

“ENCAPSULATION OF AMELIORATED KATHMANDU”

Manifestation of eco-techno based smart Kathmandu



DESIGN KATHMANDU CONTEST

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Title of the report: Encapsulation of Ameliorated Kathmandu

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INTRODUCTION

Kathmandu is the capital of the country, the major urban city of Nepal and typically known as a city of temples. With the only international airport welcoming visitors to the city, Kathmandu has established itself as the most populated and urbanised city. It is the centre of attraction for business, health, education etc. Been that Kathmandu is now densely populated and haphazardly urbanised. Considering these facts, this report is written to address the present status of Kathmandu and to present the future design of Kathmandu through our vision. Our report is titled Encapsulation of Ameliorated Kathmandu which is basically the briefing of the Kathmandu that we dream of. The report is built with the motivation to have the technology and environment-friendly Kathmandu and promote it as a smart city. The project aims to deal with the problems prevalent at the present and provide a solution that not only tackles the problems of the present status rather provides the proper insight into the future of Kathmandu. The purpose of the report is to help the general public, as well as the government, acknowledge the vision and ideas that the youth possess about the future of Kathmandu. The report basically begins with the introduction of the team members and the project followed by the present status of Kathmandu along with future design, conclusion and references.

RESEARCH ON PRESENT STATUS OF KATHMANDU :

History:

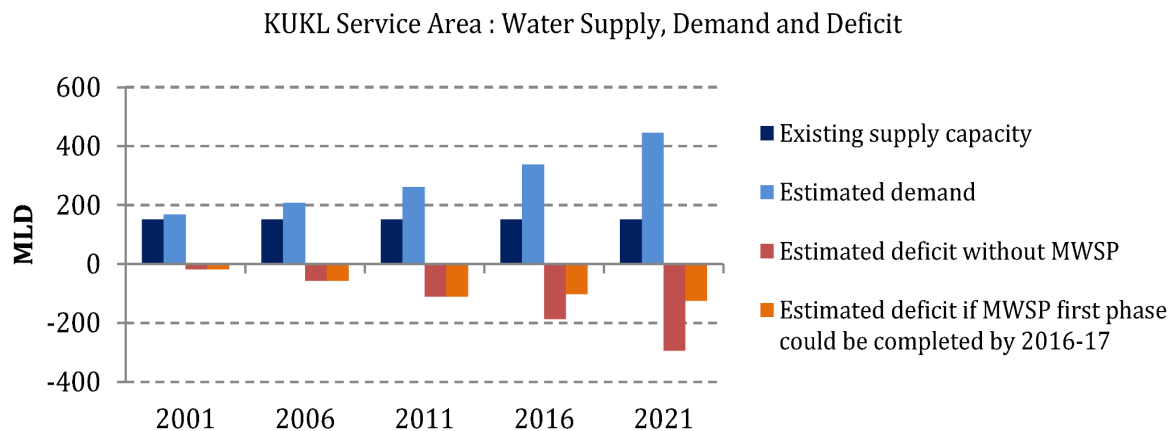
Kathmandu believed to be created by Manjushree with this sword passing out the lake water has seven groups of historical monuments listed in world heritage sites by UNESCO including Pashupatinath temple, Swayambhunath temple, Boudhanath, Basantapur durbar square etc. Reflecting its long history, Kathmandu has a huge variety of cultural and heritage sites such as settlements, palaces, monuments, temples and monasteries, historic ponds, taps, and finely built public wells of historical importance. These historical and religious monuments and festivals of national and international importance play a huge role in attracting tourists to the country.



Kathmandu took its name from the temple Kastamandap in the 16th century which is believed to be built from the wood of a single tree. Lying in the lap of two holy rivers named Bagmati and Bishnumati, the valley serves as a cultural and political hub of Nepal with a mixture of cultures, many recently arrived from different parts of Nepal while Newar culture existed since its inception and still exists vibrantly.

Administration and Government status:

Kathmandu Municipal Corporation (KMC) is the chief nodal agency for the administration of Kathmandu. The Municipality of Kathmandu was upgraded to a metropolitan city in 1995 as Kathmandu Metropolitan City (KMC). Kathmandu Metropolitan City has the strongest power in transforming the looks and performance of Kathmandu. Though the development works are being carried out by KMC from place to place, the pace of work is making people disappointed and are losing trust towards it while some of the development works are halted which is quite upsetting. The words that the mayors and deputy mayors put forward are not getting implemented as per needs and demands. Kathmandu Metropolitan City and its administration is lacking proper developmental plans and policies that can actually support sustainable growth either in term of not affecting the environment while carrying out developmental projects or as the whole implementation of policies to promote the ecosystem and natural environment of Kathmandu Valley.



The metropolitan city's administration is lagging behind in terms of fulfilling the demands of its people on fuel, water etc. It can be clearly seen that the fulfilment, capacity and demand is not stable whereas people's needs are not always addressed and KMC is not showing its concern towards it.

Geography and Climate:

Kathmandu Valley is situated in the northeast of Nepal, with 1\12 of the total population at an average height of 1350 meters above sea level. The valley's location is the main reason for its economic and cultural development as it served for hundreds of years as a gathering place for the traders as it was a point of intersection of trans-Himalayan trade routes.

Kathmandu valley is one of the blessed cities in the entire world with the most favourable climate and temperature which is generally mild, warm and temperate where the annual

average temperature is just 16 degree Celsius with the highest recorded temperature of 31 degree Celsius and the lowest recorded temperature of 0.8 degree Celsius. The hydro-meteorological data analysis of Kathmandu valley showed a distinct increasing trend in temperature with an average increase of 0.056 degree Celsius per year in 2008 while it increased to 0.12 degree Celsius per year in 2020. Due to the increase in the population resulting in the increase in vehicle users, construction materials, burning of wastes, air pollution has been a major issue in the Kathmandu Valley. In February 2017, Kathmandu was ranked the seventh most-polluted city in the world with a mark of 103.5 on the air quality index while on January 5 this year, Kathmandu was ranked the worst with 450 in the index. In Nepal and Kathmandu, the annual premature deaths due to air pollution reached 37,399 and 9,943 respectively, according to a Republica news report published on 23 November 2019. This indicates, around a quarter of the total deaths due to air pollution in Nepal are in Kathmandu.

Demography: Population, age structure, ethnic groups, religion:

With a population density of around 30000 people per square kilometre or 52,550 residents per square mile, the current metro area population of Kathmandu in 2021 is 1,472,000, a 3.37% increase from 2020 in just 6 months. The ideal population density for a country to be ecologically stable is 50-100 people per square km while Kathmandu has 3000 times greater population density and it is expected to increase by 4000 times in the next 15 years if it keeps on increasing at the same pace. This excessive population density is made possible by the relatively small surface area that the city has, which comes to a total of approximately 50 square kilometres (19 square miles). This shows the urban accumulation of Kathmandu, which typically includes Kathmandu's population in addition to adjacent suburban areas despite very small areas resulting in the degradation of the forest areas and different other environmental aspects.

The following table shows the statistics of the population in the last five years.

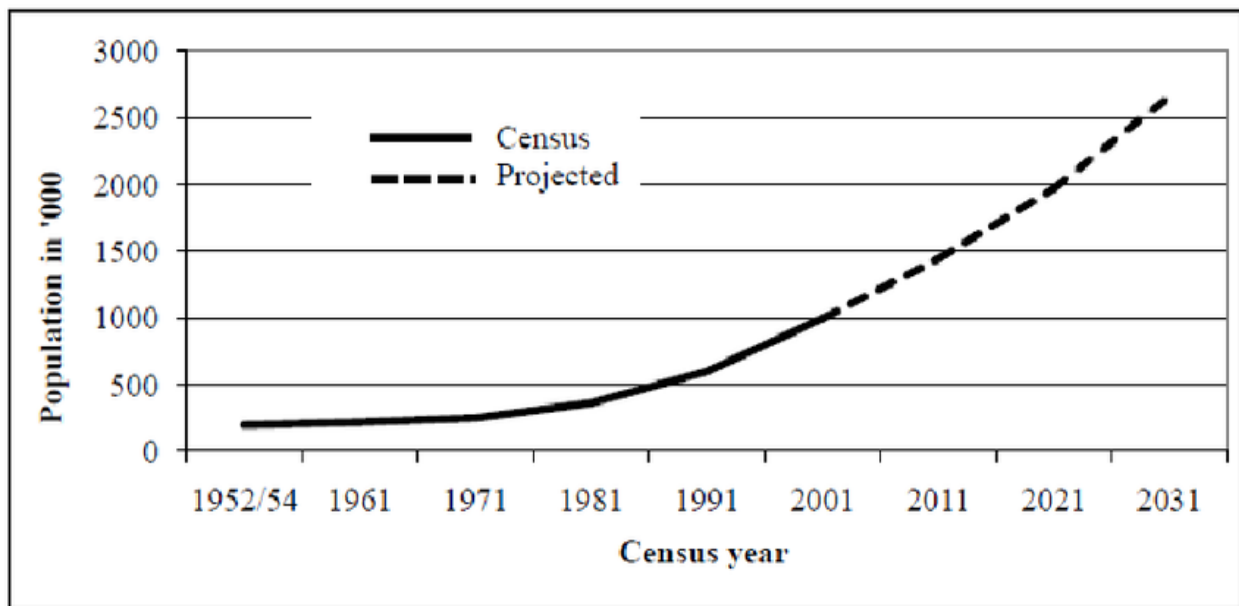
2021	1,472,000	3.37%
2020	1,424,000	3.49%
2019	1,376,000	3.46%
2018	1,330,000	4.15%

2017	1,277,000	4.07%
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The table indicates that the status of the population is quite fluctuating, bringing different challenges in health, education, transportation, environment etc. every year.

Moreover, Kathmandu is a very ethnically and culturally diverse city where Newar are the largest ethnic group at 30% of the population, followed by the Matwali at 25% -- which includes the Tamang, Gurung, Sunuwar, Magars, and others -- the Khas Brahmins at 20%, and the Chettris at 18.5% of the population.

Hinduism and Buddhism are the two primary religions in the city while Nepali is the most commonly spoken language, as well as Nepal Bahasa and English. Hindi is also spoken and understood by most of the educated population.



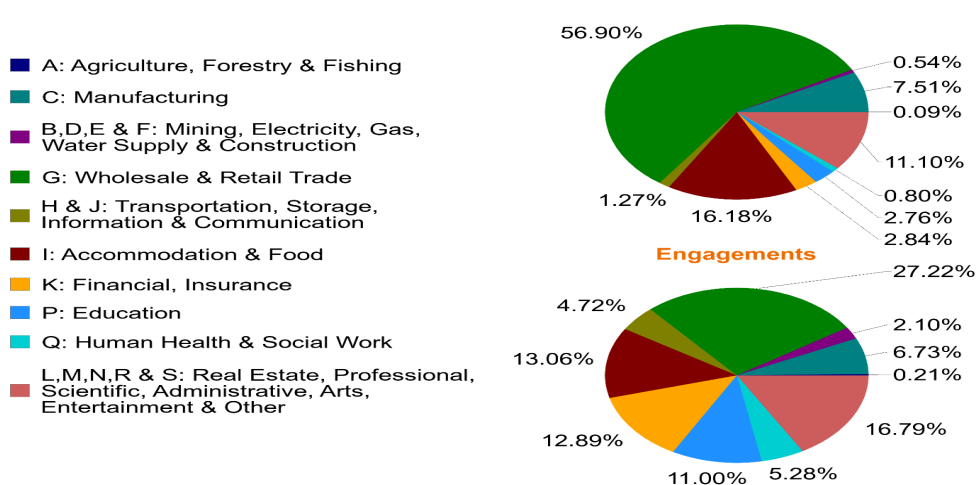
The above graph depicts the status of the population in the next fifteen years. It is quite evident from the graph that there is going to be a rise in the population of the city as the years pass by.

Economy: City, Media and Technology, Tourism:

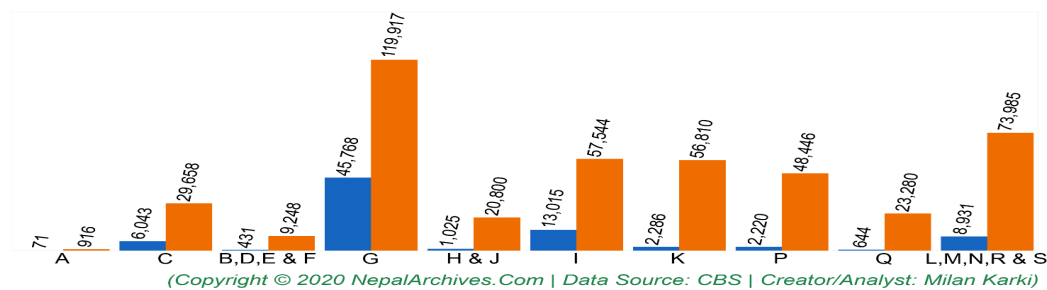
Kathmandu being the capital city of Nepal has one of the most stable economies compared to other cities. The city is also the economic hub of Nepal, as most of the economic activities are carried out within Kathmandu. The challenges and opportunities in the city have attracted people from various parts of the country. With the migration of talented and qualified individuals, the city has become the most competitive city in the country and has flourished. In recent years, the conventional agriculture system has gone under significant transition to commercial farming such as floriculture and horticulture. The city has been a platform for various industries and

factories. The most important aspect is that the major industries are situated on major highways in the periphery of Kathmandu. The government has also taken some environmental measures to ensure environmental sustainability in the city while setting up industries and factories. The service sector too is of increasing importance in Kathmandu, providing trade/business, transport and a wide range of other services ranging from tourism to hotels, restaurants, pubs and bars. Kathmandu is considered to be the main educational and medical treatment hub in the country and major educational institutes and hospitals, both private and public, are established here. New commercial services such as internet/cyber parlours, computer, photocopying, communications, IT firms and consultants have played a huge role in the economic status of the city. Several policies and economic reforms have been introduced from time to time in the city but these inclusions haven't been able to make the city autonomous and independent economy.

**Kathmandu Metropolitan City, Kathmandu District
Ratios of Establishments & Engagements (NEC 2018)**
Economic Activities by Nepal Standard Industrial Classification (NSIC)



Establishments vs. Engagements (Ratio: 5.48 Persons per Establishment)
■ Establishments (Total: 80,434) ■ Engagements (Total: 440,604)



Transport: Buses, Roads, Cycling, Cable Car:

The population has been ever-growing in Kathmandu and this has impacted the transport a lot. The number of buses and other vehicles have increased from public to private ones. We always

find people hanging on buses struggling for seats to reach their destination. The increase in transport has also imposed the situation of fuel crisis and pollution. The conditions of roads are really not that good in Kathmandu, taxis, private cars and jeeps and cycles (motorbikes and general cycles). The facility of cable cars is only available in Chandragiri and it is used for a 11 km off drive to the top of the hill. Kathmandu also consists of the only international airport of Nepal, Tribhuvan International Airport and it is run by the Civil Aviation Authority. Kathmandu has been connected to various parts of Nepal through highways such as BP Koirala Highway, Prithivi Highway, etc. Sixty Nine infrastructural projects have been completed in the six months of the current fiscal year of 2020/21. Blacktopping and repairing of roads, construction of two overhead bridges and many more projects have been completed. The present status seems to be quite good and there is complete utilization of lockdown for executing the projects.



Education: Primary, Secondary, Universities:

From the establishment of the oldest school (Durbar High school) and the oldest college (Tri-Chandra College) in Kathmandu to this day, enrichment in the educational status of Kathmandu has come a long way. According to the data of the Ministry of Education (Education in figures 2017), the total population of Kathmandu is 1,699,288 out of which there are 394,651 students (grade 1-12) pursuing education in the community and institutional schools. There are 302 community schools and 1,060 institutional schools in Kathmandu. The oldest and most distinguished university in Nepal, the Tribhuvan University and the second-largest university, the Kathmandu University both are located in Kathmandu. The literacy of Kathmandu has progressed from about 50% to 89.2% according to some of the sources. It is actually not surprising that the best schools and colleges of Nepal are located in Kathmandu. There has always been a trend where thousands of students from various parts of Nepal come to Kathmandu to get admission to the schools and colleges here. Kathmandu is also the hub of various international degrees like A levels, IB diploma, international bachelor's degree, etc. There has recently been a change in the curriculum of primary and secondary schools. A levels and IB diploma have also been rising as a core curriculum in Kathmandu. The marking scheme

has been changed from percentage to grades in order to increase the passing rate and this change signified the literacy status of Kathmandu even more. University-level courses include bachelors, masters and PhD in streams ranging from science and management to arts. Kathmandu is also the best destination for students to pursue medical degrees. Institute of Medicine(IOM), the only tertiary centre of Nepal is also located in Kathmandu and is considered to be the primary destination to obtain medical degrees. Kathmandu also promotes vocational and technical education and training through various institutions. Despite having more facilities and opportunities in Kathmandu, every year thousands of youth depart abroad to obtain higher degrees. The reason for this outflow is due to the fact that although Kathmandu has become a hub for education, it has lacked to provide a better quality of education(recognized by international platforms), hasn't been able to provide better opportunities in the job market, lack of research culture, etc. The development of education pertaining to ecological balance and technological growth hasn't been up to the mark. Despite consciously promoting environmental awareness and technological development, the efforts have not lived up to the expectations.

Culture: Heritage, Temples, Gumbas, Music, Museums:

Kathmandu is one of the most diverse cities in Nepal. People from all over Nepal with diverse backgrounds are residing in Kathmandu Valley. This valley hosts a UNESCO World Heritage Site with seven preserved locations: the centres of the three primary cities, Kathmandu Hanuman Dhoka, Patan Durbar Square and Bhaktapur Durbar Square, the two most important Buddhist stupas, Swayambhunath and Boudhanath and two famous Hindu shrines, Pashupatinath temple and Changu Narayan.



Museums Like the National Museum Nepal, Narayanhiti Palace Museum, Taragaon Museum, National History Museum of Nepal and so on are some significant names that are helping to preserve the history and significance even in present days. And Kathmandu is a diverse city with different forms of cultural music like Tamang Selo, Chyabrung, Dohori, Adhunik Geet, Bhajan, Filmi music, Ghazal, Classical music, etc and dance form like Lakhey Dance, Bhairab Naach, Maruni Dance, Deuda naach, etc are widely practised in the Kathmandu Valley. Moreover, different Languages like Nepali, Newari etc, traditions, religions like Hinduism, Buddhism etc festivals like Dashain, Tihar and jatras like Rato Machhindranath Jatra, Bhote

Jatra and food items like Choila, Bara all combined make the significance of the culture of Kathmandu.

Recreation: Parks and open spaces:

There are a significant number of parks in Kathmandu. Due to a huge number of people migrating to Kathmandu and the increasing population, the existing parks and open spaces are becoming crowded day by day and are not able to provide the needed refreshments and enjoyment. Some significant names like Mirgasthali Deer Park, Buddha Park, Amideva Buddha Park, Tribhuvan park, Ratna Park have been some popular parks that are some of the best choices in terms of refreshment and relaxation in the Kathmandu Valley. Moreover, open spaces and ground in societies and residential areas of Kathmandu are also contributing somewhere for the refreshment and supporting the environment as the green spaces. But those areas also nowadays remain unmanaged and are sometimes used for different developmental or housing purposes to support the overpopulation of Kathmandu.



Sports:

Football and cricket are known to be the most popular sports among youths in Kathmandu. There are some local stadiums in the city but there is only one international stadium, Dasharath Rangasala, a multi-purpose stadium that is used mostly for football and sometimes for events like track and field, javelin throw, etc. This stadium is the largest stadium in Nepal and has a capacity of 25,000 spectators. Events like Martyrs Memorial League and South Asian Games have also been organized in this stadium. The oldest football clubs of Nepal such as Ranipokhari Corner Team (RCT), Sankata Club and New Road Team (NRT) all have been from Kathmandu. Other prominent clubs include Manang Marshyangdi Club, Machhindra FC, Tribhuvan Army Club (TAC) and Nepal Police Club which also have their origin from Kathmandu. Kathmandu has also been a great support for cricket as one of the oldest cricket clubs of Kathmandu, Kathmandu Kings XI represents Kathmandu in the Everest Premier

League. In recent years, sports like volleyball, basketball, badminton, chess, table tennis and many more have become popular. Sports culture has been practised in Kathmandu by schools, colleges, universities, social clubs and the community. This has promised holistic sports development in the city. However, lack of facilities, stadiums and proper coaches and training has made the development in sports latent.

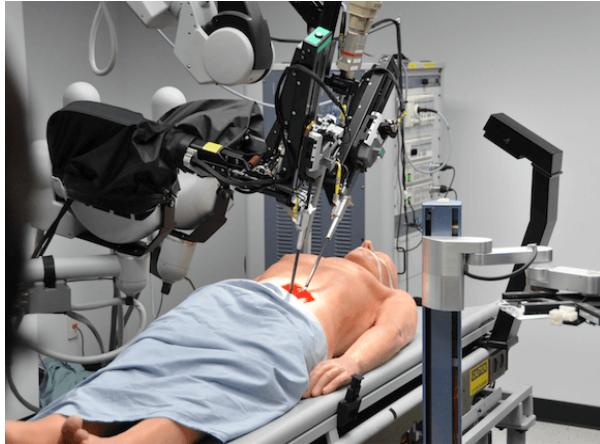
DESIGN OF NEW KATHMANDU:

This section includes the major part of the project. It basically consists of ideas and opinions on the future design of Kathmandu through upliftment of various sectors such as science and technology, design and architecture, environment and wildlife and many more. It discusses the aspect of promoting sustainability along with technological advancements preserving the authenticity of the city.

Science and Technology:

With the rise of various scientific ideas and innovations, science and technology indeed promise to transform Kathmandu city into one of the smartest cities in the world. The concept of autonomous cars seems to be an intriguing one. The new Kathmandu will have a driverless taxi system that could be boarded by passengers using their cell phone. There would be an app that would ask the passengers to enter their details and destination and after the online payment the taxi would arrive at their homes within 5-10 minutes. The universities and campuses will also have self propelled golf buggies that would help the professors, staff and students to commute around the campus conveniently. These autonomous vehicles will be equipped with the latest technology such as 3D cameras, light detection and ranging sensors and a GPS with an accuracy upto 1 kilometres. The vehicles will be able to detect obstacles on the way and will also have some inbuilt materials and mechanisms for the safety of the passengers. The inclusion of gyroscope and accelerometer will make the navigation convenient further. The new Kathmandu will have robotic law enforcement where tethered drones will be used for surveillance of the crimes. The drones will have sirens and search lights along with a chatbot that will communicate with the cops in case of emergencies or crimes. The new Kathmandu will have the use of robots in areas ranging from automated production to medicine. For example, robots will be used as a delivery system for drugs and this would reduce waiting time in pharmacies. The new Kathmandu will have virtual reality for the general public to train them in several areas ranging from driving to helping them operate in the bank. The city will have smart public housing system and the houses will be automated. The government will hire architect planners who in cooperation with computer simulation will build public houses around the city maintaining the environmental quality and reducing the consequences due to the ever growing population. The houses will be carbon free houses and this will indeed promote the quality of air. The city will have a 24/7 bay where all the activities ranging from business to transports to parks to schools will be included. This will help the city operate 24/7 and promote interconnectedness among various aspects. To support the infrastructure, underground modelling of areas such as water supply, transport, electric supply, etc will be followed. The city will have an agro-tech farm that will grow impossible products at impossible circumstances and impossible places (example-vertical farming). The city will have a food composting system where

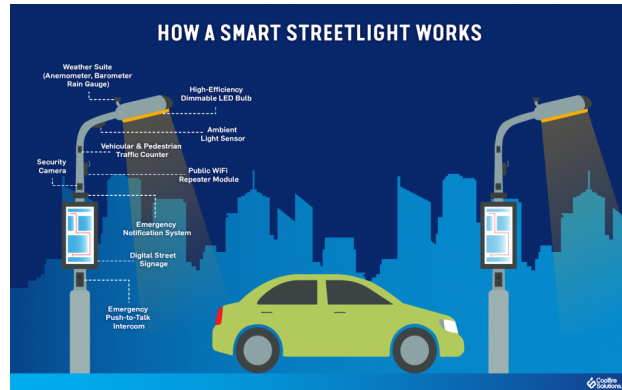
the food waste will be composted. This will help to reduce the food waste that ends up in the landfill and the composed soil can be utilized for trees across the local areas of the city. Similarly, every drop of water will be utilized and the water loops of the city will be closed. The excess rain water will be filtered through a mechanism that would make the water suitable for humans to drink, killing all the microbes present in it and maintaining its pH value. The airports will be transformed into tech parks where everything will be available from foods to clothes to banks. The airport will incorporate the the national arts and prestiges of the city into an airport gallery that would help the foreign learn the beauty of Kathmandu and Nepal and it will also promote the importance of national pride among the people of the city and the country.



Road networks and Smart technology:

The roads will consist of smart pavements that would be embedded with digital technology and fibre-optic mesh. These fibres will detect the position, speed and weight of the vehicles. These pavements will be connected to a computer system. Through this technology we will be able to identify accidents and mishaps that occur on the roads and will potentially be able to save lives. The roads would be able to repair themselves and thus this would increase the lifespan. The roads in the city would be constructed with steel wools and the mixture of asphalt and bitumen. Every 4 years, the department of roads would run the induction machine that would produce a magnetic field and this would induce an electric field thereby burning the steels letting the bitumens settle in the stones or pebbles. The city could use speed breakers as a source to generate energy. The principle of electromagnetic induction would play a role in this. The speed breakers would be provided with iron rods and once the vehicles would roll over the speed breakers the iron rods would set into motion and through this electric current would be induced. This electrical energy could be utilized to lighten the street lamps and also the energy could be transformed into other forms which could be utilized for other purposes. The traffic jams would lessen as there would be underground roads and highways in the city. The street of the city would consist of street lamps that would include smart radar. These radars would be able to detect unusual driving behaviour and car speed. The lamps would also consist of sensors that would monitor environmental changes and detect loud sounds. These lamps would promote safe roads in the city. The transport would reduce on the land and it will be conducted via air through mini air crafts. The roads in the city would be interlinked through a metropolitan area

network that would monitor the traffics in the routes and would allow the commuters to drive through alternate pathways to reach their destination. The smart roads would be equipped with high definition(HD) maps and high accuracy ground and air based GPS.



Design and architecture:

The open and free space left will be all taken by Kathmandu Metropolitan City and the houses will be built with the housing system where about 50 to 100 houses, not too tall, same height, same colour with similar facilities and features in different parts of Kathmandu valley where 1 or 2 family shall reside which assures the quality of life and the smartness of the city. After each house there will be at least one green tree so that people in the society can breathe fresh air



and greenery that will please the heart and mind due to which people remain healthy. Every house will be equipped with fire alarming system which assures safety and protection from the fire, doors opening with finger prints which minimizes robberies and also with solar panels for soaking the energy that can be used for the household purpose which saves the non-renewable energies and results the proper use of solar energy. The houses should be designed and built in such a way that the rain water gets managed so that the problem of shortage of water shall be easily solved and people can enjoy using water in Kathmandu along with the gas pipeline which minimizes the cost of the gas cylinder and is an efficient process.

The house will have the underground parking that can adjust around 5 vehicles so that the space above will be used for gardening or space to play for toddlers. The pre-built houses will also be coloured with the same colour and unmanaged wires and poles will be undergrounded and the supply of electricity will be done through the same process.

Policy and planning:

In the future, Kathmandu will be prepared to welcome a huge number of populations and since the area is going to remain the same for which strong policy and planning will be made for the management of population and protection of the environment. The planning will be done beforehand so that the action which is sustainable will be taken when needed. With the increment in population, the amount of waste product will simultaneously increase. For the proper and technology friendly management of waste, a high tech waste management system will be put into consideration along with smart climate control systems in homes and businesses so that people can prepare their day on that basis. Apps or social media based emergency alert and crisis response systems will be planned so that help will be reached within a few minutes in the cases of emergency. Plans and policies will be sustainable and in favour of the environment and people which will be made in such a way that every needs and wants will be adjusted.

Education:

Education is one of the most valuable aspects of anyone's life that can change one from none to someone. Now, most of the children do not have access to high quality education due to poverty and various other reasons. In the future, we shall have the government schools far better than the private schools providing free education to each student along with laptops and other electronic gadgets in the hands of each student so that they become closer to the science and technology in this digital world. The future of education shall be guided by AI along with the internationally approved education system where schools will be focusing on overall development of students rather than just course books. The schools shall use an eco-friendly way of teaching learning methodology where paper shall be replaced by the MS word, Notepad etc. and the course book will incorporate a concept of solid waste management, its importance, population education and vocational education so that every student will be aware about the societal aspects. Students shall not be judged just on the basis of grades but overall activities should be looked up to considering the fact that every person has different ambition and abilities which in return gives the better result. KMC shall establish some universities with highly educated and trained teachers and equipped with all kinds of facilities that students seek for their higher education such that students will not go to study abroad rather international students will compete to get admitted to the universities of Kathmandu.

Society and civilization:

Society will not just be a 100% literate society but the people in the society will be morally educated with humanity and brotherhood and the society will not face any sort of crimes and unusual activities. The old aged people and children will be taken good care of and none in the society will be discriminated against on the basis of caste, religion, race, level of education etc. The society will be built in such a way that after each 20 to 30 houses, there's a playground for

children, a department store where every essential are available, a social club where various social campaigns and programs will be discussed and a small park where people come together and have some refreshment or talk. Respecting each people's religion and choices, the temple with their respective god will be built and everyone shall celebrate the festivals and other ceremonies together like a family. Society will look like a family with happiness and prosperity. The society will be very eco-friendly with dustbins outside each house and the people in the society will conduct the cleanliness campaign time and again for a safe and clean environment.

Research, Development and Innovation:

The new Kathmandu will be considered as a research hub for Nepal as well as for the world. There will be highly equipped laboratories and resources along with world class professors working on several projects such as sustainable water supply, production of carbon free products, promoting environmental status, etc. The city will have highly skilled and qualified individuals who will plan the developmental works keeping in mind the principle of sustainability. The developmental works will also include stuff like high tech green parks, high speed internet in hospitals and complex surgeries with the help of robots, and many more. The construction works will get automated with the help of new machines and technologies thereby promoting efficiency in the work. The new Kathmandu will focus on innovation with nature and will utilize the available resources to their best capacity. The new Kathmandu will promote employment opportunities and through proper research will tackle the problems faced by the public regarding salaries and job facilities. Physical files will be replaced with computer drives in offices and all the ministries and other organizations so that papers could be saved. Drainage systems will be established in every household that would be collected all at once and would be separated into biodegradable and non-biodegradable and these wastes would be managed accordingly. The environment of the roads and public places will be cleaned on a daily basis through automated devices or robots to ensure the hygiene of the public. The city will also have several innovation centres for people with ideas and projects. The centre will be completely equipped with all the resources and facilities to carry on the project and research. These centres will be funded by the government and will be provided opportunities to collaborate with international scientists as well. The centres will be located at various places in the city and they will all be interconnected through computer networks.

Recreation: Parks and open spaces, walking:

There will be recreational parks in every area of Kathmandu that are promoting green spaces and people of every age group enjoy their free time in those parks. There will also be a significant number of open spaces that are in use as the playground and for different social and cultural gatherings. Along with that, the space at the side of the roads will make it easier to walk and roam freely around the city. Schools will start having their own playgrounds for sports and extracurricular activities. The public places will have been widely promoted into green spaces and the trees are also being planted at the side of roads and public areas to provide shade and fresh oxygen in the environment. Moreover, Kathmandu city will be having big projects for recreational parks, botanical gardens, etc. And even the government will be providing the necessary funding and support to such projects. Finally, the housing and settlement areas will

be designed in a way that every society has its own parks/open space for organized sports, events or just for relaxation and refreshments.

Heritage sites and conservation:

With the remarkable construction completion of the Dharahara, the other heritage and cultural sites will be reconstructed and redesigned to the full extent. The temples, gumbas, stupas will be widely protected and preserved for promoting cultural heritage. The people of Kathmandu will be encouraged to promote their own culture, traditional practices and most especially the heritages. The government will make strict rules and regulations for the ones destroying and depleting the heritage sites and also implement it by time. Awareness programs will be run regarding conservation of heritage sites as they are the pride and glory of the nation. The government will use the best of its time, energy and manpower for the protection and conservation of heritages of pride and the heritages will be in the best form and we will be having many tourists coming to visit Kathmandu just for the glance of the heritage sites.

Administration and Government status:

The administration of Kathmandu will be working in a more independent and attractive manner and local level administration will be responsible to make the best decisions for their areas. The authorities will be chosen in a very fair manner either through a democratic process or through competitive exams, leaving no place for nepotism or bribery. The working of the administrative bodies will be made completely transparent and every person will have the right to know and question the working of the government. The administration or governmental bodies will be preparing the best plans and policies needed for the growth and development of Kathmandu city. The complaints and problems of Local citizens will be addressed as soon as possible and the demands regarding various needs such as water, fuel, electricity will be fulfilled as soon as possible. Moreover, the plans and policies proposed by the governmental bodies will be decided and implemented with the understanding and participation of the local people. Finally, the administration of Kathmandu will have completely no corruption and have an effective and smooth functioning towards the administrative and developmental works.

Economy: City, Media and Technology, Tourism:

Kathmandu will become a well-developed city in terms of economic and financial aspects. More job opportunities and economic growth will be achieved. IT sectors will also be flourishing in Kathmandu making it the IT hub of Asia. More IT companies will be started and the number of IT professionals will be significantly increased along with the world level of competency. This will be the major source of generating a good amount of revenue from the software, applications and websites on a global scale. The tourism sector will also be boosted drastically as Kathmandu will have been the developed and most visited place in Asia as a whole. The number of tourists will be increasing every year, which will bring world-class hospitality services to Nepal. New industries and companies from all over Nepal and the world will set up their franchise making the economic status of Kathmandu stronger. Moreover, Kathmandu is the capital city of Nepal, Nepal as a whole will be well benefitted from the economic growth of Kathmandu City.

Environment and wildlife:

The major and most important development will be made in the sector of nature and Environment. Kathmandu will be adopting eco-friendly developmental activities which will further reduce the destruction of flora and fauna. Different forests and natural places will be promoted and strictly protected to preserve the flora and fauna in Kathmandu. Kathmandu will be establishing different conservation areas and green parks promoting the green environment and wildlife conservation. Moreover, the areas at the side of the roads and public spaces will be widely used for plantation to promote greenery and a healthy environment.

The forest within Kathmandu will be promoted with the different measures in such a way that the status of the wildlife can be supported and promoted. Moreover, the national zoo at Jawalakhel will be promoted in such a way that more flora and fauna can be accommodated. Other than that, schools, colleges, commercial buildings and offices will be planting different kinds of trees and plants. Natural sources like the lakes, rivers and forests of Kathmandu will be cleaned properly promoting their natural beauty.

Science parks and Museums:

The development of science and technology in Kathmandu will be one of the most significant achievements of Kathmandu City. Many scientific innovations and inventions in Kathmandu city will be one of the major attractions for innovative people, scientists and researchers all over the world. For this, Science parks and museums will be introduced in a different corner of the city. Even different schools and colleges will be introducing mini science parks and museums for their students to learn about scientific technology of the present and past.

National science parks and museums will give the student interested in science to get information and experience the development of science and technology. National Science museums will be introduced that will be equipped with added technology and will be storing some of the most significant inventions by a scientist in the history of Nepal. And a Science library consisting of worldwide science-based books for the science lovers and learners to explore the ideas and information by scientists and scientific writers from all over the world along with some of the best research papers written in the scientific field. Along with that, different innovation and research centres will be established to provide the opportunity and platforms for the students and young researchers to explore and innovate different technological and scientific discoveries which will help Kathmandu as well as the world to make the lifestyle more advanced and easier.

Stadiums and Business Centres:

With the rise and use of sophisticated technologies, the viewers have every stat and updates available on their mobile phones and other devices. The stadium operators want higher returns on their investment and the viewers want a more captivating experience. This experience will be easily available to them in their hands at home and they would not take interest in going to the stadiums for entertainment. So, the new Kathmandu will have smart stadiums as an answer to this problem and the stadiums will indeed compel the fans to visit and watch the games. Smart stadiums in the city will be the integration of a huge number of sensors, cameras and digital

signs that connect wired to wireless networks and servers. The sensors in the stadium would provide up to date information on parking spots, waiting lines, etc. The cameras will monitor all the nooks and corners of the venue assuring the safety of the people. The stadiums will have the facility of direct delivery of snacks and drinks to the seats of the fans. The fans would be able to order the food with their phones through online payment. The fans would also be able to play live games and win rewards. They would also be able to share pictures and post stuff on social media while remaining in the stadium watching the game progress. The stadiums would also help the people know about changing conditions like weather or any other emergencies. The infrastructure of the stadium would be able to modernize the building management systems that control the heating, ventilation, air conditioning and lighting systems. These systems would be automated and would require less manpower and would be able to conserve energy. The stadiums will be built at various places and for different types of sports and events. The stadiums will be built with the principle of sustainable development and will incorporate plants as well to ensure a better quality of the environment.

In the world of competition and fierce rivalry, business plays a great role in the upliftment of a country's economy. In a few years, Kathmandu will have some aspiring business students and practitioners. The business centres will be established in many different places for the gathering of business minded personalities and also the business hubs for running the world class businesses. The business centres will be equipped with all the technological and business essentials for better functioning and will also serve as the business schools. The businesses will get digitized, and basically it will all run in all computerized systems which will meet the international business standards. The business persons will come together and bring up environment related business ideas from which they'll not just make profit but help in protection of the environment. Business will be the major source of income and development in the country

CONCLUSION:

In a nutshell, the project focuses especially on the technological, environmental and societal aspects of Kathmandu. It shows how the present status is and how the future will look like with the inclusion of technology and eco-friendly sustainable projects leading to the advancements in various sectors in the city. The main features of the project are the promotion of architectural design in the city, construction of good road networks and promotion of good transport facilities enhancing road safety and promoting commuting efficiency. It also includes the methodologies for the betterment of education along with research-based knowledge, practical and moral education focusing on the production of well-rounded individuals. Considering the importance of proper solid waste management and protection and preservation of the environment, our project incorporates a high tech waste management system along with awareness in the community. The report also emphasizes the importance of a carbon-free city, the use of robots in various fields ranging from medicine to tourism, formulation of plans and policies that are in harmony with the sustainability of the city inculcating the economy, infrastructural development and the environmental status of the city, reducing crime rates through drone and other highly advanced technologies and interconnecting the various sectors of the city through the computer-based systems. The future of Kathmandu will look like the Kathmandu we dream of with all the facilities

like the free education system, efficient transport system along with all paved roads, parks and stadiums, research and innovation centres, people earning a good amount of money, good health care system where the people in the community will live in peace and harmony, breathing fresh air and enjoying the perks of the advancement and development.

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