Vitthal Tupe	Director	01/08/2004
Mangesh Anandrao Tupe	Director	01/08/2004
Avinash Arjun Tupe	Director	01/08/2004
Nilesh Ashokrao Magar	Director	30/09/2009
Nandkumar Dnyanoba Magar	Independent Director	29/09/2011
Abasaheb Arjun Magar	Director	29/09/2011
Rekha Satish Magar	Director	01/01/2018

BOARD COMMITTEES

AUDIT COMMITTEE

The composition of the Audit Committee constituted by the Board in terms of Section 177 of the Companies Act, 2013 is enumerated on page 20 of the Annual Report 2017-18. The Audit Committee acts in accordance with the terms of reference specified by the Board of Directors (Section 177(4) of the Act). The Committee, comprising Non-Executive Directors, monitors systems and manages the financial and operational matters of the company. It also oversees the vigil mechanism and is obliged to take suitable action against the Directors or employees concerned, if necessary. The company has established a vigil mechanism, also called the Whistle Blower Policy, which is adopted by the Board of Directors and employees to report concerns about unethical behaviour, actual or suspected fraud or violation of the company's Code of Conduct or Ethics Policy.

NOMINATION AND REMUNERATION COMMITTEE

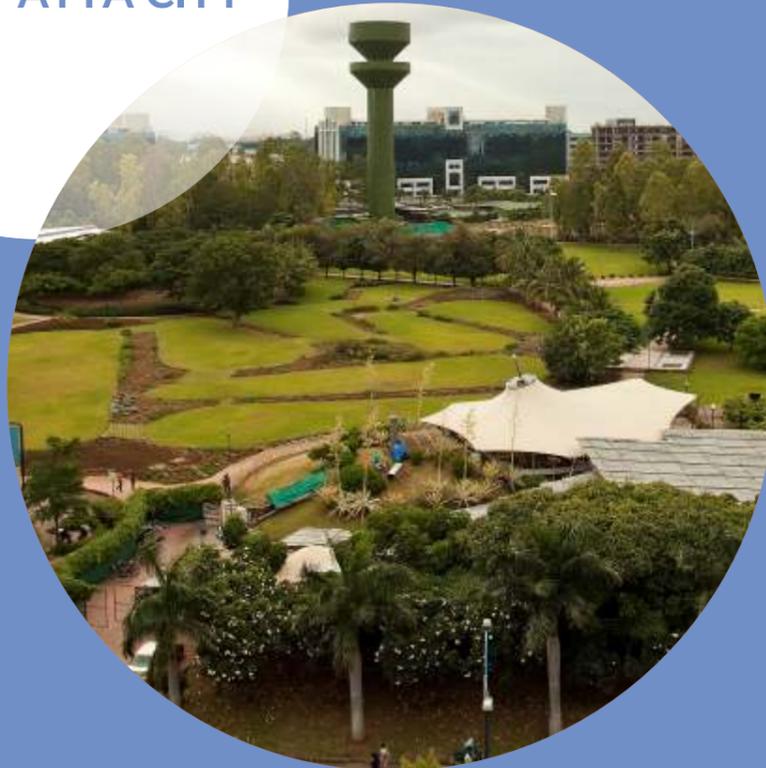
In terms of Section 178 of the Companies Act, 2013 and the Rules prescribed thereunder, the company has set up a Nomination and Remuneration Committee which has formulated criteria for determining qualifications, positive attributes and independence of a Director. For detailed information, refer to page 20 of Annual Report 2017-18.

CORPORATE SOCIAL RESPONSIBILITY (CSR)

The Board has constituted a Corporate Social Responsibility Committee in accordance with Section 135 of the Companies Act, 2013. The company is committed to operating in a socially responsible manner in terms of protecting the environment and conserving water resources and energy. A detailed annual report on CSR activities by the company, the expenditure and initiatives during the year 2016-17 are given on page 54 of the Annual Report 2017-18. (For details, please visit www.magarpattacity.com)



SUSTAINABILITY AT MAGARPATTA CITY



CONTEXT OF SUSTAINABILITY FOR MAGARPATTA CITY

In addition to introducing environmental protection practices, Magarpatta City has also included them as one of the important objectives in their policy framework. These have helped create a unique identify for Magarpatta City.



OXYGEN ZONE

Mist fountain at the entrance with very colourful lotus and lilies at the entry of Magarpatta City provides a soothing feeling to one and all. This water island accentuates one of the five key elements of nature along with the concept of Rutuchakra, the basis around which Magarpatta City is planned. This concept contributed towards a cooler, more pleasant and green surrounding. A big hoarding titled 'Welcome to the Oxygen Zone' is exhibited once you enter Magarpatta City. The message of nature preservation is one of the key components of Magarpatta City. Of the 430 acres area of the township, 30% is dedicated to open spaces and gardens. In Magarpatta City, lawns are extended over 17 lakh square feet with 25,000 trees and bushes occupying 12.39 lakh square feet of area.



During the design and planning stage, despite the Pune Municipal Corporation mandatory requirement for planting one tree in every 100 square meter, **Magarpatta City planted one tree for every 80 square meter area**. This resulted in the well-designed Aditi Garden recreating the experience of a mini forest within the city.

ECO-ETHICS BY MAGARPATTA CITY

Magarpatta City is laid with a vision of a progressive environmental outlook. This is unique for its pollution free and clean urban environment, where visitors are impressed by the look of the nature conservation practices. The design of Magarpatta City is based on five fundamental principles of human beings. These are Jal, Vayu, Pruthvi, Agni, Akash (Water, Wind, Earth, Fire and Sky). The five windows on the main entrance gate represent the Vedic message for the conservation of nature and environment.



JAL
(WATER)



PRUTHVI
(EARTH)



VAYU
(WIND)



AGNI
(FIRE)



AAKASH
(SKY)

GARBAGE COLLECTION AND DISPOSAL

Every day, garbage is collected and treated within Magarpatta City and very little waste is sent out to landfills. The waste is segregated at source and the bio-degradable waste is used to generate biogas which in turn is used for power generation and composting. The non-biodegradable waste is disposed safely and reusable scrap is sold.



BIOGAS PLANT

Magarpatta City has a 8-ton capacity bio-gas plant, where bio-degradable waste goes through a process to generate biogas. The biogas is used to generate power to operate a major percentage of street lights. Presently, this biogas per day generates 400-450 cubic meter gas, which is converted into over 270 units of electricity. **The amount of biogas generated is equivalent to 20 LPG cylinders of 14 kilograms capacity per day.**





SOLAR WATER HEATING AT MAGARPATTA CITY

More than 7,000 solar water heater system in Magarpatta City supply hot water to the residents. Magarpatta City's solar water heating system is Asia's largest solar system run by a single organisation. The solar system is installed on the terrace of all apartments, buildings, row houses and bungalows. The system is designed in such a way so as to blend it with gardens and landscapes of the project and personify the complex projected as Oxygen Zone by Magarpatta City. A total of 8,017 collectors are installed with a cumulative capacity of 10,00,000 LPD.

RECYCLING OF FLY ASH

Fly ash can be used as a part of replacement of cement and fine aggregates and is an inert material that saves energy required for the production of cement. Magarpatta City uses **1.11 lakh MT** of fly ash within all its constructions. In the City, fly ash bricks are manufactured mechanically by using cement with fly ash, which is better than traditional bricks because of pollution control, cost, breakage, wastage, evenness and finish. One more benefit to use these fly ash bricks is that it absorbs less water and gives a good surface finish.

SEWAGE TREATMENT PLANT

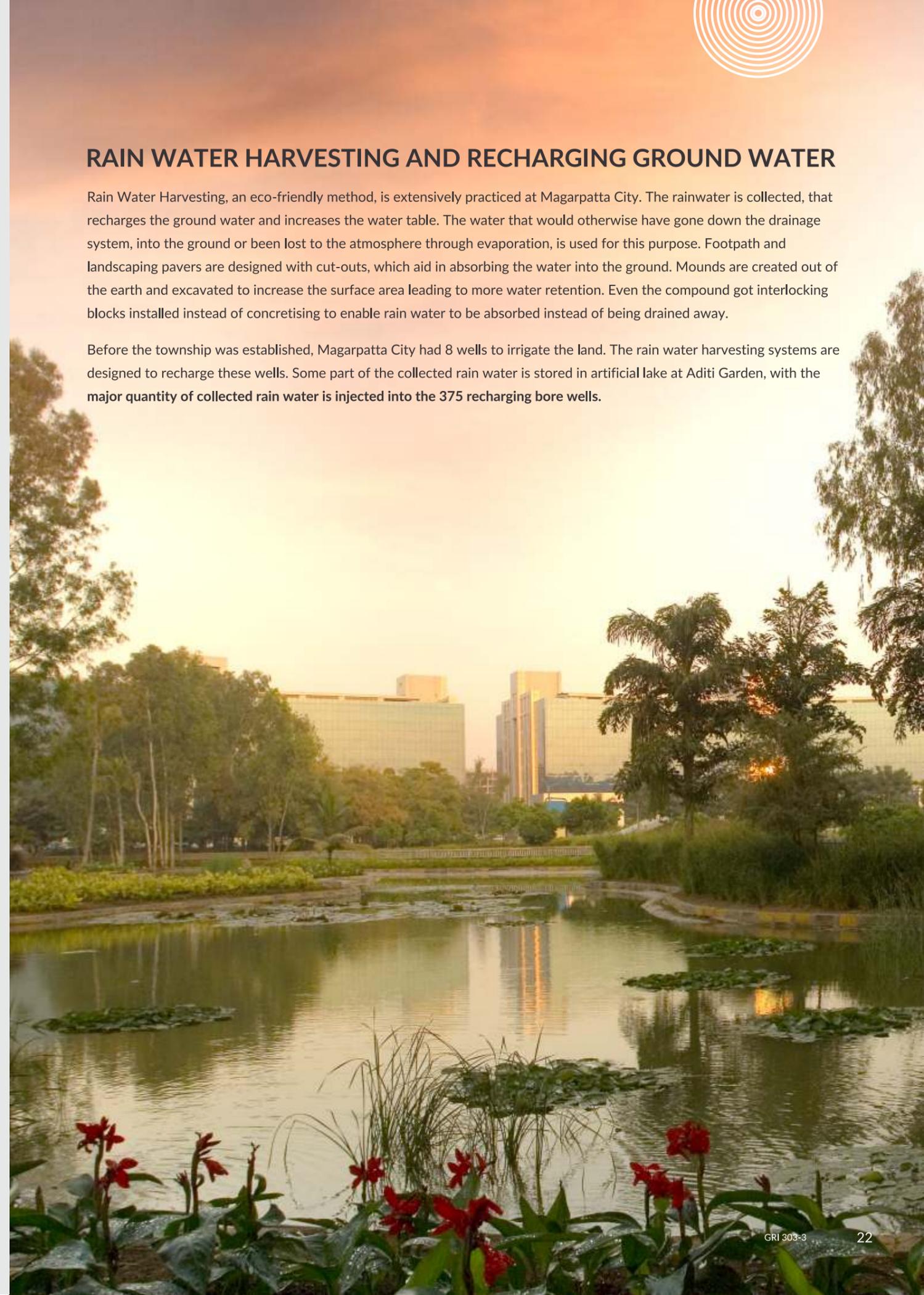
Waste water released by apartments, penthouses, row houses, Cybercity, latrines and pantry house, hotels and recreational units undergoes scientific treatment in Magarpatta City. Because of the STP, Magarpatta City, even in the summer season, has enough water to maintain greenery, landscaping and in cooling towers of the water-cooled air conditioned systems. There are four sewage treatment plants which treat **4.5 million litres** waste water per day. Treated water is recycled to gardening and cooling towers within Magarpatta City.



RAIN WATER HARVESTING AND RECHARGING GROUND WATER

Rain Water Harvesting, an eco-friendly method, is extensively practiced at Magarpatta City. The rainwater is collected, that recharges the ground water and increases the water table. The water that would otherwise have gone down the drainage system, into the ground or been lost to the atmosphere through evaporation, is used for this purpose. Footpath and landscaping pavers are designed with cut-outs, which aid in absorbing the water into the ground. Mounds are created out of the earth and excavated to increase the surface area leading to more water retention. Even the compound got interlocking blocks installed instead of concretising to enable rain water to be absorbed instead of being drained away.

Before the township was established, Magarpatta City had 8 wells to irrigate the land. The rain water harvesting systems are designed to recharge these wells. Some part of the collected rain water is stored in artificial lake at Aditi Garden, with the **major quantity of collected rain water is injected into the 375 recharging bore wells.**



**PASSIVE DESIGN
CONSIDERATIONS
TO REDUCE
ENERGY LOADS
OF BUILDINGS**

The parking below Cybercity is semi-raised to assist natural ventilation and to enable exhaust from vehicles to be removed naturally without the help of any mechanical aids. Also, a space between the glass facade and internal windows is provided in all the IT buildings to enable the heat to dissipate naturally by creating air insulation. The residential neighbourhoods are built on the traditional Puneri 'Wada' concept to enable natural light and breeze to flow through. Sincere attempts are made to provide cross ventilation in the apartments. All around the compound walls, thousands of trees and shrubs have been planted to reduce the impact of noise and dust from the roads.

MANAGING CARBON EMISSIONS IN MAGARPATTA CITY

Solar water system in Magarpatta City has the potential to save 48,000 units of electricity per day and 12,000 tonnes of carbon dioxide emission a year. This helps the customers who consume this water to save on their electricity bills.

Affirmative response by the Pune Municipal Corporation (PMC) gives total 10% rebate on property tax to the residents of the Magarpatta City. This includes 5% for solar water heating and remaining 5% for solid waste management.



**SUSTAINABILITY ORGANOGRAM
OF MAGARPATTA CITY**

Magarpatta City's commitment to foster leadership in sustainability and engage stakeholders along its supply chain is integral to the company's vision. With innovation at its core, Magarpatta City strives to practice the triple bottom line approach to sustainability – contributing both to sustainable development as well as economic success.

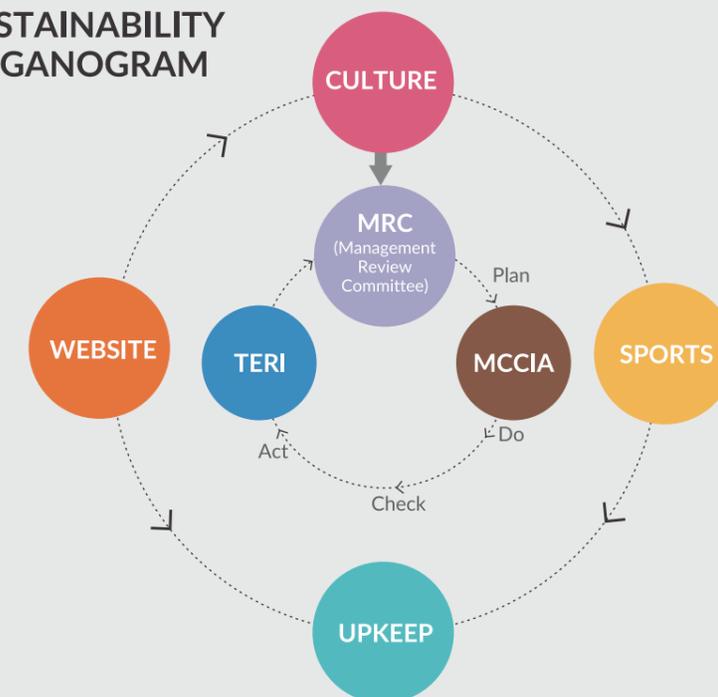
The City Council, with one representative for every 75 citizens, oversees the regular operations of the city. Alongside the council, a set of four committees – Culture, Sports, Upkeep and Website, provide feedback and inputs to improve the quality of services. The sustainability issues pertaining to Magarpatta City are regularly deliberated amongst the citizen representatives through these committees.

The Corporate Sustainability team of Magarpatta City is led by a Steering Committee constituting Mr. Satish Magar, MD (Chair), along with advisory role of TERI and MCCIA.

Alongside the monthly Management Review meetings, the Steering Committee deliberates, articulates and reviews performance of the sustainability framework for Magarpatta City in the context of its risk management framework and business continuity. The Steering Committee adopts a multi-disciplinary functional approach. The Committee comprises representatives from various functional departments: Safety and Security, Operations, Finance, Energy, HR, Procurement, Marketing, Environment and Landscaping. The team works in collaboration with pertinent internal and external stakeholders.

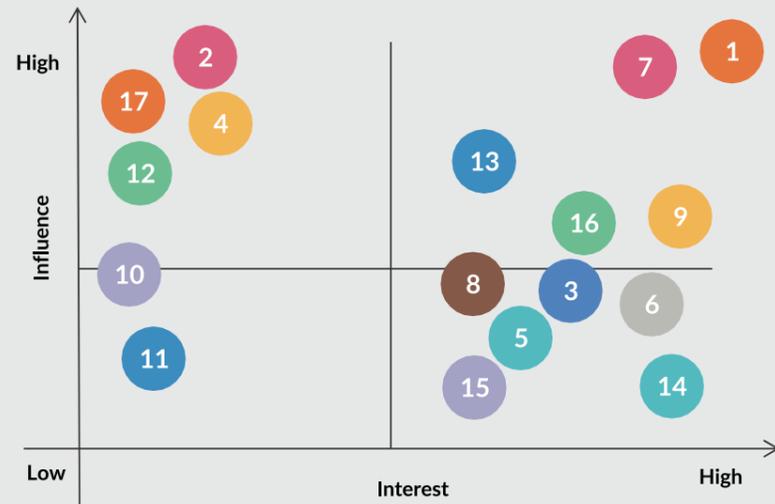
The committee adopts a plan-do-check-act approach to review progress against the significant area of action on sustainability by Magarpatta City. Thus, enabling a two-way communication with the citizens and the above mentioned committees

**SUSTAINABILITY
ORGANOGRAM**



STAKEHOLDER ENGAGEMENTS

Magarpatta City exhibits connected-living concept and thrives on active engagements with a diverse set of stakeholder groups. Periodically, the Sustainability Steering Committee reviews the process of mapping the influence and interest of the stakeholder groups. The following schematic represents the priority mapping of stakeholder groups of Magarpatta City.



-  1) Residents
-  2) Govt. - PMC
-  3) MPCB
-  4) MSEDCL
-  5) MNGL
-  6) Employees
-  7) Leased Org.
-  8) Service Providers/Suppliers
-  9) Shareholders
-  10) MH Police
-  11) Outside Communities
-  12) Fire Dept.
-  13) Media
-  14) Research & Academic Institutes
-  15) Financial Institutes
-  16) International Property Business Consultants
-  17) PWD



The priority stakeholder groups for Magarpatta City comprise Residents, Leased Organizations, Shareholders, Media and international property consultants.

In case of residents, the modes through which they are engaged is through City Council Meetings. This council comprises of various committees including cultural, sports, social & health, training, upkeep and website. There is one representative for every 75 persons who represents them and takes their concerns, opinions and suggestions with the management. The management also actively implements the changes through proper resources as budget mechanism is there, getting reviewed every financial year.

The following table demonstrates the engagement processes adopted by Magarpatta City for its priority stakeholder groups:

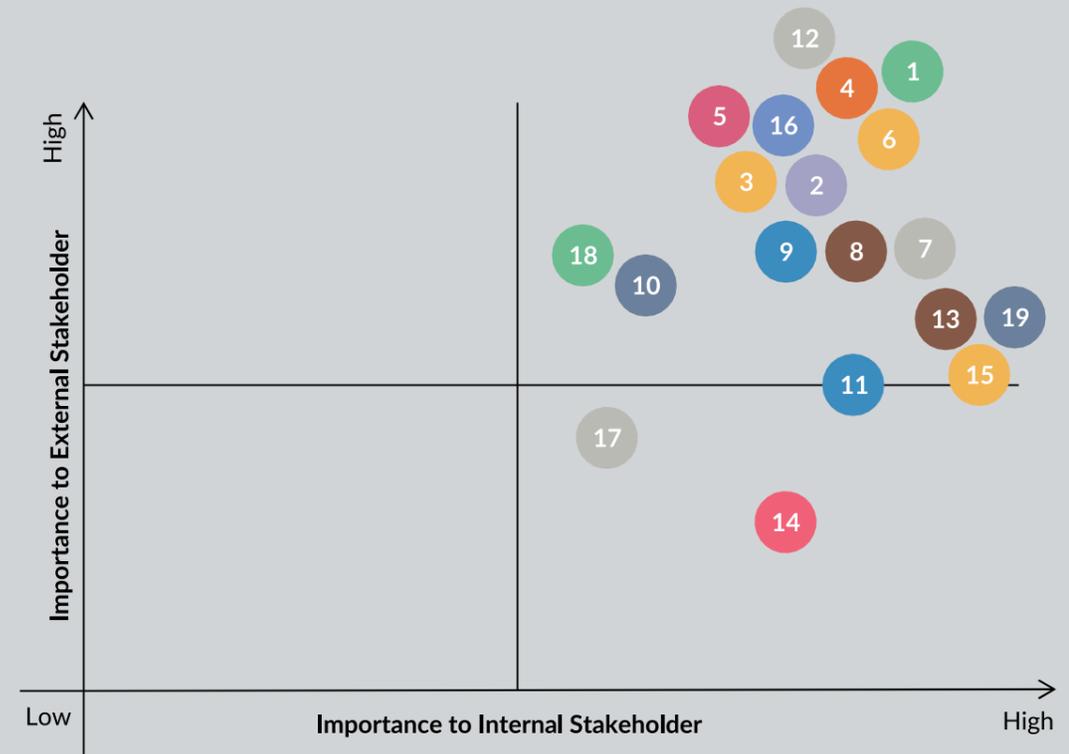
Name of Stakeholder	Significance	Vehicle for Engagements	Frequency
Residents	<ul style="list-style-type: none"> Invested Beneficiaries Brand Ambassadors 	<ul style="list-style-type: none"> City Council Meetings 	Bi-monthly
Leased Organizations	<ul style="list-style-type: none"> Indirect customers Major revenue generation of the organization 	<ul style="list-style-type: none"> Annual meeting between CMD & facility heads of the IT parks Customer Satisfaction Surveys Cybercity Sports 24*7 redressal helpdesk Mock drills(safety) 	<p>Annually</p> <p>Once in six months for each client</p>
Shareholders	<ul style="list-style-type: none"> Land pooling by farmers 	<ul style="list-style-type: none"> Annual get-together 	Annually
Media	<ul style="list-style-type: none"> Opinion makers Enhancing brand equity 	<ul style="list-style-type: none"> Strategic choice of partner 	Need based
IPCs (International Property Consultants)	<ul style="list-style-type: none"> Direct benefits to residents 	<ul style="list-style-type: none"> Telephones, e-mails and periodical updates 	Need based

MATERIALITY EVALUATION



Magarpatta City adopts a 5 STEPS PROCESS to determine the material issues. The Sustainability Steering Committee leads the process.

1. Business-wise identification of material topics
2. Engaging with the prioritised external as well as internal stakeholders relevant to business i.e. residents, shareholders, property consultancies etc.
3. Prioritisation and establishing co-relation of material topics on 'Importance as per external stakeholders' and 'Importance as per internal stakeholders'
4. Aligning it with the business vision and charting a sustainability agenda and actionable milestones
5. Appointment of executives responsible for mitigation of material topics, engagement of cross-functional teams to deliver solutions and implementation



1 AREA PLANNING	2 GARBAGE COLLECTION & STREET CLEANING	3 CITY AESTHETICS/ BIO DIVERSITY	4 COMMUNITY ENGAGEMENT
5 ROADS, TRAFFIC & MOBILITY	6 EMPLOYMENT (DIRECT & INDIRECT)	7 WASTE MANAGEMENT	8 WATER MANAGEMENT
9 ENERGY MANAGEMENT	10 HOUSEKEEPING & FACILITY MAINTENANCE	11 GREEN COVER & LANDSCAPING	12 SECURITY
13 HEALTH AND SAFETY	14 TRAINING, AWARENESS, SKILL DEVELOPMENT	15 COMPLIANCE	16 ETHICS, GOVERNANCE, CODE OF CONDUCT
17 BRANDING AND PROMOTION	18 COMMUNICATION	19 EMISSIONS	

THE MATERIALITY PROCESS IN MAGARPATTA CITY IS LINKED DIRECTLY WITH
 ITS CORE STRATEGY OF ITS FOUNDATION -

THE FIVE ELEMENTS OF NATURE.



JAL
(WATER)



PRUTHVI
(EARTH)



VAYU
(WIND)



AGNI
(FIRE)



AAKASH
(SKY)

These five pillars, in the context of Magarpatta City, play a vital role in the creation and preservation of the city. Integration of these elements vis-à-vis addressing the economic, environmental and social factors has not only led to a sustainable living model but they also bring indirect benefits through revenues, social-upliftment, creating harmony with nature, etc. These five pillars and domains falling under each of them directed towards the material issues are identified in the next few pages.

These issues, as stated in the table, are the outcome of the stakeholder engagement process and are also being highlighted in the materiality matrix.



Sr. No.	Material Topic	Importance to Business	Importance to External Stakeholders	Topic Boundary within Magarpatta City	Topic Boundary outside Magarpatta City
Corresponding Sustainability Pillar of Magarpatta City: PRITHVI					
1.	Area Planning	<ul style="list-style-type: none"> Value addition leading to improved living standards Customer satisfaction 	<ul style="list-style-type: none"> Ease of doing business 	YES	---
2.	Garbage Collection & Street Cleaning	<ul style="list-style-type: none"> For maintaining health, hygiene and sanitation Service agreement with the stakeholders 	<ul style="list-style-type: none"> Healthy living 	YES	---
3.	Employment (Direct & Indirect)	<ul style="list-style-type: none"> DNA of Magarpatta City – Self sustenance Business model for farmers, service providers and vendors 	<ul style="list-style-type: none"> Employment created in Cybercity, commercial establishments & residences 	YES	YES
4.	Waste Management	<ul style="list-style-type: none"> Statutory requirement Contribution towards Swachh Bharat Mission 	<ul style="list-style-type: none"> Clean environment 	YES	YES
5.	Housekeeping and Facility Maintenance	<ul style="list-style-type: none"> Service Agreement requirements Reducing cost of breakdown maintenance 	<ul style="list-style-type: none"> Better and reliable service 	YES	---
6.	Security	<ul style="list-style-type: none"> Service Agreement requirements 	<ul style="list-style-type: none"> Safe and secured neighbourhood 	YES	---
7.	Health & Safety	<ul style="list-style-type: none"> Assuring a zero accident environment 	<ul style="list-style-type: none"> Safe working conditions for construction and maintenance staff Ensuring fire-safety and elevators 	YES	---
8.	Compliance	<ul style="list-style-type: none"> Enhanced transparency and accountability 	<ul style="list-style-type: none"> Trust and reliability in the brand 	YES	---
9.	Ethics, Governance, Code of Conduct	<ul style="list-style-type: none"> Institutionalization of the services Ease of doing business 	<ul style="list-style-type: none"> Trust and credibility in the brand 	YES	---
10.	Economic Opportunity	<ul style="list-style-type: none"> Profit maximization and scaling up the business 	<ul style="list-style-type: none"> Social upliftment of farmers and job opportunities for local communities contribution to national income 	YES	---
Corresponding Sustainability Pillar of Magarpatta City: VAYU					
11.	Emissions	<ul style="list-style-type: none"> As per compliance Alignment with global aim of mitigating emissions 	<ul style="list-style-type: none"> Cleaner air for ensuring health and wellness 	YES	---
12.	Roads, Traffic & Mobility	<ul style="list-style-type: none"> Maintaining safety and to support the infrastructure 	<ul style="list-style-type: none"> Congestion free and safe commuting 	YES	YES

Sr. No.	Material Topic	Importance to Business	Importance to External Stakeholders	Topic Boundary within Magarpatta City	Topic Boundary outside Magarpatta City
13.	City Aesthetics/ Bio-diversity	<ul style="list-style-type: none"> Integration of mankind with nature Differentiate from others Additional source of revenue through events, film and advertisements shoots 	<ul style="list-style-type: none"> Visual appeal & model for future cities to follow 	YES	---
14.	Green Cover & Landscaping	<ul style="list-style-type: none"> Statutory requirement of open space Reduction of carbon emissions 	<ul style="list-style-type: none"> Noise and air pollution in control 	YES	---
15.	Water Management	<ul style="list-style-type: none"> Service Agreement requirements 	<ul style="list-style-type: none"> Assured water supply Reduced dependency 	YES	---
Corresponding Sustainability Pillar of Magarpatta City: JAL					
16.	Energy Management	<ul style="list-style-type: none"> Reduction in operational costs with company vision of reducing energy footprint Additional source of revenue (through MSEDCL franchise model) 	<ul style="list-style-type: none"> Ensuring reliable power supply Reduced dependency Lower costs 	YES	---
Corresponding Sustainability Pillar of Magarpatta City: AGNI					
17.	Community Engagement	<ul style="list-style-type: none"> Efficiency of services - improved 	<ul style="list-style-type: none"> Lively and vibrant community Platform for providing feedbacks 	YES	---
Corresponding Sustainability Pillar of Magarpatta City: AAKASH					
18.	Training, Awareness & Skill development	<ul style="list-style-type: none"> Maintaining leadership and business excellence Ease of service delivery 	<ul style="list-style-type: none"> Latest technologies and practices delivered Service satisfaction 	YES	---
19.	Branding and Promotion	<ul style="list-style-type: none"> Creating a brand and nurturing with other potential revenue streams 	<ul style="list-style-type: none"> Brand Equity & recall value 	YES	---
20.	Communication	<ul style="list-style-type: none"> Ensuring efficient and timely service delivery A channel for information sharing Grievances and feedback mechanism 	<ul style="list-style-type: none"> Connected community service reliability 	YES	---

SUSTAINABILITY DASHBOARD OF MAGARPATTA CITY YEAR-ON-YEAR:

Sustainability KPI	Units of Measurement	2015-16	2016-17	2017-18
Reduction of City's carbon footprint compared to baseline year	Factor	1	0.95	0.87
Annual green investment (in lakhs)	Investment per 10 cr INR revenue earned	4.2	9.5	74.16
Strengthening discourses on sustainability for stakeholders	No. of person - hours for every 30 stakeholders	120	95	88
Strengthening social capital for healthy environment and holistic development	No. of person - hours spent by every 10 City staff	778	778	788
Redressal of complaints resolved by City Council	Ratio of No. of complaints received to resolved	1.36 : 1	1.37 : 1	1.40 : 1

*Baseline year: 2015-16





pruthvi

earth

BUILT ENVIRONMENT & LANDSCAPING



VISION AND DESIGN PHILOSOPHY ADOPTED IN MAGARPATTA CITY PLANNING

In line with the mission statement, the master planning strives to create an environment that aims to provide better living standards with a strong concern for the environment. Set on the concept of walk-to-work and walk-to-school, the township ensures that all fundamental amenities are located at a comfortable walking distance for every resident in the city. The health and well being of the residents have been prioritized by ensuring a pollution free, safe and secured environment. Careful use of resources, energy-conscious approach, efforts to restore groundwater and re-use of wastewater, and management of solid wastes are some of the significant measures adopted at Magarpatta City in order to contrive a low-impact development.

DESCRIPTION OF THE MASTER PLAN

Built over a total expanse of 430 acres, the township forms an abode for about **29,159 people** living in close proximity with all essential amenities as well as nature itself. Aditi Garden, a sprawling 25 acre "urban forest", performs as the lungs of the city and helps in the regulation of microclimate. Cybercity runs along the circumference of the Aditi Garden with a built-up area of approximately 7.5 million square feet divided into an IT park, STPI and SEZ.

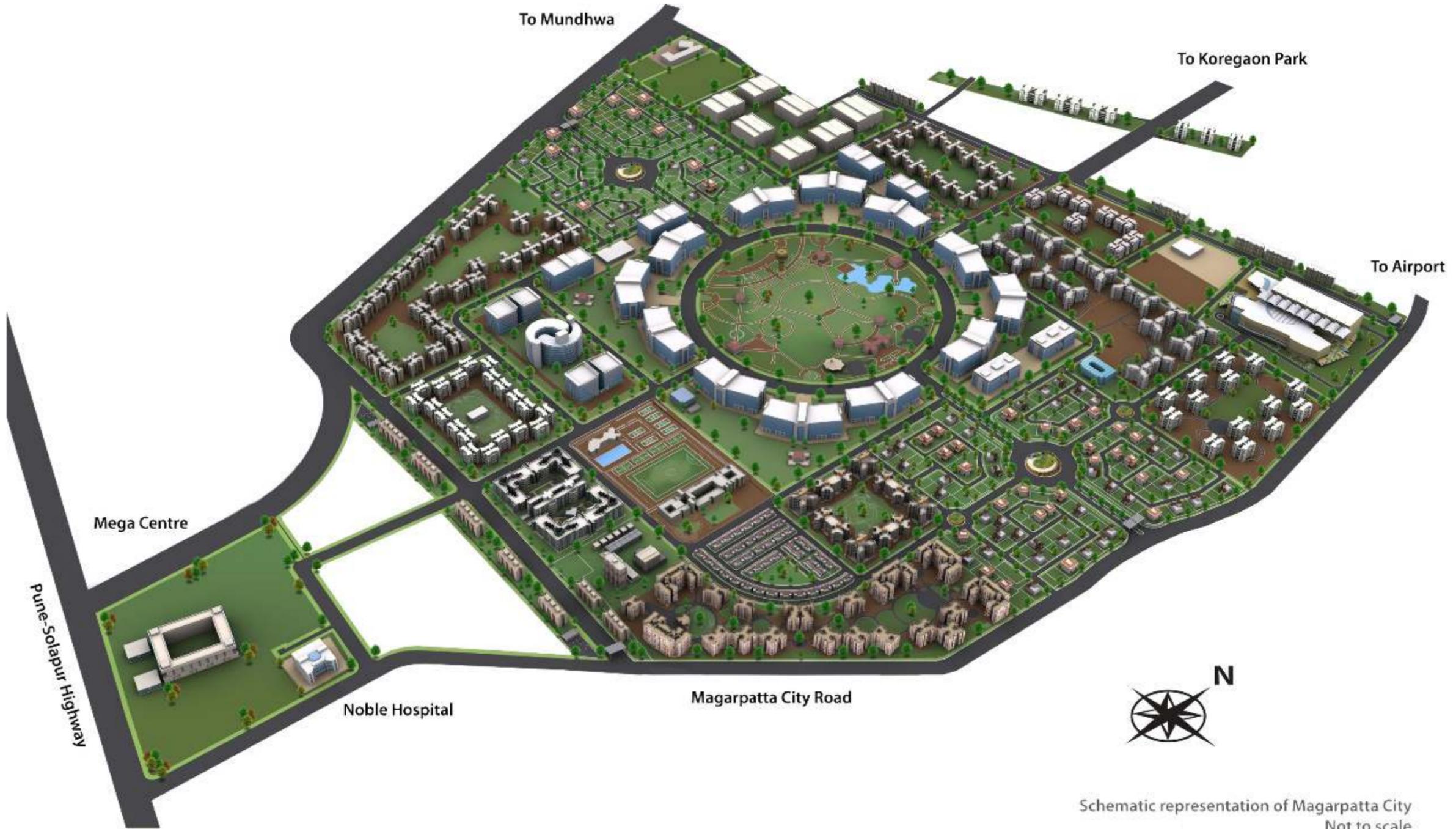
VARIOUS BUILDING TYPOLOGIES AT MAGARPATTA CITY

	AREA	POPULATION
IT Park & Commercial (Cybercity, SEZ and Pentagon)	4,95,202 sq.m.	85,200 (direct), 16,313 (indirect) employment
Residential (7,500 apartments)	8,64,522 sq.m.	29,159 residents
Institutional (Schools)	12,147 sq.m.	1,650 students
Amenities (Destination Center, Mall, Corporate Office)	16,69,568 sq.m.	Floating population

During the process of conversion of the farmland, the existing landscape was preserved by maintaining the existing topography, retaining the existing trees and protecting the rich and fertile soils. To enable ground water recharge, there are several bore wells planned along the natural slope of the site that help the township cope with the water stress which is prevalent during summer in this region.

Pune experiences warm and dry climate wherein ventilation plays an important role in inducing comfort therefore the buildings have been spaced adequately apart, allowing natural breeze to flow unobstructed through every part of the township. Microclimatic phenomena such as the urban heat island effect has been controlled to a great extent through shading of streets and open spaces using avenue plantation. The rows of broad canopy trees also ensure shaded pedestrian walkways and parking spaces.

In view of reducing the overall carbon footprint, and providing healthier living environment, the master plan also strives to boost the ease of mobility for residents and employees of Cybercity with the concept of walk-to-work and walk-to-school.



Schematic representation of Magarpatta City
Not to scale





LANDSCAPE



As a lung space and the hub of all social activities at Magarpatta City, Aditi Garden stands at the very heart of the township comprising of thousands of trees that attract numerous species of fauna, nurturing an ecosystem of its own in the midst of the bustling metropolis. The large green space contains a variety of landscapes ranging from a mini forest to large lawns. Aditi Garden also consists of a shallow water body which serves the greater purpose of collection and percolation of rainwater into the ground. The newly planted tree and shrub species are a mix of native and ornamental species, which are well adapted to its climate and soil. As a result, they require less water and grow well without requiring excessive care and maintenance. Many of these species such as *Azadirachta indica* (Neem), *Ficus religiosa* (Peepal), *Alstonia scholaris* (Saptaparni), *Syzgium cuminii* (Jamun) and *Eucalyptus globulus* (Nilgiri) are known for their air purification properties.

SPECIES HAVING A LOW REQUIREMENT OF WATER USED AT MAGARPATTA CITY

Sr. No.	Name of variety
1	<i>Wadellia trilobata</i>
2	<i>Tecomaria capensis</i>
3	<i>Allamanda dwarf</i>
4	<i>Abellia green</i>
5	<i>Achystachia</i>
6	<i>Pithocolium dulce</i>
7	<i>Haemelia patterns</i>



Some of these species are also known for carbon capture and storage, in sequestering the amount of carbon present in the atmosphere and contributing towards the overall goal of mitigating climate change. Species such as *Tectona grandis* (Saagwan), *Eucalyptus globulus* (Nilgiri), *Prosopis juliflora* (Shami) and *Azadirachta indica* (Neem) are known to have a high carbon absorption potential (~1.5 to 2.5 lakh tonnes of carbon dioxide in their lifetime), therefore they have been planted in large numbers.

The landscape also plays a crucial role in percolation of storm water into the ground and thereby reducing the volume of rainwater from entering the municipal sewers. Hence, 78% of the open spaces is pervious using soft-scape such as lawns and natural ground cover, soft pavements or open pavements. The net imperviousness of the site is restricted to 55% which is lower than the maximum benchmark prescribed by the National Building Code.

Flowering trees such as Cassia, Canon Ball Tree, Crape Myrtle, Coral Tree and Golden Champa having different flowering seasons mark the "Rutu Chakra" or the seasonal cycle breaking the monotony of the landscape and further strengthening the bond between mankind and nature.





RESOURCE CONSERVATION DURING CONSTRUCTION



SOIL CONSERVATION AND TOPSOIL MANAGEMENT

The fertile soils of the original farmland where the township stands now is a precious resource by itself, therefore unlike the conventional practice of using it for plinth filling, the fertile soil was preserved and used for landscaping. While for plinth filling, a mixture of waste generated at the time of construction was used to backfill.

1.76 lakh m³ of soil, along with 0.5 lakh m³ of clayey shadu soil and 2.58 lakh m³ of murum excavated during construction were preserved and re-used for landscaping applications such as elevation of ground surface and creation of mounds up to podium level. The soil was separately stored and covered with mulch in order to protect it from erosion.

USE OF CRUSHED SAND

The rapid depletion of river sand caused by rampant construction over the last few decades has made it a precious commodity. Excessive extraction of river sand has led to ecological imbalance, reduction of ground water levels and drying up of rivers. Thus, at Magarpatta City, the use of river sand has been substantially avoided by using crushed sand as its substitute. Here, the crushed/manufactured sand has been used in a variety of applications such as structural concrete, masonry, plaster, waterproofing as well as flooring. Crushed sand was readily made available from the local quarries and hence it was not only economic but also an energy conscious choice as it is a low-embodied energy material. The compressive strength of concrete made from crush sand is higher than natural sand. To maintain quality, in-house quality check department has been set up to undertake sieve analysis to prevent oversize material.

USE OF FLY-ASH BRICK INSTEAD OF BURNT CLAY BRICK

A traditional burnt clay brick construction has an embodied energy of 2.3 GJ/m³. This is due to the fact that tremendous amount of non-renewable fuels are consumed in furnaces for the baking of such bricks. Using fly-ash, along with cement and crushed sand, for the construction of concrete blocks allowed Magarpatta City to reduce embodied energy of masonry component to 1.3 GJ/m³.



REDUCTION IN AMOUNT OF STEEL USED IN CONSTRUCTION (REDUCED EMBODIED ENERGY OF CONSTRUCTION)

Standard reinforced concrete slabs require immense amounts of steel when required to cover large spans. Hence, at Magarpatta City, the Cybercity buildings that have large spans consist of "Post tensioned slabs". Post tensioned slabs are thinner and thus require less material in terms of concrete and steel. The savings in amount of concrete is 20% and that of steel is 60%. Thus, the energy intensity of the structure has been reduced.

HIGH PERFORMANCE BUILDING SHELL USED IN CYBERCITY AND PENTAGON TO REDUCE THE COOLING LOAD

Office spaces at Magarpatta City are designed to ensure not just energy savings but also the health and well being of its occupants. Seamless glass facades are not only aesthetically pleasing but also maximize the daylight in the interiors thereby reducing the dependency on artificial lights during the daytime. In order to keep the heat out, the envelope has been designed as a dual shell system, with the inner shell comprising of a single pane clear glass of low solar heat gain coefficient of 0.37. The outer shell is made up of high performance double glazed units of solar heat gain coefficient of 0.26. The overall assembly is able to reduce direct solar heat gains by 60% compared to a standard single pane glass assembly.

USE OF SUSTAINABLE MATERIALS WITH RECYCLED CONTENT

Virgin timber is a precious resource which has been rampantly consumed over the last few decades leading to deforestation and habitat loss for flora and fauna. At Magarpatta City, the requirement of timber for construction has been reduced to a great extent. For example, for doors and windows, composite wood panels and aluminium have been used. Composite wood is made up of 100% recycled wood. Instead of using wooden panels for partitions and panelling, Aerocon panels (lightweight cement based sheets containing fly-ash) have been used which is a more sustainable choice as compared to timber. Even during the construction phase, steel scaffolding and shuttering were used in place of timber and bamboo.

CONTROLLING POLLUTION AT THE TIME OF CONSTRUCTION

Construction activities often cause air, water, soil and noise pollution. Continuous movement of heavy vehicles in and out of the construction site can draw enormous amounts of dust into the atmosphere. Hence, at Magarpatta City, the wheels of heavy vehicles were washed routinely in order to avoid the dust. A speed limit restriction also helped in reducing air pollution and at the same time maintaining safety on site. Tall barricades were installed along the site periphery to contain the air pollution within the site limits. Construction materials were stored in designated storage yards. Materials that tend to cause air pollution were watered occasionally to prevent pollution.

Sedimentation pond dug at the time of construction allowed the construction sediments to be collected and stored separately without polluting the natural clean water reservoirs.





DIRECT ECONOMIC BENEFITS

Magarpatta City, home to 29,159 residents, is now a complete township. Thus, the source of revenue apart from the sale of units is the lease amount being accrued from Cybercity, thus showing a dip in revenues from FY 2015-16 to FY 2017-18.

PARTICULARS (INR in millions)	2015-16	2016-17	2017-18
Economic Value Generated (A)	1,121	461	974
Economic Value Distributed (B)	675	712	947
Operating Costs	1,248	2,915	2,273
Employee Benefits & Wages	219	224	235
Payment to Providers of Capital	548	544	506
Payment to Government	117	159	429
Economic Value Retained(A-B)	446	-251	27



INDIRECT ECONOMIC BENEFITS

MAGARPATTA CITY PROVIDES DIVERSE SET OF EMPLOYEE BENEFITS, NAMELY:

SHORT-TERM OBLIGATIONS:

Liabilities for salaries, including other monetary and non-monetary benefits are expected to be settled fully within 12 months after the end of the period in which the employees have rendered the related service. Services up to the end of the reporting period are measured and the amounts expected are to be paid when the liabilities are settled. The liabilities are presented as current employee benefit obligations in the balance sheet.

OTHER LONG-TERM EMPLOYEE BENEFIT OBLIGATIONS:

The liabilities for earned leave are not expected to be settled fully within 12 months after the end of the period in which the employees render the related service. They are therefore measured as the present value of expected future payments to be made in respect of services provided by employees up to the end of the reporting period using the projected unit credit method.

POST-EMPLOYMENT OBLIGATIONS:

The company has defined contribution plan for the post-employment benefits namely Provident Fund which is administered through the Regional Provident Fund Commissioner. The company has defined benefit plan, namely gratuity for eligible employees in accordance with the payment of Gratuity Act, 1972, the liability for which is determined on the basis of an actuarial valuation (using the projected unit credit method) at the end of each year. The Gratuity Fund is recognised by the income tax authorities and is administered through Life Insurance Corporation of India under its Group Gratuity Scheme.

The operations of Magarpatta City and Cybercity generate several indirect economic benefits. In addition to job opportunities in blue collar, white collar and contractor categories, several infrastructure and services have been envisioned by Magarpatta City. The following table captures the key highlights of the benefits.

INFRASTRUCTURE BENEFITS

Significant Infrastructure Investments (INR in millions)	Total Financial Support or Construction of:	Annual Maintenance 2015-16	Annual Maintenance 2016-17	Annual Maintenance 2017-18
Publicly accessible open/recreational space	5695	1,866	1,850	1,777
Community education facilities	849	402	17	7.66
Transportation services to connect residential areas (within Magarpatta City and in Pune) to places of employment	Investment made by City Zip	7.75	55.00	55.00

JOB CREATION

Nature of Job Created	2015-16		2016-17		2017-18	
	No. of Jobs	(Amount in millions)	No. of Jobs	(Amount in millions)	No. of Jobs	(Amount in millions)
MAGARPATTA CITY EMPLOYEES						
White Collar	340	116	372	128	370	125
Blue Collar	684	70	722	72	731	73
Contractors	0	0	0	0	0	0
Total	1,024	186	1,094	200	1,101	198
CYBERCITY EMPLOYEES						
White Collar	60,720	42,796	65,220	49,428	69,698	56,798
Blue Collar	3,631	51	4,231	65	5,212	86
Contractors	10,024	1,258	9,969	133	10,290	145
Total	74,375	44,565	79,420	51,405	85,200	59,102
INDIRECT EMPLOYMENT						
White Collar	9,110	3,609	9,501	4,125	10,335	5,022
Blue Collar	5,286	608	5,295	671	5,978	898
Contractors	0	0	0	0	0	0
Total	14,396	4,216	14,796	4,796	16,313	5,921

CASE STUDY – ECONOMIC UPLIFTMENT OF LABOUR COMMUNITY



Issue	Facilities	Approach	Benefits
To provide shelter, education and basic amenities to the labour community	Education Electricity Clean water Toilet Health Camps Recreational facilities Transport facility	There are around 320 adults and 32 children in the camp. A supervisor with 12 S/G's is deployed in the camp to ensure safety, security & welfare of the families	The children of the construction workers after completing their studies have become self-reliant & are contributing to the growth of the economy.

PARTNERSHIPS

Magarpatta City provides a healthy and safe environment to residents and concerned parties and thus gathered significance from the communities outside. These communities get involved and help to build strategic partnership, further making way for networking and business opportunities.

SOME OF THE PARTNERSHIPS ARE AS FOLLOWS -

FICCI FLO MARATHON (PUNE FLO HALF MARATHON)

The marathon was organized by FICCI India in association with Bridgestone Flo Marathon on Women's Empowerment and saw a participation of over 10,000 people. Several training and workshops were organized to help them develop skills, benefitting the community at large.

CITY ZIP SERVICES

The City Zip Service was in partnership started by Magarpatta City in collaboration with Supreme Trans for the IT employees in Cybercity. Around 18,000 people use the city zip services, considerably reducing the pollution as well as the cost.

SHARED CYCLES

This shared cycle system was developed by partnering with YULU, in order to deal with the parking issues and air pollution created by two wheelers. There are now 16,430 registered users with 359 bicycles and the awareness increasing on a daily basis.



SROI OF MAGARPATTA CITY SROI METHODOLOGY: THEORY OF CHANGE

The final change is impact. The organization utilizes resources (inputs) to do its work (activities) and that leads to direct results (output), and in turn delivers long-term significant results (outcomes). The outcomes lead to more lasting change as Impacts.

The impact assessment captures this through an analysis of inputs, outputs, outcomes, and impacts. The table below depicts the outcome analysis for the stakeholders in consideration.



OUTCOME MAPPING

Stakeholders	Input	Activity	Output	Outcome
Residents	Well maintained secure residence along with excellent neighbourhood	To develop living experience	All sold-out flats, higher rental income	<ul style="list-style-type: none"> • Increased livelihood experience • Walk-to-work, walk-to-school • Safe and a green environment • Excellent waste management systems • Traffic free zone • Less pollution
Shareholders	Sustained Dividend	Higher revenue business	Good returns on land investment	<ul style="list-style-type: none"> • Newer avenues to increase business
Indirect employee	Secure workplace, More option for work, longevity of work	Security and safety, More options	Higher income and job generation	<ul style="list-style-type: none"> • More job generation through indirect employment

THE IMPACT ANALYSIS

Impacts refer to the difference made specifically by your organisation or project in achieving the outcomes described above. There are several factors that need to be taken into consideration.

- Attribution takes account of the fact that outcomes will also be influenced by other organisations and factors, especially where the stakeholders' objectives can only be achieved through the combined efforts of more than one organisation
- Deadweight is the extent to which the outcomes would have happened anyway and is estimated by using benchmarks
- Displacement (or substitution effect) occurs when the benefits claimed by a project participant are at the expense of others outside the project

Impacts, therefore, are the outcomes adjusted to take account for the difference made by your organisation.

[Impact] = [outcomes] - [deadweight, attribution, displacement].

In order to derive the impacts, the outcomes are measured using indicators as described in the table. In case of absence of indicator, proxies are used.

INDICATOR AND PROXIES

Output	Indicator	Proxies
All sold out flats, higher rental income, community living	<ul style="list-style-type: none"> • Total flat sold out at average rate, current rate, rental income, civic engagement • Neighbourliness (reciprocity and trust in neighbours) • Social networks (friends and relatives) • Social support • Perceptions of local area 	<ul style="list-style-type: none"> • Cost of membership of a social club/network • Percentage of income normally spent on leisure activities, amount spend on travel • Amount spend on housekeeping and infrastructure
Good returns on land investment	Dividend pay-out	<ul style="list-style-type: none"> • Land cost for 600 acres
Higher income and job generation	Total economic impact by indirect employment	<ul style="list-style-type: none"> • Local payment based on wages

The table above depicts the outcomes for the stakeholders in consideration. A good SROI presents a story of change, including both qualitative and quantitative findings, and provides information to help organization to maximize their outcomes.

The outcome for each stakeholder is measured using indicators and in absence of indicators proxies are used. Hence identification of proxy helps to quantify the outcome.

RATIONALE FOR DEADWEIGHT AND ATTRIBUTION

In case of Magarpatta City, the deadweight will be rates and developmental costs at nearby area for example Shinde Vasti. This essentially means that in the absence of planning and vision of Magarpatta City, the area would have looked like present Shinde Vasti - a typical unplanned suburban area that is developed in the terms of land rates and sporadic developments.

The attribution is considered as 15% of benefits due to factors outside Magarpatta City like education, jobs availability in Pune region, foreign policies by government.

The Impact analysis table depicted below not only calculates the impact but it also arrives at the SROI calculation for the shareholders and for the residents along with indirect employment. The most significant gain can be visualized using the SROI Matrix. The table below depicts the SROI for the resident and shareholders.

Indirect employees represent the bottom of pyramid. The housemaids, drivers, car cleaners, security staff, teachers in preschool, helpers and aayas in day care centres are considered for the calculation.

IMPACT ANALYSIS

Stakeholders	Measures	Magarpatta City	Dead Weight (Shinde Vasti)	Benefit	Attribution (15% of Benefit)	Social Impact Value
Residents	a1) Rental income	22,000	12,000	10,000	1,500	8,500
	a2) Sports & Leisure (Per Household)	587	6,000	5,413	812	4,601
	a3) Transport Cost (Per Household)	2,000	5,000	3,000	450	2,550
	a4) Common area maintenance (for residents alone per household)	2,619	3,700	1,081	162	856
Shareholder	b) Dividend pay-out (Per Farmer Family)	3,23,569	41,008	2,82,561	42,384	2,40,177
Indirect Employee	c) Income Per Person Per Month	30,249	10,000	20,249	3,037	17,212

SROI FOR RESIDENTS

The Impact analysis of the residents clearly indicates benefits in terms of rental income, community living and transport.

Three scenarios are considered to classify the residents.

- An owner who has rented the flat to someone else and not a resident of Magarpatta City in that case his social ROI value is the extra rent i.e. ₹ 8,500 per month
- The owner who is resident of Magarpatta city who enjoys all other benefits, in this that case his net worth is not considered as he is enjoying the property. The Social ROI value will be rest cost saved due to Magarpatta City infrastructure and layout which is ₹ 8,007 per household per month
- A typical case when the owner has more than one property and resident of Magarpatta city then the social ROI value is ₹ 16,507 per household per month

Indicators	Impact
a 2) Sports & Leisure	4,601
a 3) Transport Cost (1 Person Per Household)	2,550
a 4) Common area maintenance (for residents alone per household)	856
Total Social Impact Value for Residents (per Household per month)	8,007

Indicators	Impact
1) Rental Income	8,500
2) Sports & Leisure	4,601
3) Transport Cost (1 Person Per Household)	2,550
4) Common Area Maintenance (For Residents Alone Per Household)	856
Total Social Impact Value for Residents (Per Household Per Month)	16,507

SROI FOR SHAREHOLDERS

The shareholders have the maximum social impact in terms of earnings and social well being. The shareholder impact is ₹ 2,40,177 per year, which is significantly higher than the other investment options. This indicates that the land pooling and acceptance of futuristic vision has helped the shareholders' families to reap maximum returns on the land that they have contributed to Magarpatta City.

As the shareholders got the dividends, there were few intangible benefits, which were also observed during the study. The farmer family slowly graduated from land owner to enterprise proprietor and then the further generation moved overseas to hone their skills and bring some value back to their family. The enterprise not only helped the farmer families to generate sustainable income it also created sense of competitiveness among them. The sustained earning helped farmers to create assets and long lasting impacts on future generations.

SROI FOR INDIRECT EMPLOYEES

The indirect employees are the key to convenience. These are the people who belong to class three or four. Most of them belong to lower income strata. Earlier generations of these people were daily wage earners and mostly used to work on farms as labourers. Today, this class has seen the most impact in terms of social change along with monetary gains.

The impact for indirect employees is ₹ 17,212 per month. There are in total 20,000 indirect employees creating a total impact of ₹ 344.23 million per month.

SECURITY & SAFETY



The aim of Magarpatta Security Department is to provide a secure environment to its residents, employees (direct & indirect) of the company and Cybercity, suppliers, students, visitors, etc. and also to protect property and assets in the premises of Magarpatta City. Various hierarchies of safety include fire, general etc. and its communication to every concerned stakeholder.

IT INCLUDES:

- A team of 15 Security Officers and Supervisors who are from the Indian Armed and Paramilitary Forces background having an experience of 15-20 years.
- Trained in handling of classified weapons and other aspects.
- Two of the Security Officers are from the Para regiment of the Indian Army and have performed duties with nation's elite commando force – NSG after undergoing rigorous training as a Commando of Indian Army.
- Also, two of the Security Officers who are from the Army's Commando background have trained the Force 1 commando battalion of Maharashtra Police.

The Security team of Magarpatta City has been esteemed and awarded by Maharashtra Police and other government agencies.

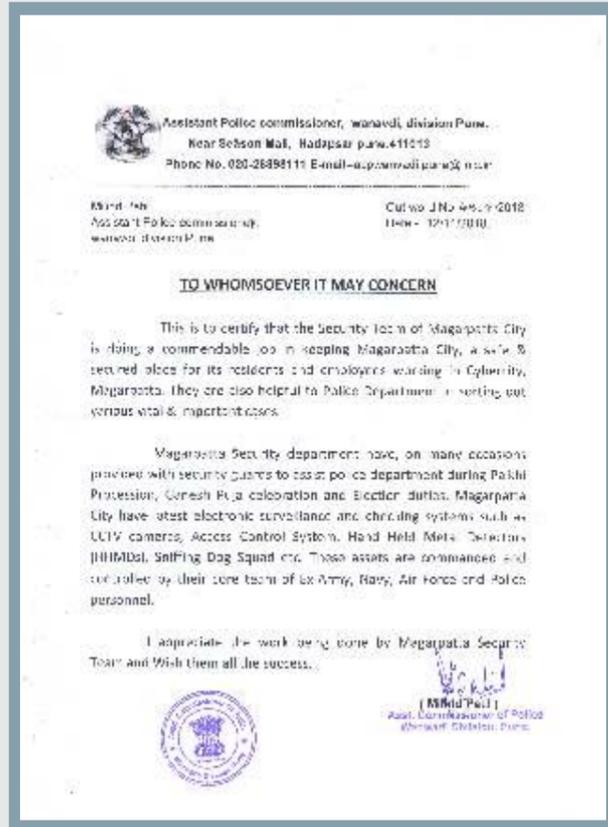




FIRE SAFETY

Since Magarpatta City is home to 29,159 people working in different capacities across different levels, fire safety is of utmost importance. 30% of the area is green cover, hence a single leak/ignorance in the system can cause a major damage to life and assets. Thus, Magarpatta City has built an infrastructure to prevent and if necessary handle any situation that comes before it.

Infrastructure	Approach	Benefits
534 DCP Fire Extinguishers	Monthly checking of pumps	Safety of humans and infrastructure. It's like first aid until professional help arrives at the place.
192 Fire Alarm Panels	Quarterly pressure testing	
22 Fire Pumps	Half yearly checking of alarm system	
200 Booster Pumps	Yearly servicing of fire extinguishers	
12 underground & 200 overhead Fire Tanks with a total water storage capacity of 70,73,950 liters	Half yearly oiling & greasing of pumps & hydrant valves	
41 fire refuse flats and 18 fire refuse areas to accommodate residents of high-rise buildings in case of fire incident	The entire material is thoroughly checked once in a year as per the checklist	



SAFETY WEEK

Safety week is one of the characteristics that make this township more robust. Held in 1st week of September, it is an awareness drive involving construction site safety, fire safety, road safety, personal safety etc.

Problem	Targets Developed	Approach
To create awareness about safety and to avoid accidents during work	Awareness of safety norms amongst people especially the construction site workers and motivation for adhering to it	Display of posters / flex on safety measures at all prominent locations in order to attract maximum number of people
As the labour force is uneducated	Must use protective equipment during the work	Local language is used for better learning by the work force
Casual approach towards safety and easy way to work	To have zero accidents on site	Lecture are conducted at construction sites for workers, engineering staff, contractors, safety & security persons and also for others who are a part of the site / area
		Daily safety rounds by the concerned staff to ensure that the safety measures are followed

CASE STUDIES

A) DOG SQUAD

Problem	Approach	Benefits
For the safety of residents, employees of IT park and visitors (national and foreign) - a need to form a dog squad was felt	a.) A dog squad with 4 dogs of Labrador Retriever breed was formed which now consists of 06 sniffer and 02 guarding. b.) After the formulation of the dog squad, training was imparted on bomb detection and guarding of premises. c.) For this, the incharges of Dog Squad - Retired Additional SP of Maharashtra Police and a Retired Asst. Police Inspector (CID - Dog Squad) liaise with the dog squad of Maharashtra Police	A robust security arrangement as whenever a hoax call for any security reasons is sounded, the dog squad and the Supervisor on duty reach the spot as soon as possible and carry out checks by using metal detectors and the sniffers. This is done earlier than the dog squad of police department reaches the spot thus lessening turmoil that takes place on such happenings
		The local police authorities have on many occasions taken the help of our Security Officers and the Dog Squad during VVIP / VIP visits in Pune City. In the year 2008, when the then Honourable President of India - Smt. Pratibhatai Patil had visited Pune city for the opening ceremony of the Commonwealth Games, Pune police reached out to Magarpatta City for their dog squad

B) STRAY DOGS

Problem	Approach	Benefits
Complaints from residents and IT employees that stray dogs are chasing & barking at them posing serious threat.	Various rules and guidelines as laid down by Animal Welfare Board were followed; taking cognizance of the directives issued by the Apex court that stray dogs have the right to live in coexistence with all human beings in the society and cruel actions are strictly not allowed'	More than 90 dogs have been sterilized and about 27 injured / seriously ill stray dogs were handed over to PMC for necessary treatment. PMC, after the treatment to these strays, have brought them back to Magarpatta City and they are living in the societies.
Increase in their population creating rift between dog haters and dog lovers	Conflict got resolved as Magarpatta Security Department played a twin role of educating people about the right of stray dogs to live in coexistence with human. Thereby residents/ employees registering their grievances to the competent authorities through proper channels.	Sterilization also helps to reduce the dog and human conflict due to lesser aggression by stray dogs after that procedure.
	And with the help of Blue Cross Society - an agency authorized by government for sterilization of stray dogs- this was effectively carried out.	

C) CCTV FOOTAGE HELPING MAHARASHTRA POLICE

Task	Approach	Benefits
To keep Magarpatta City a peaceful place for all stakeholders involved directly or indirectly	a.) For effective surveillance and monitoring of entire area, CCTV cameras were installed in all areas b.) A centralised CCTV control room which can also function as the Command Center of Magarpatta City was to be established c.) Total cameras installed - 1,008	This proactive step reduced the occurrence of many incidents as early signs of danger were resolved at the source. Other Beneficiaries Police station such as Yerawda, Saswad, Wanowarie, Chakan and Crime branch of Pune Police took help of Magarpatta CCTV control room in investigating important cases.

D) RFID AND COLOUR CODED SECURITY CARDS ISSUED BY MAGARPATTA CITY

Task	Approach	Benefits
<u>RFID</u> A digital system for saving and enhancing the security levels for visitors/suppliers/support staff and employees at Cybercity	First the entry is done by making access control visitor management photo pass for 7 working days and then MTDCCL issues RFID cards	Real time visitors' and employees' data is available as the ID card has to be surrendered once the work/job has been completed
<u>Color Coded Security Pass</u> A system to identify service providers and avoid anonymous people coming to Magarpatta City	Instructions provided to service providers to renew their passes by first week of January as every year the color code changes	a.) Time consumption at the entry is reduced radically b.) As security layers are sinewy, fallacious entries are avoided

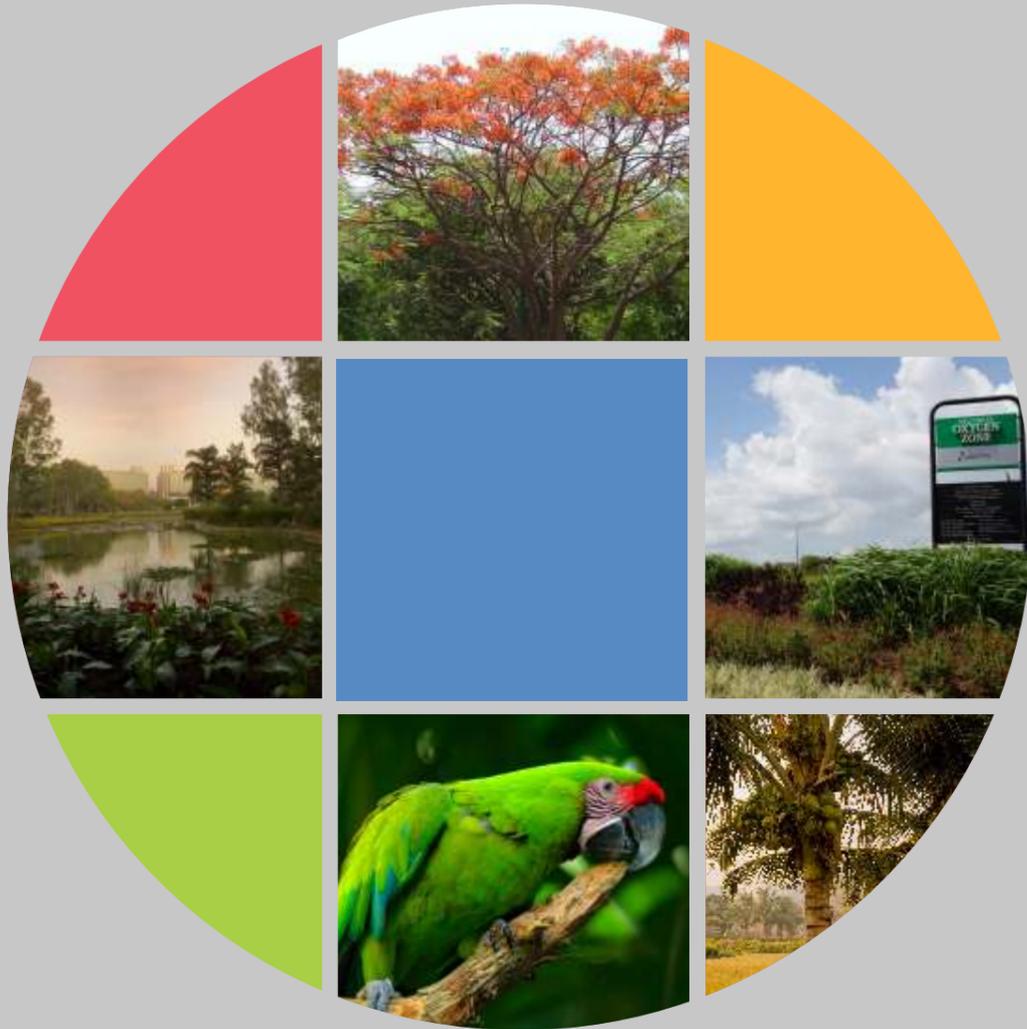
E) SECURITY PERSONNEL CO-OPERATION WITH MAHARASHTRA POLICE



F) BUDDY COP

For the safety of working women, especially those working in the field of IT (in shifts), Buddy Cop was initiated through which working women and police officials will remain in direct contact with each other through WhatsApp groups. This will ensure help to the women in distress in shortest possible time. The details of the members are maintained confidential by the police department and only the Police official who is one of the group admin of the concerned group is aware of the details. Implementation is done through the police officials of Hadapsar Police Station and security department of Magarpatta City.





vayu
wind

NATURAL CAPITAL AND BIODIVERSITY



Due to unsystematic urbanisation, alteration of microclimate and introduction of exotic species, there has been a change in the native flora and fauna of the Pune region. Due to human centric development, many faunal species have suffered habitat loss.

At Magarpatta City, it was ensured that fauna habitats are not disrupted while making way for human habitats, thereby finding a solution for the two to coexist. The large vegetated expanse of Aditi Garden and its water body at Magarpatta City address this very issue by serving as a safe abode for numerous bird and insect species. The preference given to indigenous plant species also helped in safeguarding habitats for native fauna species. A number of bird species such as aquatic fowls, parakeets, myna etc. are commonly observed.

There are **18,629 trees** of 173 different species planted in Aditi Garden, neighbourhood gardens and internal roads. Additional varieties in the range of 6.5 to 7 thousand trees were planted in the bungalow areas and the roads along the boundaries of Magarpatta City, taking the total to **25,000 trees**. The plantation was initiated in 2001 and the majority of the work was completed by 2015.

The oldest planted trees in Magarpatta City are almost 17 years old at present, becoming a valuable seed bank due to their variety and maturity. The plantation has a good mix of 72 species of shrubs, 31 ground covers, 11 climbers and 18 varieties of medicinal plants that are planted and are regularly monitored and maintained

“ The large varieties of trees especially indigenous varieties have provided unique habitat for variety of flora and fauna. One can see numerous varieties of birds like parrots, sparrows, mynas, raptors etc. Bats have begun nesting in Aditi Garden. Fauna like chameleon and squirrels are numerous. The water feature in Aditi Garden also houses aquatic fowls. ”

- Dr. Dasharath Waman Thawal, PhD (Agronomy), Resident at Magarpatta City



COMMONLY OBSERVED SPECIES OF BIRDS AT MAGARPATTA CITY



Local name: Ghar
English name: Common Pariah Kite
Scientific name: *Milvus migrans*



Local name: Titwi
English name: Redwattled Lapwing
Scientific name: *Vanellus indicus*



Local name: Parwa
English name: Blue Rock Pigeon
Scientific name: *Columba livia*



Local name: Hola
English name: Little Brown Dove
Scientific name: *Streptopelia senegalensis*



Local name: Parrot
English name: Roseringed Parakeet
Scientific name: *Psittacula krameri*



Local name: Chatak
English name: Pied Crested Cuckoo
Scientific name: *Clamator jacobinus*



Local name: Kokil
English name: Koel
Scientific name: *Eudynamis scolopacea*



Local name: Bharadwaj
English name: Crow- Pheasant
Scientific name: *Centropus sinensis*



Local name: Pingla
English name: Spotted Owl
Scientific name: *Athene brama*



Local name: Sutar
English name: Yellowfronted Pied Wood Pecker
Scientific name: *Picoides maharattensis*



Local name: Salunkhi
English name: Indian Myna
Scientific name: *Acridotheres tristis*



Local name: Kawla
English name: House crow
Scientific name: *Corvus splendens*



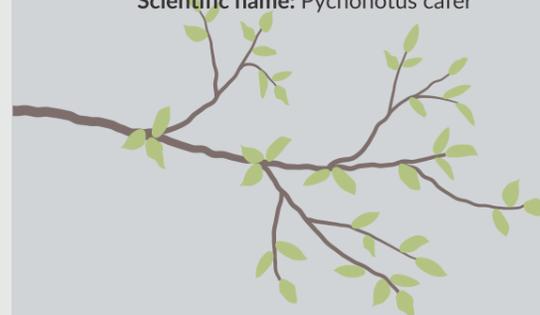
Local name: Bulbul
English name: Redvented Bulbul
Scientific name: *Pycnonotus cafer*



Local name: Chimni
English name: Hose Sparrow
Scientific name: *Passer domesticus*



Local name: Sugran
English name: Weaver Bird
Scientific name: *Ploceus philippinus*





VARIOUS SPECIES OF SHRUBS AT MAGARPATTA CITY

BOTANICAL NAME	Allamanda nerifolia	Eranthemum purpureum	Justicia adhatoda	Eranthemum nigrum
COMMON NAME	Allmanda	Er.purpurium	Adsula	Er.nigrum

BOTANICAL NAME	Dypsis lutescens	Tecoma gaudichaudi	Acalypha spp.	Acalypha spp.
COMMON NAME	Areca plam	Tecoma gaudichaudi	Acalypha tricolor	Acalypha green

BOTANICAL NAME	Euphorbia tithymaloides	Duranta erecta	Duranta erecta	Pseuderanthemum reticulatum
COMMON NAME	Pedilanthus	Duranta.vari	Duranta.golden	Pseudoeranthemum

BOTANICAL NAME	Ixora spp.	Ficus spp.	Tecomaria capensis	Plumbago spp.
COMMON NAME	Ixora	Ficus panda	Teccomaria c.	Plumbago

BOTANICAL NAME	Bambusa heterostachya	Canna indica	Dracaena victoriae	Dracaena mahatma
COMMON NAME	Varigated bamboo	Canna	Dracaena	Dracaena

BOTANICAL NAME	Haemelia aptterns	Dracaena marginata coloroma	Dracaena reflexa	Mussaenda erythrophylla
COMMON NAME	Hemelia pentans	Dracaena	Song of India	Mussanda

BOTANICAL NAME	Jasminum sambac	Cobaea scandens	Calliandra emarginata	Lawsonia inermis
COMMON NAME	Mogra	Cup & saucer	Powder puff	Lowsonia

BOTANICAL NAME	Hibiscus spp.	Schefflera arboricola	Graptophyllum pictum	Jacobina spp.
COMMON NAME	Hibiscus	Schefflera	Varigated graptophyllum	Jacobina

BOTANICAL NAME	Sambucus nigra	Tabernaemontana divaricata	Eranthemum laxiforum	Geranium spp.
COMMON NAME	Sambucus nigra	Tagar	Er. laxiforum	Geranium

BOTANICAL NAME	Pithecolium dulce	Clerodendrum inerme	Carissa spinarum	Crossandra infundibuliformis
COMMON NAME	Pithecellobium	Koynel	Karvand	Aboli

BOTANICAL NAME	Graptophyllum pictum	Galphimia glauca	Eranthemum alba	Thunbergia erecta
COMMON NAME	Red. graptophyllum	Galphemia	Er. alba	Thunbergia erecta

BOTANICAL NAME	Exocaria cochinchensis	Acalypha spp.	Breynia disticha	Cassia allata
COMMON NAME	Excoria	Acalypha comp	Snow bush	Cassia alta

BOTANICAL NAME	Saussurea obvallata	Murraya.exocita	Raphis exelsa	Alpenia zerumbet
COMMON NAME	Brahmkamal	Kamini	Rhaphis plam	Alphenia

BOTANICAL NAME	Plumeria pudica	Bougainvillea glabra	Turnera diffusa	Cestrum diurnum
COMMON NAME	Plumeria pudica	Bogenvillea	Turnera	Din Ka Raja

BOTANICAL NAME	Murraya koeniggi	Vinca rosea	Mirabilis jalapa	Howea forsteriana
COMMON NAME	Kadipatta	Vinca	Gulbakashi	Kentia plam

BOTANICAL NAME	Jacobaea maritima	Salvia splendens	Acalypha spp.	Jatropha pendurifolia
COMMON NAME	Silver dust	Red salvia	Acalypha hispida	Jatropha

BOTANICAL NAME	Vitex nigunda	Pisonia alba	Cestrum nocturnum	
COMMON NAME	Vitex	Paggoda	— — —	





VARIOUS SPECIES OF GROUND COVER PLANTS AT MAGARPATTA CITY

BOTANICAL NAME	Crassula spp.	Dianella spp.	Hemigraphis alternata	Felicia amelloides
COMMON NAME	Crassula	Dinelia grass	Hemigraphis	Blue daisy
BOTANICAL NAME	Russelia equisetiformis	Zephyranthes grandiflora	Asparagus aethiopicus	Asparagus densiflorus
COMMON NAME	Russulia	Z. lily	Asparagus sprigeri	A. foxtail
BOTANICAL NAME	Abelia grandiflora	Solidago canadensis	Achystacia spp.	Portulaca grandiflora
COMMON NAME	Abelia	Golden rod	Asystacia	Porchulaca
GRI 304-3				
BOTANICAL NAME	Crinum asiaticum	Wadellia trilobata	Epipremnum aureum	Aptenia cordifolia
COMMON NAME	Crinum lily	Wadelia	M. plant	Aptenia
BOTANICAL NAME	Lantana camara	Pilea microphylla	Chlorophytum comosum	Syngonium spp.
COMMON NAME	Lantana	Pilea	Chlorophytum	Syngonium
BOTANICAL NAME	Bambusoidae spp.	Alternanthera new	Mentha spp.	Asparagus racemosa
COMMON NAME	Bamboo grass		Mint	Asaparagus shatavari
BOTANICAL NAME	Vetevera spp.	Fercurria spp.	Ophiopogon japonicus	Cortaderia selloana
COMMON NAME	Vala	Fercurria	Mondeu grass	Pampas grass
BOTANICAL NAME	Zoysia	Cynodon Dactylon	Paspalum Notatum	
COMMON NAME	Taiwan grass	ABG	Paspallum	



VARIOUS SPECIES OF CLIMBERS AT MAGARPATTA CITY

BOTANICAL NAME	Clerodendrum splendens	Vernonia creeper	Stigma phylum	Lonicera spp.
COMMON NAME	Chlereodendron creeper	Curtain creeper	Stigma phylum	Lonicera
BOTANICAL NAME	Cenosia spp.	Cissus rhombifolia	Gourian climatis	Bougainvillea
COMMON NAME	Cenosia cunfugs	Grape ivy	Clematis	Bougainvillea
BOTANICAL NAME	Epipremnum aureum	Jasminium angustifolium	Ficus pumelia	
COMMON NAME	Money plant golden	Jaai	Wagh nakhi	



VARIOUS PLANTS HAVING MEDICINAL PROPERTIES			
BOTANICAL NAME	COMMON NAME	NO. OF TREES	PART USED
Acacia nilotica	Babool	3	Sal
Aegle marmelos, corr.	Bel	5	Pan, Sal, Phal
Amoora rohituka		165	Sal
Areca catechu	Supari	159	Fruit
Butea monosperma	Palas	64	Pushpa
Cassia fistula	Golden Shower/ Amaltas	209	Guda
Crataeva nurvala	Warun	3	Sal
Emblica officinalis	Aonla	3	Fruit
Ficus bengalensis	Wad	5	Sal
Ficus racemosa	Umber	45	Sal
Nyctanthes arbor-tristis i.	Parijatak	114	Sal, Pan
Saraca indica	Seeta Ashok	323	Sal
Syzygium cuminii	Jamun	8	Fruit, Sal
Terminalia arjuna	Arjun Tree	30	Sal
Terminalia bellirica	Bahera	40	Fruit
Terminalia catappa	Badam	84	Fruit
Total		1,260	

SHRUBS HAVING MEDICINAL PROPERTIES		
BOTANICAL NAME	AREA SQ.M.	
Adulsa	700	Pan
Vitex nigunda	350	Pan
Total	1,050	

AMBIENT ENVIRONMENT: NOISE AND AIR QUALITY



Through abundant vegetation and ease of mobility, the pollution levels at Magarpatta City are always kept in control. Regular air quality audits at Magarpatta City with a sampling duration of 24 hours performed over all the four seasons of the year show that the particulate matter levels in the air (PM₁₀, PM_{2.5}, SO₂, NO_x, Lead, CO) remain lesser than the maximum benchmarks prescribed by NAAQMS (NAAQMS/36/2012-13).

During the air monitoring at various intersections around Magarpatta City, it was observed that PM_{2.5} levels vary from 20 to 40 micrograms/m³ as against the limit of 60 microgram/m³. The SO₂ levels vary from 21 to 28 microgram/m³ and the NO_x levels vary from 27 to 42 microgram/m³ as against the limits of 80 microgram/m³.

Vegetation and reduced dependency on transportation also help Magarpatta City in reducing the ambient noise levels and providing a healthier and peaceful working, learning and living environment for the residents of Magarpatta City.

Within Magarpatta City, the plantations have been in use as noise barriers. Two major roads having high traffic flow run along the Eastern edge and western edge of the township. A lot of pollution was eminent. To tackle the challenge, a live tree barrier was created to shelter the buildings from pollution. Plantation of tree species along 6 metres wide shelter belt was developed along the periphery of the project. The plantation drive was conducted in phases but a total of 6m wide X 750m long shelter belt with plantation of tree species viz. Casurina, Thevetia, Grevellia, Caesalpinia, Acacias, Thespesia, Pongammia, Neem & Bahuinia was created. The plantation started during the early stages of the development of the township. Effective barrier was established with full growth of the trees.

The noise levels were also monitored regularly. The latest noise audit shows that due to the thick belt of vegetation running around the periphery, the average noise level reduction of 7.5dB was achieved.

“ It is very calm and peaceful. The people working in Magarpatta City, especially the staff at the nursery is taking a lot of effort to maintain the greenery. They are even helping people in growing plants in their own balconies. I'm thankful for the lush greenery at Magarpatta City. ”

- DR. MRS. KANCHAN DHOTKAR, PHD (BIOTECHNOLOGY), RESIDENT OF MAGARPATTA CITY

“ We can hear the chirping of birds in the morning which is not possible to hear outside. It is a good experience to stay here. ”

- MR SRINIVAS P. REDDY, MBA, RESIDENT OF MAGARPATTA CITY



SMART URBAN TRANSPORTATION

Ease of walking: Work, school and basic amenities are within a comfortable walking distance for the residents of Magarpatta City. Moreover, the pedestrian pathways are well maintained and shaded from direct sun. The thick green cover helps to control air pollution levels to a great extent. Thus, walking to work, school, or the nearby market is a pleasant experience for the residents. All junctions are in the form of a roundabout, eliminating the need of traffic lights, and in turn streamlining the flow of traffic, thus reducing the travel time extensively.

A strict speed limit of 20 km/hour on the major streets helps in reducing the possibility of road accidents and mishaps. 24 meter wide roads also help in tackling congestion and reducing travel time.



“ Walking to school is a pleasant experience for me. Magarpatta City is an amazing community with greenery everywhere. The cool breeze because of the plants makes me feel refreshed every morning. ”

- MS. TANVI KALASE, STUDENT AT MPCs, MAGARPATTA CITY

“ Since I work and stay in Magarpatta City, it's very convenient for me to walk around.

BENEFITS

- No traffic - no pollution
- Never late to work place
- Safety
- Enjoying the flora at the city ”

- SURABHI SRIVASTAVA, WORKING WITH AMDOCS TOWER- 12, RESIDENT AT LABURNUM PARK

“ My home is 6 km from Magarpatta City and it takes 20-25 minutes to reach office by cycle. It feels good as traffic does not affect me and this routine keeps me healthy. ”

- KARAN RAI, WORKING IN RED HAT, TOWER 10





Many of the residents, especially children, have purchased their own bicycles considering the safety and comfort of traversing on bicycles within the township. At present, there are over 220 students riding to school and 700 employees riding to work every day.

Use of personal vehicles for short distance travel within Magarpatta City was causing pollution and parking issues. To address this challenge, the idea to use share cycle system was mooted. In 2018-19, deployment of 150 share cycles across Magarpatta City for short distance travel was undertaken. The share cycle system was developed by YULU bicycles. The cycles are available at strategic locations and are used by residents and employees. **Presently, 359 cycles with 16,430 registered users and 9,067 total rides per month is recorded.** This has the potential of around 2,020 kg in carbon emissions reductions for every meter travelled. The usage of these shared cycles resulted in:

- Increase in awareness about cycle usage.
- Parking issues are reduced.
- Helped lessen vehicular traffic such as auto rickshaws, cabs for short rides within Magarpatta City.

“ A regular ride on my cycle to school makes my day pleasant and refreshing. It keeps me fit and also reduces traffic. ”

- MR. ARYAN KEKARE, STUDENT AT MPSC, MAGARPATTA CITY

“ Yulu service is very good option for commuting within the city. The cycles are readily available and no cumbersome procedure is followed for pick up and drop. It also helps keep me energized. ”

- NAVEEN KUMAR S, WORKING WITH JD AND RESIDENT AT TRILLIUM



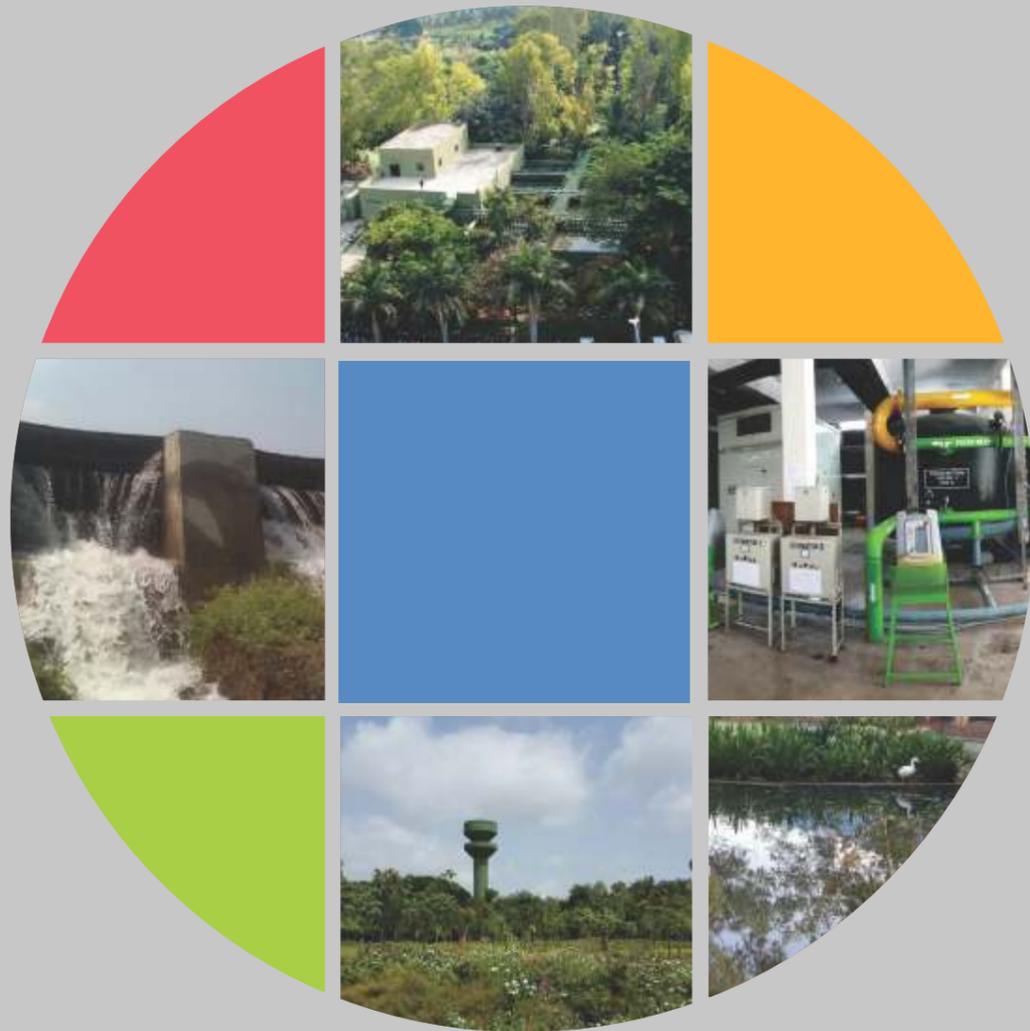
A problem of increasing magnitude emerging in large metropolises is of vehicular parking. Increasing numbers of private vehicles have increased the demand for parking spaces, and in the process, they have led to increased congestion and compromise with green spaces. At Magarpatta City, the problem was dealt by trying to address the issue at its root, i.e. reducing the number of private vehicles entering the city by providing the option of “City Zip”. City Zip is a bus service initiative started by Magarpatta City, in collaboration with Supreme Trans, in 2016 for the IT employees who arrive in the township from various locations in Pune. Since then, the number of buses have increased from 55 to 80, and today there are **17,898 people using City Zip.**

Together, these 80 buses are able to substitute 2,400 cars from the road of Pune, thereby reducing 16 metric tonnes of CO₂ emissions in a year.



A need of effective public transport system was felt to reduce the number of vehicles entering Magarpatta City. Hence, the initiative to start the bus service was taken and in the initial phase, 55 buses were introduced for use by the IT employees who come from various locations of Pune city and surrounding areas. From the initial fleet of 55 buses in 2016, in the year 2018 the number of buses has increased to 80 as the number of users has increased to 17,898. The buses are effectively running on 23 different routes covering almost all the major destinations of Pune city. These measures have reduced the number of private vehicles.

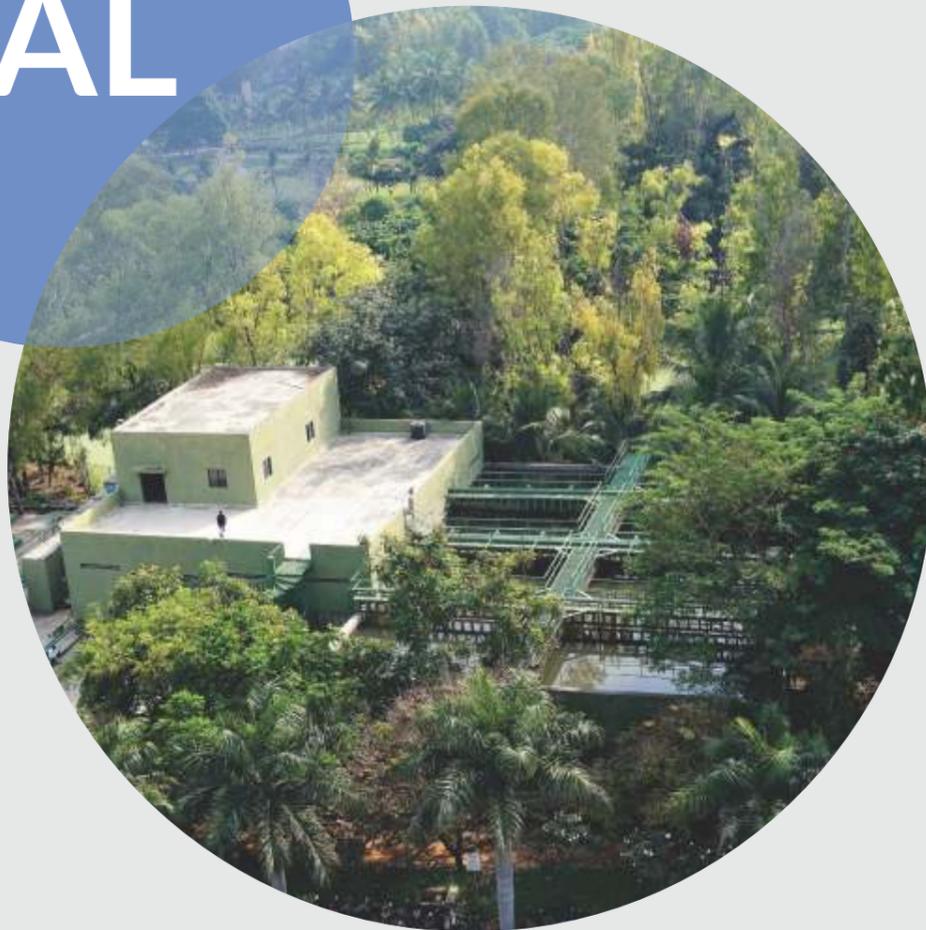
80 buses are plying in the fleet of Citi Zip reducing about 2,400 cars from the road and also reducing a large quantity of carbon emission. The effects of this initiative have resulted into less fuel consumption, reduction in carbon emission, reduction of vehicles on roads and generation of employment in the form of more than 80 drivers and support staff. Safeties of the employees who use this transport system has increased while undertaking to & fro journey from home to their workplaces and back. The commuters in the buses are utilizing their valuable time in other constructive / personal activities.



j^{al}

water

JAL



The geography of Pune is such that it lies on the leeward side of the Western Ghats – that acts as a natural barrier from the rain-bearing south west monsoon winds. Thus, this region is drier and been referred to as a rain shadow region. As water management is included in our materiality map – its conservation and optimum usage is priority for Magarpatta City. The water stewardship at the township reflects the DNA of Magarpatta City and is one of the examples to look upon as a conscious citizen comprising of a large volume.

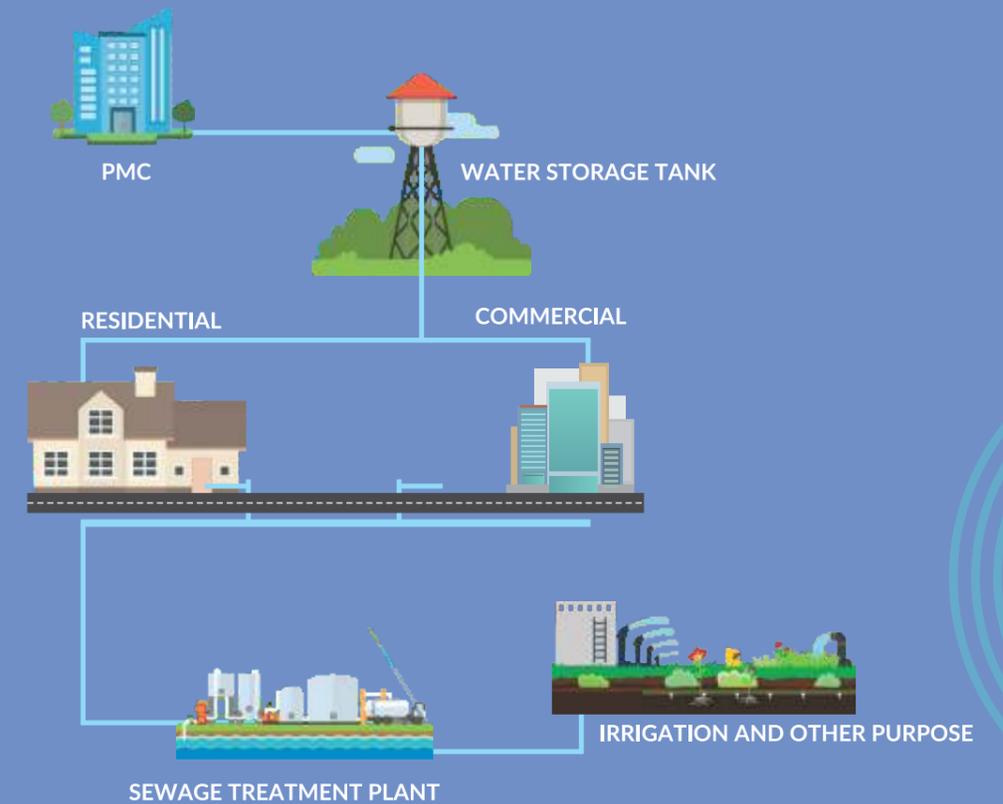
COMMUNITY WATER SYSTEM OVERVIEW IN MAGARPATTA CITY

The water management system at Magarpatta City caters to the needs of residents as well as the people working in Cybercity. The source of water is from Pune Municipal Corporation. A 4 MLD water treatment plant is installed to treat and distribute raw water from other sources in case of short supply from PMC, especially during summer. The diagram below is a representation of the above system.

OUT OF THE TOTAL MUNICIPAL SUPPLY:

- 70 % is utilized in residential while the rest 30% is for commercial purposes.
- 70% of the total water used is being fed into the STP for the treatment.
- 90% of the above water gets treated.
- Out of which, 66% is used for irrigation and the rest for other purposes.

All water quality standards are analysed quarterly & respective department takes care of the routine check-ups.



WATER MANAGEMENT SYSTEM

INITIATIVES FOR WATER CONSERVATION



1. INSTALLATION OF WATER METERS-

The water meters are installed at the commercial buildings & few prepaid water meters for row houses & bungalows.

2. CENTRALISED WATER DISTRIBUTION SYSTEM-

The centralised water distribution system comprises of one Ground Storage Reservoir (GSR) & two Elevated Storage Reservoir tanks (ESR). Water is pumped from GSR into ESR Tank No. 2 & from ESR Tank No. 2, it goes to overhead tanks of each buildings by gravity. This reduces the multiple pumping stations & water pumping cost for every station and also minimises line losses.

The ESR Tank No. 1 is for storing the treated sewage water which is utilised for irrigation and other purposes by gravity. This helps to reduce the pumping cost for irrigation also.

Thus, the centralised water supply system helps to reduce the electrical consumption for water pumping & subsequently reduces the maintenance for water pumping unit.

3. GROUND WATER RECHARGING:

Along with this, rain water harvesting is also carried out for recharging the water tables and reducing the water footprint.

The rain water falling on roads, paved areas, roof etc. are collected to storm water drainage systems. Recharge pits and bore wells of 150 mm diameter & 150 feet depth are built at every 30 meters with a total of 375 such pits. Overflow of these pits and water at roads is collected in storm water channels near the footpaths, which is further connected to the nalla at the site boundary carrying excess storm water after recharging. It is also stored in the artificial lake developed at central garden and diverted to 8 open wells in the city. Total volume of this water body is 9000 m³ along with an additional pit of capacity 2375 m³.

4. USE OF IRRIGATION SYSTEM FOR LANDSCAPING:

In Magarpatta City, 30% of the area comprises of green cover. Its maintenance poses a challenge as both human and natural capital are consumed. To tackle this situation, the township has used drip irrigation in its premises.



Problem	Advantages of Drip Irrigation	Savings
Conventional methods like surface irrigation or by using hose-pipes presents issues such as:	Controlled flow of irrigation water	<ul style="list-style-type: none"> • 6 lakh/day litre of water is saved • Increase in operational efficiency • Reduction in manpower cost
Less irrigation efficiency	Minimal / no losses due to evapotranspiration	
High water demand compared to controlled system	Fertilizer and nutrient loss is minimized due to a localized application and reduced leaching	
More laborious work	Soil erosion is lessened	
Excess and improper watering increases the pest and disease incidences	Large areas could be covered in minimum time	

5. ECO FRIENDLY GANESH IDOL IMMERSION:

The fundamentals of water conservation is not just limited to the preliminary activities but also to the festivals and community gatherings at large for preventing water loss.

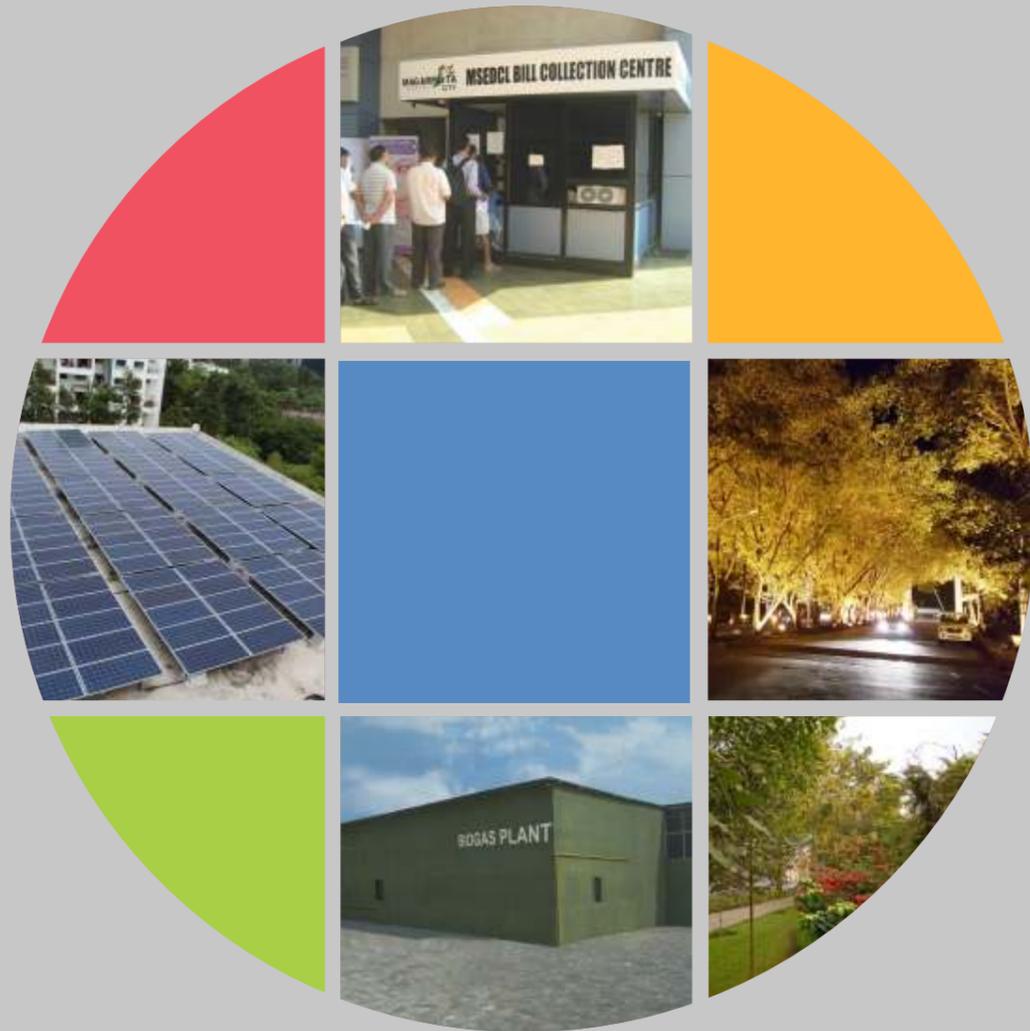
Ganesh Mahotsav in Maharashtra is a revere affair. The participation of the community is large in number for this 10 day extravaganza but the only negative impact is the idol of the devotee being immersed in seas and rivers, thus polluting them with chemicals. After taking concerns of all the respective committees involved, an eco-friendly idea came out of this brainstorming.

Water Tanks are placed at a common point like the playground. In these, the idols are dissolved in Ammonium Bicarbonate. The by-product is only sludge, remaining at the bottom of the tank. It is used as Fakki on site for marking and the remaining supernatant slurry is used to enrich compost used for landscaping.



GANESH IDOL IMMERSION

YEAR	No. of Idols	Quantity of Ammonium Bicarbonate (Kg)	Time required
2016-17	981	5,026	37 days
2017-18	936	4,075	25 days



agni

fire

AGNI



The energy supply systems in Magarpatta City have been designed with future demands in mind. The city focuses on promoting both energy efficiency and increasing the adoption of renewable and clean sources of energy. The lean management system and the operational processes enable fast implementation from concept to action with an eye on improving customer reliability and quality of energy provisioning in the city. On several occasions, these actions have been undertaken independently of any government policy or regulatory requirement. The following sections provide more details on the overall energy framework employed in the township and some of its salient features.

ELECTRICITY SUPPLY IN MAGARPATTA CITY

The Magarpatta Township Development & Construction Company Limited (MTDCCL) is a distributor franchise for Maharashtra State Electricity Distribution Limited (MSEDCL). The distributor manages the operation and maintenance of the electricity distribution infrastructure and billing of electricity within the township. The internal power distribution network for Magarpatta City is managed at 11 kV through a network of four sub-stations. The complete internal power distribution is through underground XLPE insulated, round wired armoured cables. The 11kV power is stepped down to 415V level using the number of 630 kVA distribution transformers at various neighbourhoods.

The table below provides an overview of the total power consumption in Magarpatta City over the past three years. It is pertinent to note that in light of the regular maintenance and adopted quality measures, the average distribution losses within the city have steadily reduced to less than 1% of the total consumption.

POWER CONSUMPTION IN MAGARPATTA CITY

TYPE OF CONSUMERS	AVERAGE NO. OF CONSUMERS			AVERAGE MONTHLY CONSUMPTION (KWH)		
	2015-16	2016-17	2017-18	2015-16	2016-17	2017-18
• HT	188	199	201	1,28,82,225	1,21,20,355	1,21,70,197
• COMMERCIAL	268	298	313	11,37,803	11,82,905	12,35,433
• RESIDENTIAL	7,622	7,638	7,654	13,06,512	12,90,696	13,36,253
• TOTAL	8,078	8,135	8,168	1,53,26,539	1,45,93,956	1,47,41,883
• AVERAGE LOSSES	1.55%	1.13%	0.97%			

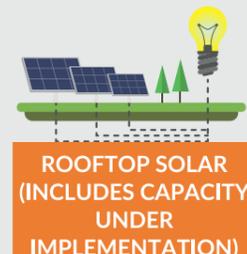
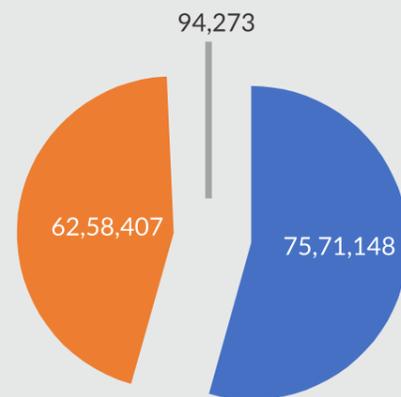
The commercial and residential users within Magarpatta City are billed directly by MSEDCL as per their electricity consumption. Since MTDCCL is entrusted with the maintenance of the common areas, it also operates and maintains the electricity-dependent services in the common areas of the township. This includes applications such as lighting and water pumping, among others. In line with its objective to work towards sustainability, apart from the national grid, MTDCCL meets a portion of its electricity consumption through renewable energy systems installed within the city. The tale on the next page provides a summary of the electricity consumption and electricity generation through renewable sources of energy.

ELECTRICITY CONSUMPTION AND RENEWABLE ENERGY ELECTRICITY GENERATION BY MTDCCCL

DESCRIPTION	NUMBER OF ELECTRICITY UNITS (kWh) PER YEAR
Electricity consumption in common areas	13,923,828
Electricity generation from the 2.1MWp rooftop solar systems	26,02,407
Electricity generation expected from 2.8MWp rooftop solar systems under implementation	36,56,000
Electricity generation from the biogas plants installed in the city	94,273

Additionally, for the reliability of power supply, MCDCCPL maintains a backup diesel electricity generators capacity of about 104MVA.

SOURCES OF ELECTRICITY



ROOFTOP SOLAR PV SYSTEMS

MTDCCL sources the majority of its electricity requirement through MSEDCL. Due to increasing electricity tariffs and with the aim to achieve self-reliance in meeting electricity requirements through local generation of clean energy, techno-economic feasibility studies were undertaken for deploying rooftop solar systems. This included the analysis of annual electricity consumption in the common areas considering the daytime consumption. On basis of the evaluation, the management decided to implement rooftop solar systems in a net-metering mode in a phased manner. Currently, a total capacity of 2.1MWp has been installed across various locations in the city. Additionally, a capacity of 2.8MWp is under implementation and on schedule to become operational by 2019.

Post installation, the actual generation from the installed solar power systems was monitored on a daily basis to verify and ascertain the envisaged benefits. Once the complete capacity comes up, it would be able to meet 45% of the electricity requirement of MTDCCCL. Since the systems currently installed do not use any form of electrical energy storage (in terms of replacing only daytime electricity consumption from the grid), they will help achieve 70% self-reliance. The rooftop solar systems have a warranty of 20 years. Thus, over their long life, not only will they reduce the carbon emissions on account of electricity consumption but also reduce operational expenditure. As compliance with an internal quality policy of verifying the results of any implementation, the power generation is monitored on a monthly basis and regularly reported to the concerned division head. MTDCCCL is now exploring viable energy storage options to increase the deployment of clean solar energy in the township.



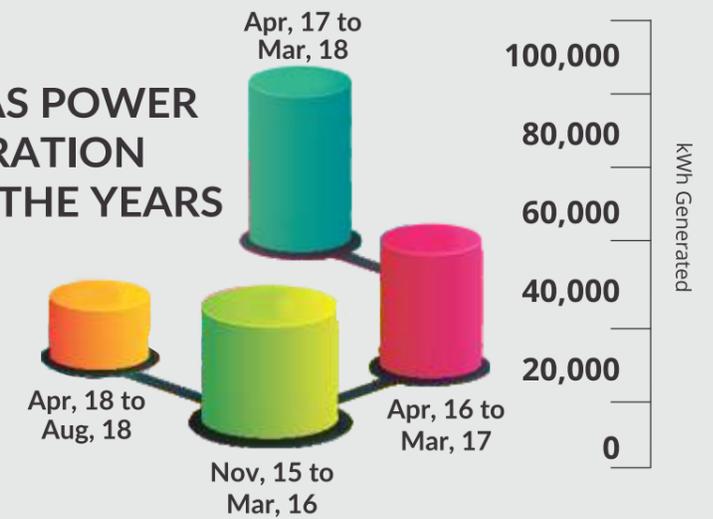
BIOGAS BASED POWER GENERATION

MTDCCL has installed a biogas plant to treat the biodegradable waste collected from the township. In order to make efficient use of biogas and to meet its electricity requirement, it was proposed to generate clean electricity using biogas. The average daily gas generation was measured and based on this, the gas generators were sized to cater to the auxiliary biogas load and the street lights. After approval from the management, a gas based generator system comprising of 2 x 50 kVA Cummins-make was installed in 2015. The generated electricity caters to the biogas plant load during the daytime. The additional generated gas is stored in balloons and used in the evening to power street lighting load.

Since an efficient waste collection and treatment process is already operational, this ensures electricity generation around the year. The electricity generation was recorded to be more than **94,000 kWh** during FY 2017-18.



BIOGAS POWER GENERATION OVER THE YEARS



In compliance with an internal quality policy to verify the results of any implementation, the power generation is monitored on a monthly basis using energy meters and regularly reported to the concerned division head.

"The efforts undertaken for the conservation of the environment are worth applauding. Wet waste is managed in the biogas plant while the dry is recycled. This has reduced CO₂ emissions and other greenhouse gases. If this model is followed universally, our planet would be a happier place to live."
 - Dr Sanjiv Shinde, Resident at A-11, Erica

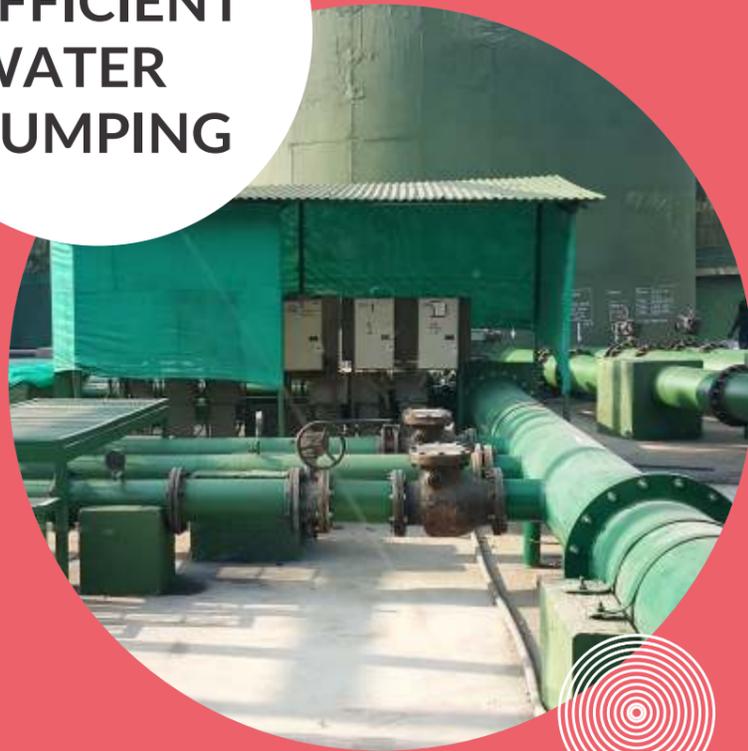
SOLAR WATER HEATERS



In addition to direct electricity generation through renewable energy sources, MTDCCL makes use of solar water heaters to replace the electricity requirement for hot water consumption of the residents. At the time of commissioning the project, it was one of the largest residential solar water-heating systems in India and also Asia's largest solar water heating system run by a single organization. **The current installed capacity of the solar water heaters is more than 10 lakh liter per day of hot water with a collector area of more than 16,000 square meters spread over 273 buildings in the township.**

For equitable distribution of hot water, each unit is connected only to one wing of a building. **These systems help replace electricity consumption to the tune of 16 million kWh annually thereby reducing more than 13,500 tonnes per year carbon emissions equivalent.** In order to maintain reliable operation of these systems, MTDCCL has a scheduled preventive maintenance process in place.

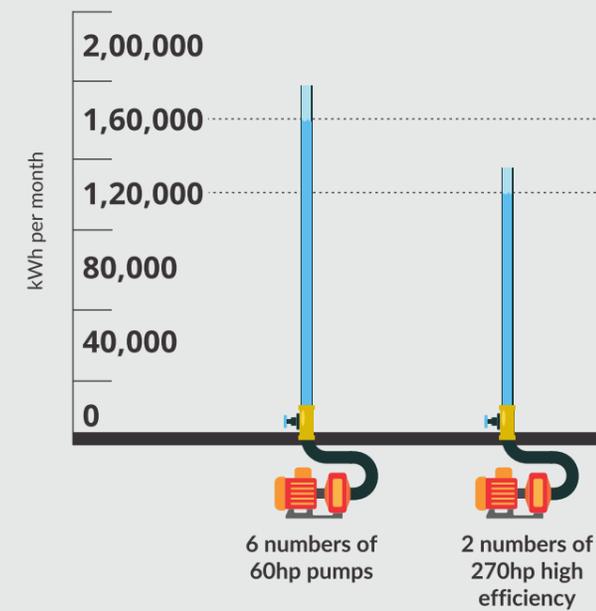
**ENERGY
 EFFICIENT
 WATER
 PUMPING**



Water pumping to supply water within the township is one of the major electricity consuming demand for MTDCCL and also a critical service for the township. In order to reduce the energy consumption and thereby the operational cost of electricity, MTDCCL undertook a detailed evaluation for the existing six numbers of 60hp submersible pumps and compared it with the efficient options available in the market. On basis of the study, the management approved the replacement of existing pumps with centrifugal Kirloskar make LLC (Low Life Cycle cost) design pump model. Two 270hp water pumps were commissioned with one pump in standby to increase operational reliability. The pumps are used for filling an overhead tank through which water is then distributed to all parts of the township using gravity.



Replacement of a larger number of solar pumps helped increase both the efficiency and reliability of operation. The pumps installed are of low lifecycle and with a life of approximately 15 years. This has almost eliminated the need for any maintenance for the pumps which has reduced the time and efforts to ensure the availability of the pumps.



EFFICIENT STREET LIGHTING



The internal road street lighting in the township was previously done using conventional 150W / 250 W Metal Halide fixture & 36W PL fixtures. Apart from consuming more electricity, fault maintenance was a routine issue. With increasing viability of LED fixtures, the management approved a phase-wise replacement of street lights. This smart strategy helped replace the faulty conventional fixtures with the functioning ones which had been replaced. 45W to 84W LED fixtures were used for street lights, 15W LED fixtures were used for Acacia Garden & Mulberry Garden's internal road lighting. Similar to the strategy adopted in other initiatives, the actual power consumption was monitored on a monthly basis to quantify the benefits. Additionally, the light lux levels were also monitored to ensure and ascertain the quality of lighting service delivered. The fixtures came with a warranty of 60 months and a payback of 24 months. **Implementation of this project helped reduce energy consumption by 50% and also vastly reduced the time and effort for fault maintenance.**

COMPARISON OF ENERGY SAVINGS FROM EFFICIENT STREET LIGHTING

Details	Neighbourhood							
	Erica	Ring Road	Phase - 4	Pentagon	Acacia 1-2	Phase - 3	South Gate	Total
Commencement Date	Jan-11	Jun-11	Aug-13	Mar-15	Jan-17	Feb-17	Aug-17	
kWh per month before replacement	45,655	1,76,640	53,238	65,510	6,181	53,142	28,044	4,28,411
kWh per month after replacement	21,044	51,965	26,901	40,666	4,185	35,464	13,668	1,93,893
Percentage savings per month	54%	71%	49%	38%	32%	33%	55%	55%

SMART LIGHTING IN THE BUILDINGS

The buildings were designed to conventionally use 36W tube light for lighting the staircase and the lobby area. Taking note of the utilization pattern of the lighting fixtures in these areas, it was proposed to replace the conventional fixtures with LED fixtures with inbuilt movement sensor as it had less power consumption and a long life. Similar to the strategy adopted in streetlights, a phase-wise installation helped us to replace the faulty conventional fixtures, while the functioning ones were replaced with smart LED lights. On the basis of energy meter analysis before and after installation of these devices, an average of 60% electricity consumption reduction was observed. Post successful implementation of the initial phase, MTDCCL has now mandated to use only smart LED fixtures for better lighting, energy savings, long life, and reduced efforts of the maintenance team.

Similarly, 36W tube light was used for lighting of the parking area, 2x18 W CFL downlights were used for lobby areas and 70/150 W metal halide fixtures were used for façade lighting. These were replaced with 18W tube lights for parking, 15W downlight for lobby lighting and 35/70 W LED for façade lighting. **This helped us achieve 50% energy savings.**

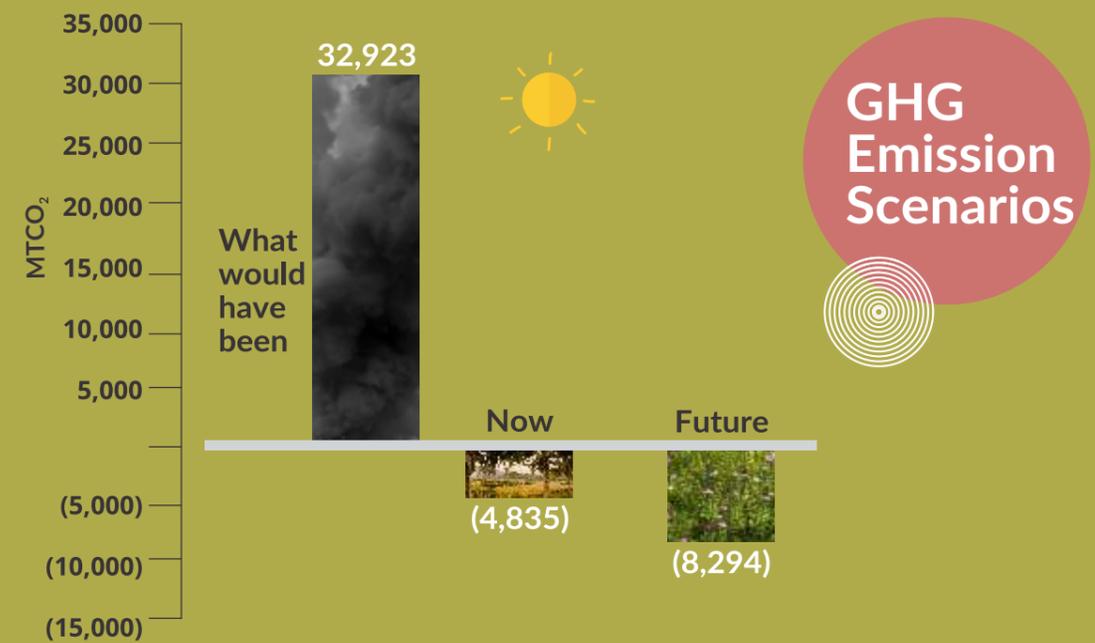


CARBON FOOTPRINTING FOR MAGARPATTA CITY

MAGARPATTA CITY - A CARBON-POSITIVE TOWNSHIP

Magarpatta City has regularly been calculating and monitoring its carbon footprint. It reports on all 6 greenhouse gases as listed under the Kyoto Protocol - Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur Hexafluoride (SF₆). Magarpatta City follows a gate to gate approach for calculating its GHG emissions. Its direct emissions (Scope 1), includes emissions from the use of owned vehicles; while the indirect emissions (Scope 2) accounts for emissions from the use of purchased electricity and Scope 3 accounts for business travel. In the reporting year, the carbon footprint of Magarpatta City illustrates 3 scenarios viz. "What would have been" if no initiatives on renewable energy and energy efficiency were undertaken; "Now" where such initiatives have been implemented; and "Future" when all solar water heating infrastructure would be operational.

As compared to 32,923 MTCO₂e in the business as usual scenario, in the reporting period, Magarpatta City's carbon footprint reveals that the City is carbon-positive.





aakash

sky

AAKASH



CONNECTED COMMUNITY LIVING: SPORTS, CULTURAL, SOCIAL, HEALTH, TRAINING & RELATED ACTIVITIES

Magarpatta City is an example of participatory community management and living. At the highest level, there is a Citizen Council which comprises one representative for every 75 residents in the city. Out of which, **33% of the representatives are reserved for women to promote equality and diversity.** In the reporting year, the Council has 112 members. The Citizen Council acts as the advisors to city administration on the basis of local self-government. The Aakash umbrella includes the pillars responsible for the community engagement, enhancement of sports, education and cultural activities. Each of these areas has its own sub-committee which works closely with the management to ensure effective community living.

MAGARPATTA CITY COUNCIL EVENTS

Community living and celebrating milestones and festivals have always been an integral part of Magarpatta City. Since its inception, we have been celebrating different festivals together as shown below. Lohri and Holi are the two new entrants to the list.

CULTURAL COMMITTEE



GANESH FESTIVAL



NAVRATRI-DANDIYA



DEEP MAHOSTAV



DIWALI MELA



KITE FLYING



CHRISTMAS EVENT



LOHRI CELEBRATION



HOLI CELEBRATIONS

SPORTS COMMITTEE



SPORTS FESTIVAL



CHESS WEEKENDS

NATIONAL FESTIVAL



REPUBLIC DAY



INDEPENDENCE DAY



SPORTS

“ Take care of your body. It's the only place you have to live ”
 - Jim Rohn

The management of Magarpatta City got clearly motivated by the advice of Jim Rohn in making sports a practice here – giving utmost importance to fitness and mind in shaping up both the residents and the city. It not only promotes activities but ensures the enthusiastic spirit throughout the township. **During sports event of 2017-18, as many as 1,672 participants across age group ranging from 3 to 76 pushed themselves to be a part of that event.**

Following sports are played at Magarpatta City:



CRICKET



FOOTBALL



BADMINTON



SKATING



BASKETBALL



GYMNASTICS

The annual sport events also include Chess, Table Tennis, Lawn Tennis, Cycling and Mini Marathon.

SOME NOTABLE ACHIEVEMENTS

- Chess prodigy Master Nivaan Khandadia, 6 years old, was felicitated by Magarpatta Citizen Council as the **Youngest rated chess player in India** and ranks 10th in the world rankings.
- Gymnastics was introduced this year. Master Harshwardhan Patil and Ms Vanshika Shah have been **selected for an International event** to be held in Philippines later this year.
- **Women's cricket** was introduced this year.

CULTURE



The concept of integration was not only limited to aesthetics and resources but its scope was extended to the residents in order to strengthen the neighbourhoods; and this bond resulted in various festivals being celebrated and activities undertaken by the cultural committee.

“ A Community- living experience with unity in diversity ”

- Mr. K M Gopinath, Upkeep Committee, K - 703 Cosmos

“ Who gives you 400 acres to walk?
 My home and work were hardly a mile apart. Safety, clean environment and responsible citizens working in harmony are the reasons that make Magarpatta City – a special township.
 The council was set up in 2007-08 and I have had an 11 year of voluntary association with them.
 The committee gives:

- Freedom to exhibit their creativity
- Platform for talent development
- Fair system and great support from management ”

- Mr. Iyer, Resident since 2003, Worked for EDS in Tower 4

“ Lucky to be a citizen of Magarpatta city.
 It is a peaceful place and there's no need to step out of the city as all the amenities are being taken care of.
 Not only there is plenty of green cover but the spirit here encourages people to be self-dependent and in the process creates mini entrepreneurs.
 Also, the committee takes care of the Senior Citizen community by providing yoga hall free of cost, having a laughter club and organizing a Walkathon. ”

- Mr. Gavas , First Chief Engineer, Magarpatta City



SOCIAL WELFARE ACTIVITIES BY MAGARPATTA CITY

WORK FOR CONSTRUCTION LABOURER'S CHILDREN

Over 500 children of labourers from infancy up to 12 years of age were given formal and informal education through NGOs. In the 3rd phase, a Crèche named Jagruti (which means awakening) was built for them in Magarpatta City. These children were provided with nourishing breakfast, lunch, evening snacks, uniforms and toys. They were given regular medical and health check-ups for a healthy life. Their practical training included basic awareness of the environment, learning alphabets, signage, road signs, greetings, poems, group songs, mannerisms, body cleanliness, dental care and hygiene. Students were taken on theme picnics and study tours gave them an exposure of the outside world. Four children from this Crèche have been nominated for free education in the government aided schools.

VACCINATION CAMP FOR CHILDREN OF LABOURERS

A vaccination camp, in association with the Kalyan Charitable Trust, was conducted, where over 600 children of labourers up to the age of 5 years were vaccinated free of charge for Typhoid and Hepatitis-B. Vitamin-A supplements were provided for nourishment of these children.



MEDICAL HEALTH CHECKUP FOR CONSTRUCTION LABORERS

A medical health checkup was held at Magarpatta City site office for over 2,500 construction workers of Magarpatta City in July, 2007. Doctors and consultants from Noble Hospital ensured that the labourers were examined and diagnosed for blood tests, blood pressure and in general.



CORPORATE SOCIAL RESPONSIBILITY ACTIVITIES BY MAGARPATTA CITY

• GAYDHARA POND, WADKI TALUKA, HAVELI DISTRICT, PUNE:

The pond was full of silt due to which the water storage capacity had decreased. Hence, the pond was de-silted and deepened and around 29,000 cubic meter silt was removed from the pond. As a result, the capacity of the pond to store water increased.

Since the last three years, the pond is filled with rain water. Hence, the problem of scarcity of water is resolved. Now, this water is being used for drinking and agriculture needs. This activity has also benefitted the surrounding villages as the water table level of wells and bore wells have increased.

• WATER CONSERVATION INITIATIVES:

Jawalarjun village is located 8 km downstream from Nazare dam on Khara River. The village was facing scarcity of water for drinking and agricultural purpose. The reason for this scarcity of water was that the river was full of silt, and there were no reservoirs to store water.

Hence, the river was partly de-silted and excavated. Afterwards, six cement concrete bandharas were constructed across the Khara River, as a result reservoirs were created to store water. Thus, 22 MCFT water got stored due to the rain and the problem of scarcity of water was resolved. Now, there is ample amount of water to satisfy the village's drinking and agriculture needs. This activity has also benefitted the surrounding villages as the water table level of wells and bore wells have increased.

During the period April to May 2015, as a part of its CSR activities, the Khara river was partly de-silted and deepened and by the period May to June 2016, complete de-siltation and deepening of the river was accomplished. The capacity of the river to store water was increased to full extent. Hence, the problem of scarcity of water was eradicated to satisfactory level. The village was able to carry out the cultivation activities and the problem of drinking water was also resolved.



• **OFFICE OF COLLECTORATE, MALIN VILLAGE HOUSING PROJECT:**

On Wednesday, 30th July 2014, a landslide occurred in the village of Malin in the Ambegaon taluka of the Pune district in Maharashtra, India. The landslide was believed to have been caused by a burst of heavy rainfall. 151 villagers were buried in that landslide. Post this disaster, the government proposed a housing project to rehabilitate the people of Malin Village. Magarpatta Township and Development Co. Ltd. contributed a sum of ₹ 10, 00,000 towards the construction of these houses to ensure the villagers could get a safe place to live. Today, 67 strong earthquake resistant houses are providing accommodation to the rehabilitated Malin villagers.

• **ST. MARY'S SCHOOL:**

St. Mary's School, established in 1866, is one of the oldest and amongst the well-known schools in Pune. Magarpatta City Development and Construction Co. Ltd. contributed in repairing and renovating the toilets, sewage and storm water system of the school.

• **COMPUTER ACCESSORIES:**

For consecutive years - 2017 and 2018, Magarpatta Township and Development Co. Ltd. supplied computer hardware and accessories such as interactive devices, cameras, laptops, projectors, speakers, electronic tablets, Wi-Fi dongles, learning software etc. to make digital classrooms in Zilla Parishad schools. Because of this initiative, the schools are now well equipped to deliver comprehensive education through state of the art technology.

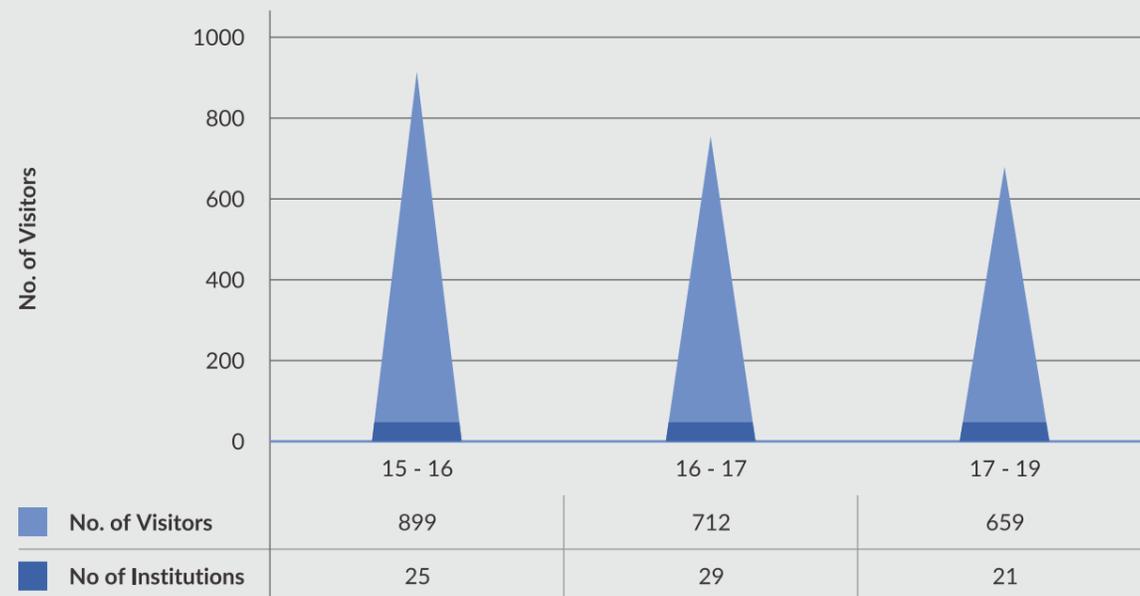


A BRIEF ACCOUNT OF CSR EXPENDITURE BY MAGARPATTA CITY IS ENCLOSED.

YEAR	PROJECTS				TOTAL
		2015-16	2016-17	2017-18	
1	GAYDHARA POND (WORK)	25,96,405			25,96,405
2	WATER CONSERVATION		1,38,26,355		
3	OFFICE OF COLLECTORATE, PUNE		10,00,000		
4	ST. MARY'S SCHOOL		10,00,000		
					1,58,26,355
5	WATER CONSERVATION			12,61,929	
6	COMPUTER/ACCESSORIES			39,90,480	
					52,52,409
					2,36,75,170

MAGARPATTA CITY'S CENTRE FOR LEARNING AND THE DISCOURSE OF SUSTAINABLE DEVELOPMENT

2015-16		2016-17		2017-18	
No of Institutions	No. of Visitors	No of Institutions	No. of Visitors	No of Institutions	No. of Visitors
25	899	29	712	21	659



VISITING INSTITUTIONS:

- YASHADA
- NICMAR
- CIDCO
- Human Settlement Management Institute (Research and Training Wing HUDCO)
- CWPRS – Central Water and Power Research Station.
- DY Patil School of Architecture
- MIT Institute of Design
- MEASI Academy of Architecture
- RICS School of Built Design



WAY FORWARD AND SUSTAINABILITY TARGETS

Sustainability is an ever-improving journey. Magarpatta City, through its various practices as enumerated below, always took pride in taking initiatives to create a city that was sustainable economically, environmentally, and socially and the inaugural sustainability report is the first step to start to create a new destiny. We remain as committed to learning and improving on our existing sustainability efforts as well adopting new sustainability practices. The vision of Magarpatta City and the efforts made towards the realization of the vision have helped the city truly move towards 'sustainable and carbon positive operations day by day' in common areas footprint. The sense of community living is truly defined in Magarpatta City. The organisation is a torchbearer in many green initiatives and community living and to make it more equal and accessible to its citizens, the new mobile application (App) will be launched to enhance this experience. This will also help the organisation to make use of the data collected by the various services and entry points in the systems to create more transparent and efficient work systems.

- **Launch Mobile App based on present community connect structure for various services of township by 2019**
- **Operational WiFi for entire Magarpatta City to be completed by 2019.**

The sanitation and waste management practice are one of the best practices in Magarpatta City. Magarpatta City will enhance the clean city and climate action goals by laying foundation for waste to wealth. Currently, each drop of water is recycled and reused and our target is to reduce the demand for water in general purpose use. The organization is planning the following efforts on these fronts:

- **Increase the treatment capacity of biogas plant by 2019**
- **To become self-sufficient non-recyclable waste management by 2023**
- **Reduce water consumption by 5% through adopting various water saving techniques by 2021**

Solar energy is the future of renewable energy resources. Although Magarpatta City has started its endeavour long ago, the organization is assessing more avenues to harness solar power in order to make the city self-governing in terms of energy. Magarpatta City is home to many international companies and is still growing at a tremendous pace. It will continue to look at the new green energy supply options as well as urging the use of renewable energy in addition to operating energy efficient systems to drive smart usage.

- **Convert all the common area lighting fixtures in the residential sector to LED by 2020**
- **Install 2.8 MW of roof top solar PV plant to meet the common area power requirement by 2020**

Low carbon and emissions free transport will support the green city initiative.

- **Increase the use of sharing transportation i.e. Bus, Car, Cycle by 2020**
- **Install electric charging station within Magarpatta City by April 2020**

Magarpatta City is also envisaging the options of bringing in electric transport within the city.

Special training for the citizens and employees regarding disaster management will help the city to be future ready.



APPENDIX

AREA STATEMENT OF VARIOUS BUILDING TYPOLOGIES AT MAGARPATTA CITY

RESIDENTIAL - AREA STATEMENT

Code of Sector	Cluster Name	Area of Plot (Sqm.)	Const. Area (Sqm.)
MPT-03	Daffodils	29,768.89	46,454.11
MPT-4+5	Cosmos	74,112.29	1,07,186.27
MPT-7+9+10	Heliconea	17,556.07	26,507.25
MPT-08	Gravellia	25,692.39	43,370.87
MPT-11	Iris	38,639.92	86,311.83
MPT-13+14+15	Jasminium	97,260.23	1,45,249.63
MPT-23+24	Laburnum	68,143.25	1,07,380.00
MPT-26	Roystonea	45,250.82	67,574.51
MPT-25	Sylvania	26,607.62	40,966.18
MPT-20	Trillium	39,300.00	60,734.39
MPT-06	Erica (Row House)	20,929.98	14,038.18
MPT-01	Acacia-1	27,498.54	15,331.20
MPT-02	Acacia-2	26,441.16	15,651.99
MPT-27	Acacia-3	31,260.10	17,303.79
MPT-28	Acacia-4	16,867.23	9,175.31
MPT-16	Mulberry-1	15,940.78	8,853.12
MPT-17	Mulberry-2	22,861.62	12,951.78
MPT-18	Mulberry-3	37,618.99	22,920.10
MPT-19	Mulberry-4	28,213.85	16,562.15
Total		6,89,963.73	8,64,522.66
In Acre		172.49	216.13

AMENITIES - AREA STATEMENT

Code of Sector	Cluster Name	Area of Plot (Sqm.)	Const. Area (Sqm.)
MP-7+8	School	6,300.00	2,574.00
MP-9+10+11	School	39,300.00	9,573.21
MPTA-01	Destination Center	14818.53	29,601.67
MPTA-2+3+4	Mall	20189.21	16,25,965.07
MP-12	Corporate Office	10,000.00	5,076.46
MP-3+4+5	MI Collage & Ground	39,300.00	8,925.51
Total		1,29,907.74	16,81,715.92
in Acre		32.48	420.43

PERCENTAGE QUANTITIES OF FLY-ASH AND CRUSHED SAND USED FOR VARIOUS CONSTRUCTION APPLICATIONS AT MAGARPATTA CITY

Sr.No.	Description	% of Fly Ash	% of Crush Sand
1	Concrete		
	M-10	2.03%	48.33%
	M-15 WP	0%	62.12%
	M-15 IPS	3.08%	52.10%
	M-20 Trimix	4.54%	41.58%
	M-25	3.18%	39.53%
	M-30	3.55%	38.92%
	M-35	3.04%	37.74%
2	Masonry		
	UCR Masonary	3.18%	89.60%
	Brick Masonary	3.18%	89.59%
3	Plaster		
	Sanla / Tar Plaster	4.70%	84.59%
	Sand Faced Plaster	4.70%	84.62%
4	Waterproofing		
	Terrace WP	3.80%	87.24%
	Toilet WP	4.20%	85.97%
5	Flooring		
	Mortor for Flooring	6.83%	75.45%

COMMERCIAL - AREA STATEMENT

Code of Sector	Cluster Name	Area of Plot (Sqm.)	Const. Area (Sqm.)
MPTCC-01	Cybercity	56,666.82	64,972.47
MPTCC-02	Cybercity	65,601.90	90,068.93
MPTCC-04	Cybercity	51,415.06	74,577.67
MPTCC-03	SEZ	1,19,800.00	97,970.84
MPT-21+22	SEZ		96,239.68
MPT-12	Pentagon	41,289.79	71,373.15
Total		3,34,773.57	4,95,202.73
In Acre		83.69	123.80

**QUANTITIES OF SOIL, SHADU CLAY AND MURUM EXCAVATED DURING CONSTRUCTION
VIS A VIS THEIR QUANTITIES UTILIZED FOR CONSTRUCTION**

Sr. No.	Sector	Project Name	S. Nos.	BC soil Excavation quantity in m ³	BC Soil used quantity in m ³	Shadu Excavation quantity in m ³	Shadu used quantity in m ³	Murum Excavated quantity in m ³	Murum Used quantity in m ³
1	MPT-20	Trillium	1,30,138	23328	23328		3142		
2	MPT-25	Sylvania	138	12963	12963		2023		
3	MPTCC-3 & MPTCC-21, 22	SEZ	138 to 142	77370	77370		12872	178832	178832
4	MP 4	Mgmt. Inst.	130	2995	2995			6061	6061
5	MP 4	Play ground	130	3257	3257				
6	MP-18 & 19	Malb - 3, 4	1,29,130	4885	4885				
7	MPT-27, 28	Acacia-3 & 4	1,41,142	11217	11217				
8	MPT-A2+ A3+A4	Mall	1,38,139	31802	31802	53384	11033	72861	72861
9	MP-13	Central Garden	1,41,142				24314		
10	All Road			7751	7751				
			Total	1,75,568.00	175568	53,384.00	53384	2,57,754.00	257754

SUSTAINABLE DEVELOPMENT GOALS - LINKAGES WITH MAGARPATTA CITY

UN - Sustainable Development Goals (SDG's)	Significant Sustainability Actions by Magarpatta City	Page No
1 NO POVERTY	<ul style="list-style-type: none"> Provided livelihood and basic services to the labour community A disaster risk management plan in place 	49, 55-61
2 QUALITY EDUCATION	<ul style="list-style-type: none"> Ensuring that all girls and boys in labour community complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes Through building technical and vocational skills of youth for employment, decent jobs and entrepreneurship 	47, 48
3 CLEAN WATER & SANITATION	<ul style="list-style-type: none"> Rain water harvesting Waste water treatment plant Building toilets in schools 	21, 22
4 AFFORDABLE & CLEAN ENERGY	<ul style="list-style-type: none"> Used Solar panels & solar water heaters and increased the share of renewable energy in the total energy mix 	88, 92
5 DECENT WORK & ECONOMIC GROWTH	<ul style="list-style-type: none"> Turned farmers into entrepreneurs' Created direct and indirect employment to over 80,000 people 	48
6 INDUSTRY, INNOVATION & INFRASTRUCTURE	<ul style="list-style-type: none"> Upgrade infrastructure to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies Support domestic technology development, research and innovation through imparting knowledge through the City's Centre for Learning 	38, 112

UN - Sustainable Development Goals (SDG's)	Significant Sustainability Actions by Magarpatta City	Page No
7 REDUCED INEQUALITIES	<ul style="list-style-type: none"> Empowering and promoting the social and economic inclusion of communities across various economic strata Adopting policies – wage and social protection policies and progressively achieve greater equality 	49
8 SUSTAINABLE CITIES & COMUNITIES	<ul style="list-style-type: none"> a.) Accessible green spaces - Aditi Gardens with a diverse range of flora. Keeping Air quality- way under the prescribed limits b.) Effective transport system along with walk to work & walk to school concepts. c.) Waste management facility - biogas plant 	65, 73, 89
9 RESPONSIBLE CONSUMPTION & PRODUCTION	<ul style="list-style-type: none"> Striving to achieve sustainable management and efficient use of natural resources, by replacing with recyclable construction materials Striving to achieve environmental sound management of waste throughout the life cycle Instituting programs for reducing waste generation through prevention, reduction, recycling and reuse Instituting a system of integrating sustainability information in the reporting cycle 	43, 44, 88-98
10 CLIMATE ACTION	<ul style="list-style-type: none"> Promoting mechanisms for raising capacity of stakeholders for effective climate change-related planning and management Implementing meaningful mitigation actions to tackle the impacts of climate change 	112
11 LIFE ON LAND	<ul style="list-style-type: none"> Taking actions to reduce degradation of natural habitats Integrating ecosystem and biodiversity values into local planning and development process within the City 	65-71



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102-4	Location of operations	A	
102-5	Ownership and legal form	9	
102-6	Markets served	6	
102-7	Scale of the organization	11	
102-8	Information on employees and other workers	48	
102-9	Supply chain	14	
102-10	Significant changes to the organization and its supply chain		
102-11	Precautionary Principle or approach	20, 21, 23	
102-12	External initiatives	49	
102-13	Membership of associations	15	
STRATEGY			
102-14	Statement from senior decision-maker	D	
ETHICS AND INTEGRITY			
102-16	Values, principles, standards, and norms of behavior	10	
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102-40	List of stakeholder groups	25	
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GRI 102: GENERAL DISCLOSURES 2016

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102-52	Reporting cycle	A	
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GRI 205: ANTI-CORRUPTION 2016

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GRI 400: SOCIAL TOPICS

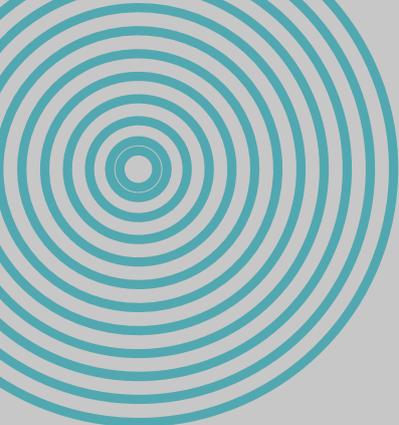
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GRI 400: SOCIAL TOPICS

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