



BRICK

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Current Affairs

Prime Minister Inaugurated Phase-I of Ahmedabad-Gandhinagar Metro

Prime Minister Narendra Modi on 4th March, 2019 inaugurated a 6.5-km stretch of phase one of the Ahmedabad Metro train service here. After inaugurating the 6.5 km stretch, connecting Vastral to Apparel park area here, Modi also took a ride on the metro. Modi reached Vastral Gam metro station and inaugurated the first phase by unveiling a plaque and waving a green flag to the metro train and travelled in it for a short distance.



The first phase of the project costs around ₹10,773 crore, for which Japan has extended a soft loan of ₹6,066 crore to the Indian government through its funding agency JICA (Japan International Cooperation Agency).

Gujarat government and central government are to each contribute ₹1,990 crore for the project.

The phase one of the project covers a distance of 40.03 km, of which 6.5 km is underground and the rest of the stretch is elevated.

Phase one comprises of two corridors. The north-south corridor runs from APMC to Motera along the existing railway line and will cover a distance of 18.87 km. The east-west corridor connects Thaltej to Vastral in the city covering a distance of 21.16 km.

Both the corridors will have 32 stations. The first phase of the project is expected to be fully operational by 2021.

The state government had on February 4, 2010 incorporated the special purpose vehicle Gujarat Metro Rail Corporation Limited to implement the project.

The urban development ministry of the central government had in November 2014 issued sanction order for the project, and the then chief minister and now Madhya Pradesh Governor Anandiben Patel had performed ground breaking ceremony for the project on March 14, 2015.

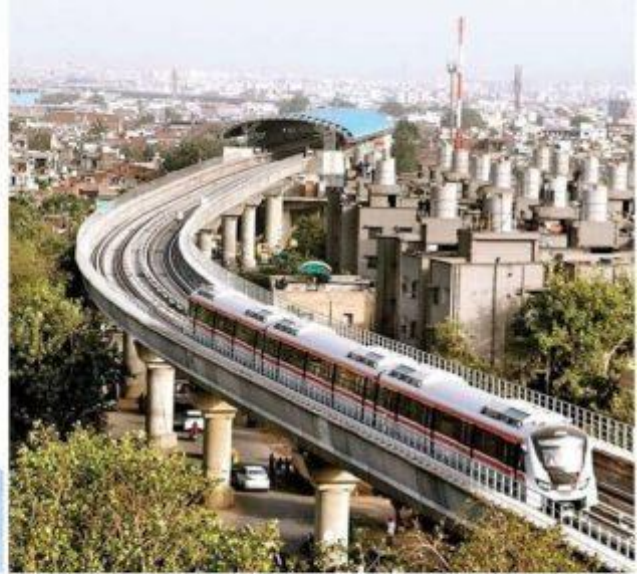
The phase two of the project, which will cover a distance of 28.25 km, was given approval by the Union Cabinet in February 2019.

The second phase will connect Motera cricket stadium to Mahatma Mandir in Gandhinagar.

"These Metro Projects will not only add to connectivity, but will also reduce the travel time and enhance the ease of living substantially in the urban areas. It will provide comfortable and reliable public transport to travellers especially in Ahmedabad and Gandhinagar region," Gujarat Metro Rail Corporation said in a statement.

Govt appoints Satyanarayansinh Rathore as Managing Director of GMRC

Gujarat government announced appointment of Satyanarayansinh Rathore, Ex-chairman, Sardar Sarovar



~ Padma Shree S.S. Rathore ~

Narmada Nigam Ltd (SSNNL), as Managing Director of the Gujarat Metro Rail Corporation (GMRC).

The post was vacant after ex-Managing Director I P Gautam resigned from the post following his appointment as a member of the Lokpal body.

Earlier, Rathore was acting as nominated Director of GMRC after getting retirement from post of Additional Chief Secretary in Roads and Building Department, Government of Gujarat.

Rathore started his career as a Civil Engineer with Gujarat Service of Engineers (GSE) cadre. He belongs to the royal family of Valasna State. He is popularly known as the “highway and canal man of Gujarat”.

As CMD of Sardar Sarovar Narmada Nigam Limited (SSNNL), Rathore completed the Sardar Sarovar dam project which enabled the supply of irrigation and drinking water from the Narmada River, established various canal networks. He also led the team for the Statue of Unity project.

Rathore introduced the Build, Operate and Transfer (BOT) road development model, the first of its kind in India. He is credited for developing major highways in Gujarat.

Horticulture Production in India

The Ministry of Agriculture & Farmers Welfare has released the final estimates for 2017-18 and the first estimates for 2018-19 of area and production of horticulture crops.



The final estimates of the 2017-18, horticulture production stood at record 311.7 MT, which is 3.7 per cent higher than the previous year and 10 per cent higher than the previous year and 10 per cent higher than the past five years.

Renaming of Department of Industrial Policy and Promotion (DIPP)



सत्यमेव जयते
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry
Government of India

The Department of Industrial Policy and Promotion (DIPP) has been renamed as the Department for Promotion of Industry and Internal Trade.

For a long time Confederation of All India Traders Association (CAIT) was demanding for a separate Ministry of Internal Trade. CAIT sees the creation of a separate department by merging Internal and external trade is a step forward in the creation of a separate Ministry.

Minister of Railways Piyush Goyal awarded Carnot Prize

The Union Minister of Railways and Coal, Piyush Goyal has been awarded the Carnot Prize 2018 for the transformational changes



brought by him during his tenure as Union Minister of Power. Piyush Goyal during his energy, and mines brought in transformational changes in the Power Sector which includes fast-track electrification of nearly 18,000 villages in some of the most remote and inaccessible parts of the country, rolling out a comprehensive power sector reform plan UDAY, the world's largest LED bulb distribution program, and the world's largest renewable energy expansion program. The award honors his exceptional service towards reforming the power sector in the country. Accepting the award Piyush Goyal announced that government has embarked on an ambitious programme to ensure 100 per cent electrification of Railway's grid in the next five years.

Damper for India's entry into NSG



In the backdrop of the meeting of the P5 (UK, US, France, Russia and People's Republic of China) to discuss issues related to nuclear disarmament, China has again reiterated its previous stand that India's accession to the Non-Proliferation Treaty (NPT) is pre-requisite for its membership to the Nuclear Suppliers Group (NSG) or else there should be a common guidelines for the membership of the non-NPT states. India has refused to sign the NPT citing the discriminatory provisions which provide undue advantages to the nuclear weapon designated states.

National Salt Satyagraha Memorial

Prime Minister Narendra Modi inaugurated the National Salt Satyagraha Memorial at Dandi in Navsari district, Gujarat. The memorial is conceived as anan experiential journey recreating the



spirit and the energy of the 1930 Dandi March led by Mahatma Gandhi and 80 of his fellow Satyagrahis.

The memorial takes the visitors step by step through visualization of events to aid them in understanding the methodology of Satyagraha, which finally led to India's Independence from the British colonial rule. The Memorial is the project of the Ministry of Culture, Government of India and is advised by a High-Level Dandi Memorial Committee (HLDMC) with IIT Bombay as a Design Coordination Agency.

NITI Aayog, Adobe Partner to Enhance Digital Literacy and Creativity Skills



Atal Innovation Mission and software major Adobe have signed a Statement of Intent to collaborate on enhancing digital literacy and creativity skills. Under the agreement, Adobe would implement the Digital Disha Programme across 100 schools under Atal Tinkering Labs (ATL) initiative.

Teachers and Children across these 100 schools would benefit from the creative learning resources via free access to Adobe Spark premium. This would empower them with new age skills to thrive in the current digital era and preparing them for long term success.

Digital Disha Programme - Ministry of Skill Development and Entrepreneurship has partnered with Adobe to launch Adobe Digital Disha Programme. Under the Adobe Digital Disha Programme, the Adobe would provide Adobe Spark application, a fun and frictionless storytelling Creative Cloud application, a fun

and frictionless storytelling Creative Cloud application free of charge for education and skill development.

Tata Steel recognized as one of World's Most Ethical Companies



Tata Steel has been recognized as one of World's Most Ethical Companies by the Ethisphere Institute for 2019. Ethisphere Institute is a global leader in defining and advancing the standards of ethical business

practices.

For the eighth time, Tata Steel has got the recognition eight times in the 'Metals, Minerals and Mining' category. Tata Steel is one of the only two honorees in the 'Metals, Minerals and Mining' industry.

Assam launches PRANAM Commission to protect parents of govt employees



The Chief Minister of Assam Sarbananda Sonowal has announced a PRANAM Commission to look after the issues related to the Parents Responsibility and Norms for Accountability and Monitoring

(PRANAM) Bill.

MGR Centenary Arch in Chennai Unveiled

The Chief Minister of Tamil Nadu K Palaniswami has unveiled MGR Centenary Arch on KamarajSalai of Chennai.

MGR Centenary Arch The MGR Centenary Arch has been built at an estimated cost of 2.52 crore, from the state Secretariat. The Centenary Arch 66 feet wide and 52 feet height was proposed to



commemorate the birth centenary of the late chief minister MG Ramachandran. The division bench of Madras High of Madras High Court had passed an interim order restraining the state government from

inaugurating the arch, off the famous Marina beach, till disposal of public interest litigation petition opposing it last year. The Madras High Court had permitted the Tamil Nadu government to unveil the arch but without any ceremony.

Rajkot: The new Gujarat State Road Transport Corporation (GSRTC)



GSRTC is all set to build a swanky interstate bus stop in Rajkot at the cost of whopping Rs 154 crore. Gujarat Chief Minister Vijay Rupani laid the foundation stone for the new bus stand in Rajkot. These picture is

an artist's impression of the lavish Rajkot Bus Station and have taken the internet by storm. The facilities of new Rajkot bus stop will be same as that of international airports.

Rajkot New Bus Stand building will be of eight floors, with 20 buses to be parked together on the ground floor apart from the underground parking. The State Government is adding CCTV surveillance cameras and GPS for the security and safety checks. The new bus port will also be lined with TV sets for the entertainment of the waiting passengers. Airport style sign boards and other public amenities will be present.

Rajkot Bus station will be built over 11,000 square meter area. The first floor of the new bus stop will have facilities for the commuters while other seven floors will have around 100 shops, offices, hotels, restaurant, theatre and more. Gujarat state government is renovating bus stands for the modern ones in a total of 10 cities.

Ten new and modern district level bus terminals to be built at Amreli, Bhuj, Junagadh, Rajkot, Nadiad, Navsari, Modasa, Patan and Palanpur at the cost of Rs.913.30-crore with facilities for commercial activities.

GSRTC has decided to put 1600 new buses at a cost of Rs 410 crore on the road. This decision has been taken in the interest of inhabitants living in the interior areas of the state and will eventually benefit more than 83,000 people.

Earlier, Prime Minister Narendra Modi laid the foundation stone of an iconic modern bus terminal at Bharuch in March, also built on PPP model at the cost of Rs.92.67-crore. The vision to give facelift the existing bus terminals in the state was that of PM Modi when he was the Chief Minister. The government has already built six such bus terminals - two in Ahmedabad at Gita Mandir and Ranip, two in Vadodara at Central and Makarpura, at Surat and Mehsana.



UNION BUDGET 2019-20

The Union Budget for 2019-20 was announced by Ms Nirmala Sitharaman, Minister for Finance and Corporate Affairs, Government of India, in Parliament on July 05, 2019. India is all set to become US\$ 3 trillion economy by the end of FY20. The budget focusses on reducing red tape, making best use of technology, building social infrastructure, digital India, pollution free India, make in India, job creation in Micro, Small and Medium Enterprises (MSMEs) and investing heavily in infrastructure.

Total expenditure for 2019-20 is budgeted at Rs 2,786,349 crore (US\$ 417.95 billion), an increase of 14.09 per cent from 2018-19 (budget estimates).



Highlights of Union Budget 2019-20

Overview of the economy

- India was a US\$ 1.85 trillion economy in 2014 and it has reached US\$ 2.7 trillion in five years, the fastest growing major economy and the sixth largest economy in world, compared to 11th largest in 2013-14.
- Metro rail network of 657 km has become operational in the country.

- India target to become US\$ 5 trillion economy in the next five years and might become a US\$ 10 trillion economy in the next eight years thereafter.
- The Indian economy grew at 6.8 per cent in 2018-19 and fourth quarter growth slumped to 5.8 per cent which was a 17 per cent quarter low.
- Movement of cargo on Ganga is estimated to rise four times in next four years.

Labour and Youth Welfare

- National Sports Education Board to be setup under Khelo India to prepare youth for new age skills, Artificial Intelligence, IoT, Big Data, 3D Printing, Virtual Reality etc.
- National Research Foundation to be established to fund, coordinate and promote R&D.
- Rs 400 crore (US\$ 60 million) provided for ‘World Class Institutions’ for FY20
- “Study in India” to bring foreign students to higher educational institutions
- The Government of India has decided to extend the pension benefit to about three crore retail traders & small shopkeepers whose annual turnover is less than Rs 1.5 crore (US\$ 0.22 million) under “Pradhan Mantri Karam Yogi Maandhan Scheme.

Support for Farmers

- Government is planning to form 10,000 new Farmer Producer Organizations, to ensure economies of scale for farmers over the next five years.
- Government will work with State Governments to allow farmers to benefit from e-NAM (National Agriculture Market).
- Government might replicate “one count: Zero Budget Farming” model which can help in doubling our farmers’ income in time for our 75th year of Independence.

- The focus of the government is on the “Pradhan Mantri Matsya Sampada Yojana” (PMMSY) for addressing critical gaps in the value chain, including infrastructure, modernization, traceability, production, productivity, post-harvest management, and quality control.

Infrastructure

- Ministry of Railways have been allocated Rs 94,071 crore (US\$ 14.11 billion) in 2019-20.
- The government has suggested the investment of Rs 5,000,000 crore (US\$ 750 billion) for railways infrastructure between 2018-2030.
- Metro rail network has reached to 657 Km.
- Operating ratio improved by 95 per cent in 2019-20.
- Government has announced to invest Rs 10,000,000 crore (US\$ 1.5 trillion) in infrastructure over the next five years
- To upgrade 1,25,000 kms of road length over the next five years, the estimated cost of Rs 80,250 crore (US\$ 12.03 billion) is envisaged under Pradhan Mantri Gram Sadak Yojana-III (PMGSY)
- 30,000 kms of PMGSY roads have been built using Green Technology, Waste Plastic and Cold Mix Technology.
- Government has ensured power availability to states at affordable rates through model – One Nation, One Grid.
- Government has proposed to permit investments made by Foreign Institutional Investor’s (FIIs)/Foreign Portfolio Investments (FPIs) in debt securities issued by Infrastructure Debt Fund.
- Road - Bharatmala phase 2 going to be launched to develop the state road networks.
- Government has finalised the model tendency law-promotion of rental housing.

Tax Proposals

- Individual taxpayers with annual income up to Rs 500,000 (US\$ 7,500) will get full tax rebate and hence will not be required to pay any tax.
- Tax Deducted at Source (TDS) of 2 per cent on cash withdrawal exceeding Rs 1 crore (US\$ 0.15 million) in a year from a bank account to promote less cash economy
- Effective tax rate for individuals having taxable income above Rs 2 crore (US\$ 0.30 million) has been increased.
- Limit for applicability of lower corporate tax rate of 25 per cent increased from Rs 250 crore (US\$ 37.50 million) to Rs 400 crore (US\$ 60 million)
- Enhanced interest deduction up to Rs 350,000 (US\$ 5,250) for purchase of an affordable house.
- The government increased income tax surcharge for HNIs (high net worth individuals) earnings more than Rs 2 crore (US\$ 0.30 million) a year. Those earning between Rs 2-5 crore (US\$ 0.30-0.75 million) will have shell out 3 per cent more, with surcharge rate being increased from 15 per cent to 25 per cent. Those earning above Rs 5 crore (US\$ 0.75 million) will have to shell out a surcharge of 37 per cent, from current 15 per cent.
- No charges or Merchant Discount Rate (MDR) on specified digital mode of payments. These modes are to be compulsorily provided by large businesses.
- The government announced Rs 150,000 (US\$ 2,250) income tax deduction on interest paid on loans for purchase of electric vehicles.
- Sabka Vishwas Legacy Dispute Resolution Scheme proposed for quick closure of service tax and excise related litigations.
- To increase Special Additional Excise duty and Road and Infrastructure Cess each by one rupee a litre on petrol and diesel.
- It also proposed to increase custom duty on gold and other precious metals from 10 per cent to 12.5 per cent.
- Scheme of faceless electronic tax assessment

- Aadhaar and PAN to be interchangeable and permit those who do not have PAN to file Income Tax returns by only citing their Aadhaar number.
- Taxpayers having annual turnover of less than Rs 5 crore (US\$ 0.75 million) can now file quarterly returns.
- Fully automated GST refund module shall be implemented.
- An electronic invoice system is proposed that will eventually eliminate the need for a separate e-way bill

Vision for the Next Decade

- To become a US\$ 3 trillion economy by the end of 2019
- Make in India with emphasis on MSMEs, Start-ups, defence manufacturing, automobiles, electronics, fabs and batteries, and medical devices
- Building physical and social infrastructure
- Digital India reaching every sector of the economy
- India plans electricity, clean cooking facilities for all Indian families by 2022.
- To ensure 'Har Ghar Jal' by 2024
- 125,000 km of road to be upgraded over next 5 years at a cost of Rs 80,250 crore (US\$ 12.03 billion)
- Aims to achieve housing for all by 2022
- Blue Economy
- Healthy society – Ayushman Bharat, well-nourished women & children. Safety of citizens
- Team India with Jan Bhagidari. Minimum Government Maximum Governance.
- 19.5 million household to be built in rural areas.

1. Translucent wood as construction material



We now have translucent wood that can be used to develop windows and solar panels. It is created by first, removing the lining in the wood veneer and then through nanoscale tailoring. The resulting effect creates translucent wood that has various applications

in the construction industry.

As a very cheap resource, it can benefit projects by reducing cost of resource.

The innovation took place at Stockholm's KTH Royal Institute of Technology. Lars Berglund, a professor at KTH claims that transparent wood is a low cost, readily available and renewable resource.

The wood can be mass produced and can be used commercially. The study was then published by Bio macromolecules.

2. Cooling system in bricks

Through the combination of clay and hydrogel, students at the Institute of Advanced Architecture of Catalonia have created a new material that has a cooling effect on building interiors.

Hydroceramics have the ability to reduce the indoor temperature by up to 6 degrees Celsius.

Its cooling effect comes from the presence of hydrogel in its structure which absorbs water, up to 500 times its weight. The absorbed water is released to reduce the temperature during hot days.

3. Cigarette butts to make bricks



Many different materials are needed for building a house, but who would expect that cigarette butts will be one of them.

On a yearly basis, 6 million cigarettes are manufactured and they produce 1.2 million tonnes of cigarette butt waste. The impact on the environment is tremendous. Elements such as arsenic, chromium, nickel, and cadmium enter the soil and harm nature.

In order to reduce the impact of cigarette butts on the environment, researchers at RMIT developed lighter and more energy efficient bricks made of cigarette butts. In short, innovatively utilizing waste in a much more eco-friendly manner.

Dr. Abbas Mohajerani, the leading researcher of the project, along with his team discovered that by infusing even 1% of cigarette waste in fired-clay bricks they can have great results in removing pollution from our environment.

So next time you will wonder what materials are needed for building a house, make sure that you don't underestimate the power that a small object such as a cigarette might have.

4. We now have Martian concrete

It's finally done! We have concrete that can be used to build structures in Mars now. The researching team at the Northwestern University, has created concrete that can be made with the materials available on Mars.

The new concrete also doesn't require water as an ingredient to be formed. With the scarcity of water as a source, this crucial benefit can make this innovation truly beneficial for the development of structures on Mars.

In order to make the martian concrete, sulphur is heated at 240° celsius which melts it into a liquid. The martian soil then acts as an aggregate and once it cools down we get Martian concrete! According to the researching team, the ratio of martian soil and sulphur needs to be 1:1.

5. Light generating cement



Dr. José Carlos Rubio Ávalos from UMSNH of Morelia, has created cement that has the ability to absorb and irradiate light. With this new light generating cement the potential uses and application of it can be huge.

The construction industry is evolving and one of the main trends is the move towards a more resource and energy efficient way of creating structures. Therefore, the implications of cement acting as a 'light bulb' are very broad. We can use them in swimming pools, parking lots, road safety signs and much more.

The science behind it: Through the process of polycondensation of raw materials such as river sand, industrial waste, silica, water, and alkali. The process is done at room temperature which is why the energy usage is low.

6. The CABKOMA strand rod



The Komatsu Seiten Fabric Laboratory, based in Japan has created a new material called the CABKOMA Strand Rod. It is a thermoplastic carbon fiber composite.

The strand is the lightest seismic reinforcement and is

very aesthetically pleasing.

A single strand of CABKOMA Strand Rod of 160 meter length weighs only 12 kg which is 5 times lighter compared to a metal rod.

7. Biologically produced furniture



Another very beautiful innovation in the construction industry is the invention of bioplastic furniture. This innovation is due to the joint effort of Terreform One and Genspace..

So far there are two pieces of furniture created through this material – a chaise lounge and a small chair for kids. The furniture is made by a material called Mycoform, which is made by combining wood chips, gypsum, oat bran together with a fungus called Ganoderma lucidum. This fungus is added as it has the ability to disintegrate waste products and leave a strong structural material.

8. Floating piers



Over the water of Italy's lake Isola, you can see another great innovation in the construction industry – Floating piers by artists, Christo and Jean-Claude.

The floating dock system is composed of 220,000 polyethylene cubes of high density. It is a three-kilometer long walkway with 100,000 square meters of yellow cloth wrapped around it. The cubes undulate along the waves of the lake.

The beautiful masterpiece extends from pedestrian streets of Sulzano and connects the islands of San Paolo and Monte Isola.

9. Pollution absorbing bricks



We now have pollution vacuums in bricks! Developed by assistant professor Carmen Trudell at Cal Poly, college of architecture and environmental design, the Breathe Brick sucks in pollutants in the air and releases filtered air.

The innovative material is designed to be part of a building's standard ventilation system. It has a two-layer facade system, with the specialist bricks on the outside and standard insulation on the inside.

In the center is a cyclone filtration system that separates out the heavy air particles from the air and collects them in a removable hopper. Its design is very similar to a vacuum. The design of breathing bricks can be configured in a wall with a window and a cooling system as well. In short, it is a technology that can be easily applied to the current construction processes.

By performing wind tunnel tests, it was proven that the system can filter 30% fine particle pollutants and 100% coarse particles such as dust.

It goes without saying that pollution absorbing bricks could become in the long run one of the most common materials needed for building a house as they would ensure a better quality of life for the residents of the built structure.

10. Self-healing concrete

Self-healing concrete is also a new entry in the family of the materials used in construction and we are really excited about it!



Dutch civil engineer, Dr. Schlangen at Delft University has created a self-healing concrete. In his presentation, he demonstrated the effectiveness of the material by breaking it in two, putting the

pieces together, and heating the concrete in a microwave oven. Once the melted material cools down, it joins together.

Of course with this method, the concrete needs heat. If the material is used to create roads, how will they be heated up?? To solve that problem, Dr. Schlangen and his team created a special vehicle that passes induction coils on the road.

What's next for traditional building materials?

By now, it's evident that the construction industry is about to enter a new era in terms of construction materials. Of course, this has a direct effect on traditional materials and their role in the building process.

There are two different scenarios for the use of traditional construction materials in the -not so distant- future: they will either perish due to the use of new revolutionary techniques or they will be reiterated in order to become a profitable and eco-friendly option which complies with the modern building specifications and standards.

Interestingly enough, traditional building materials have lately attracted a lot of attention as a result of the search for new ways to turn construction greener and more cost-efficient. In a nutshell, here are some of the materials used in construction that belong to this category:

- Earth building materials
- Wood as a building material
- Bricks
- Concrete

- Cement
- Plastic

All the materials mentioned above could contribute to transforming the way we build in the sector if used in a smart and sustainable way. On top of that, they could play a decisive role in decreasing the cost of materials in the construction process without compromising quality.

The future looks promising!

All in all, it becomes clear that many things are already changing in the sector with regard to the materials used in construction. The potential is enormous and as long as

We are able to combine the traditional building materials with a modern approach then a more cost and energy-efficient building process will emerge soon.



Smart City Updates

Dholera Smart City™ Phase 1, Gujarat

Dholera Smart City™ is a Fastest Growing Company In Dholera, Gujarat. Dholera Smart City™ project plans a world class affordable housing project launched in the first smart city of India - Smart City Dholera SIR. Legally approved and a Clear Title NA Project is located in the heart of Dholera. The most alluring residential township in the vicinity having residential plots, villas and apartments.

Developed by SmartHomes Infrastructure Pvt. Ltd, the Indian wing of Singapore based Smart Infrastructure PTE. Ltd, it is one of the several projects that the developer aspires to build in Dholera and other places in Gujarat. Another project that is simultaneously being developed in Dholera is SD Phase 1.

Sprawling over 500 acres, they offer a plethora of options in the World's fastest growing Real Estate Property in Dholera SIR Smart City Gujarat like Residential Plots, Villas, Bungalows and Smart Value Apartments. Over 10,000 residential units are in the making over a five year term.

Investing in Smart City Dholera is a golden opportunity to invest in the fastest developing city of India!!!

Dholera Smart City™ Salient Features:-

Dholera SIR is the most promising and fastest developing city of India. Salient Features include:

- ✓ Dream Project of Mr. Narendra Modi envisaged when he was the Chief Minister of Gujarat.
- ✓ Identified as the first Smart City of India.
- ✓ To be developed 2 times the size of Delhi and Six times that of Shanghai.

- ✓ Rated by Forbes as one of its kind cities in India and one amongst Top 12 fastest growing cities in the world.
- ✓ A Special Investment zone along the DMIC corridor making it a site for fast track trading and manufacturing activities.
- ✓ Development plans undertaken jointly by Gujarat State Government and Central Government.
- ✓ Excellent connectivity through rail, road, express highway, international airport, metro and port which collectively links the city on both national and global front.
- ✓ Initial funding of Rs. 3,000 crore received from government which shall result in attracting FDI's and private investors.
- ✓ Availability of abundant land at lower valuation makes it a value proposition for retail and international investors.
- ✓ First choice for smart investors owing to its strategic location, current prices and thrust from the government.

By and large, it is very much advised by experts who are observing Dholera Real Estate markets very closely that investing in Dholera at present will surely yield very good returns.

Dholera SIR



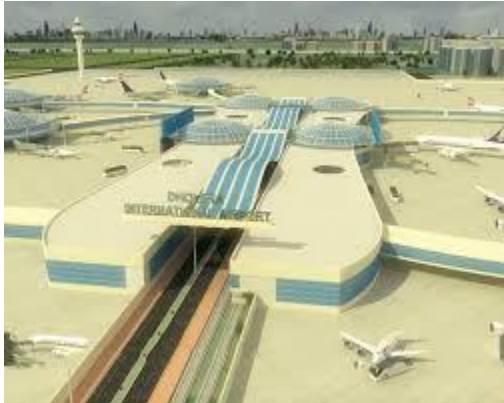
Dholera SIR, India's First smart city is located in the dynamic state of Gujarat and has been envisioned by the Prime Minister Mr. Modi as a city that is twice the size of

Mumbai and six times that of Shanghai.

Dholera SIR Projects

In order to propel the growth of the economic region of Dholera SIR, central government has identified five early bird projects, development of which shall be put on fast track. The projects are:
Six Lane Expressway

Dholera SIR Current Status



Larsen & Toubro (L&T) has been awarded the INR 1,734-crore EPC contract to work on the construction of the Dholera Smart City, Dholera International Airport project has been given environmental clearances.

Dholera Investment

Being one of the first Greenfield smartest city of India, Dholera has become Investors first choice now. Investors looking forward to earn good returns in short span, Dholera is the right destination for it.

Dholera Residential Plots



As they say, Land Appreciates Never Depreciates, specially land of Dholera that has become one of the best investment destinations for property investors.

Dholera International Airport

The airport shall be strategically located 20 kilometers from smart city Dholera and 80 kilometers from Ahmedabad and falls under Taluka Dhandhuka, Ahmedabad district. The project shall cost Rs. 1,378 approximately.



Civil Engineering

Civil Engineering Personality – Gustave Eiffel



Synopsis

Gustave Eiffel began to specialize in constructing with metal after college, and his early work focused chiefly on bridges. In 1879, the chief engineer on the Statue of Liberty died and Eiffel was hired to replace him, going on to design the metallic skeleton of the structure. In 1882, Eiffel began work on the Garabit viaduct, which was, at the time, the highest bridge in the world. Soon thereafter, he began work on what would become known as the Eiffel Tower, the structure that would cement his name in history.

Early Life

Alexandre-Gustave Eiffel was born in Dijon, France on December 15, 1832. Interested in construction at an early age, he attended the École Polytechnique and later the École Centrale des Arts et

Manufactures (College of Art and Manufacturing) in Paris, from which he graduated in 1855. Setting out on his career, Eiffel specialized in metal construction, most notably bridges. He worked on several over the next few decades, letting mathematics find ways to build lighter, stronger structures.

Early Projects

One of Eiffel's first projects came in 1858, when he oversaw the building of an iron bridge at Bordeaux, and by 1866 Eiffel had set up his own company. By the time he designed the arched Gallery of Machines for the Paris Exhibition of 1867, his reputation was solidified. In 1876, he designed the 525-foot steel-arched Ponte Maria Pia Bridge over the Douro River in Oporto, Portugal, which was completed the following year. Working from the same design nearly 20 years later, he built the renowned 540-foot Garabit viaduct in Truyère, France. Suspended 400 feet above the surface of the water, it was the highest bridge in the world for years after its construction.

As his career advanced, Eiffel moved away from bridge work, such as in 1879 when he created the dome for the astronomical observatory in Nice, France, notable in that the dome was movable. That same year, when the Statue of Liberty's initial internal engineer, Eugène Viollet-le-Duc, unexpectedly died, Eiffel was hired to replace him on the project. He created a new support system for the statue that would rely on a skeletal structure instead of weight to support the copper skin. Eiffel and his team built the statue from the ground up and then dismantled it for its journey to New York Harbor.

Notre-Dame

Notre-Dame de Paris, also called Notre-Dame Cathedral, cathedral church in Paris. It is the most famous of the Gothic cathedrals of the Middle Ages and is distinguished for its size, antiquity, and architectural interest. Notre-Dame lies at the eastern end of the Île de la Cité and was built on the ruins of two earlier churches, which were themselves predated by a Gallo-



Roman temple dedicated to Jupiter. The cathedral was initiated by Maurice de Sully, bishop of Paris, who about 1160 conceived the idea of converting into a single building, on a larger scale, the ruins of the two earlier basilicas. The foundation stone was laid by Pope Alexander III in 1163, and the high altar was consecrated in 1189.

The choir, the western facade, and the nave were completed by 1250, and porches, chapels, and other embellishments were

added over the next 100 years. Notre-Dame Cathedral consists of a choir and apse, a short transept, and a nave flanked by double aisles and square chapels. Its central spire was added during restoration in the 19th century, replacing the original, which had been completely removed in the 18th century because of instability. The interior of the cathedral is 427 by 157 feet (130 by 48 meters) in plan, and the roof is 115 feet (35 meters) high. Two massive early Gothic towers (1210–50) crown the western facade, which is divided into three stories and has its doors adorned with fine early Gothic carvings and surmounted by a row of figures of Old Testament kings. The two towers are 223 feet (68 metres) high; the spires with which they were to be crowned were never added. At the cathedral's east end, the apse has large clerestory windows (added 1235–70) and is supported by single arch flying buttresses of the more daring Rayonnant Gothic style, especially notable for their boldness and grace. The cathedral's three great rose windows alone retain their 13th-century glass.

Chand Borai



The Chand Baroi is a stepwell built over a thousand years ago in the bhaneri village of Rajasthan. It is one of the largest stepwells in the world and also one of the most beautiful ones. Located in the eastern part of the province of Rajasthan, it was built by King Chanda somewhere in the 9th century. Most noteworthy of this architectural beauty are 3500 symmetrically constructed narrow steps forming an impeccable design.

Using these steps, you can go down as much as 20 meters to fetch water. About 64 feet deep, it is India's largest and deepest step wells with 13 floors and was built for water harvesting. Glimpse At Architectural Wonder The temperature of water at the

lowest point was probably 5-6 degrees less. The numerous steps seem like maze which consequently look more beautiful with effects of light and shadow. The criss-cross pattern of double flights of steps is truly mesmerizing.

This creation is famous because of its finest geometry which makes it a captivating structure. The stunning structure with a broader circumference funnels down to a narrow base which forms the base of the stepwell. With flight of stairs on three sides, the fourth side consequently has been designed into a three storey pavilion.

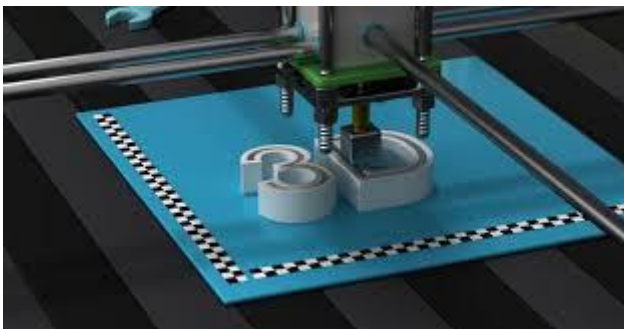
In addition to Jharokhas (windows), balconies and galleries on the fourth side, the intricate work on the walls and pillars seems like a royal work of art. Various movies like The Fall and The Dark Knight Rises have captured the beauty of this place.



Advancement in Technology

Technology is the collection of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation.

3D Printing



3D printers create real, solid objects from digital data by building them up in layers that are typically about 0.1mm thin. For several decades 3D printers have been used to create prototypes, but by 2020 it is pretty certain that the majority of 3D printed

objects will be final products or parts thereof.

Artificial Intelligence (AI)



As I discuss in my book Digital Genesis, we will soon enter the Cognitive Computing Age in which any digital technology will be able to possess, or remotely access, some form of cognitive capacity.

Augmented Reality

Augmented reality (AR) overlays digital data on a real-time view of the world. For example, most commonly a user can hold up a Smartphone or tablet and see additional information overlaid on its video feed.

Big Data

Big Data generates value from the storage and processing of very large quantities of digital information that cannot be analyzed with traditional computing techniques.

Bioprinting

Bioprinters are 3D printers that output living cells in order to permit the creation of human or other animal tissue and even entire organs

Cloud Computing

Cloud computing is where computer software, user data and processing power are accessed from the Internet "cloud" rather than a local desktop or organizational data centre. This

allows users to access their data and applications from any device, and also to collaborate more easily.

Genetic Engineering

Genetic engineering alters the traits of living organisms by changing the information encoded in their DNA. This may involve the creation of genetically modified (GM) plants, animals and micro-organisms, as well as the development of genetic medicine.

Helium-3 Power Generation

Helium-3 may be the fuel for a new generation of clean, nuclear fusion power plants. Unfortunately, helium-3 is also exceptionally rare on the Earth. There is, however, thought to be an abundant supply of helium-3 on the surface of the Moon. Mining lunar helium-3 may also become a large part of our "solution" to Peak Oil, broader fossil fuel depletion, and climate change.

Nanotechnology

Nanotechnology is the science of understanding and manipulating materials on a nanometer scale. A nanometer is just one billionth of a meter, or the length of a few atoms placed end-to-end. Already nanotechnology is being used in the production of some microprocessors, batteries, computer displays, paints and cosmetics. But this really is just the beginning of a manufacturing and medical revolution.

Quantum Computing

Rather than storing and processing information using miniature transistors contained in silicon chips, quantum computers work with data using the quantum-mechanical states of sub-atomic particles. Due to the peculiarities of quantum mechanics, each quantum computing 'qubit' can store a value of both '1' and '0' simultaneously, thereby allowing quantum computers to move beyond the limitations of binary processing.

Synthetic Biology

Synthetic biology applies an engineering mentality to biology. Whereas "traditional" genetic engineers splice a gene or two from one existing species into another, synthetic biologists radically alter existing life for new purposes. They have also started to create new forms of life from scratch using standardized genetic components termed 'biobricks'.

RPA (Robotic Process Automation)



RPA Training – Explore the Curriculum to Master RPA.

- o Generally, any desk job in any industry involves tasks that are repetitive in nature and can be automated.
- o RPA or Robotic Process Automation allows you to automate such routine and repetitive tasks.
- o You don't need to write any code to automate repetitive tasks.

In 2019, the trend of bots and machine learning is only going to skyrocket, which means RPA will become an invaluable skill to have.

Robot dexterity



Robots are teaching themselves to handle the physical world.

For all the talk about machines taking jobs, industrial robots are still clumsy and inflexible. A robot can repeatedly pick up a component on an assembly line with amazing precision and without ever getting bored—but move the object half an inch, or replace it with something slightly different, and the machine will fumble ineptly or paw at thin air.

But while a robot can't yet be programmed to figure out how to grasp any object just by looking at it, as people do, it can now learn to manipulate the object on its own through virtual trial and error.

One such project is Dactyl, a robot that taught itself to flip a toy building block in its fingers. Dactyl, which comes from the San Francisco non-profit OpenAI, consists of

an off-the-shelf robot hand surrounded by an array of lights and cameras. Using what's known as reinforcement learning, neural-network software learns how to grasp and turn the block within a simulated environment before the hand tries it out for real. The software experiments, randomly at first, strengthening connections within the network over time as it gets closer to its goal.

It usually isn't possible to transfer that type of virtual practice to the real world, because things like friction or the varied properties of different materials are so difficult to simulate. The OpenAI team got around this by adding randomness to the virtual training, giving the robot a proxy for the messiness of reality.

New-wave nuclear power

BOB MUMGAARD/PLASMA SCIENCE AND FUSION CENTER/MIT

Advanced fusion and fission reactors are edging closer to reality.

New nuclear designs that have gained momentum in the past year are promising to make this power source safer and cheaper. Among them are generation IV fission reactors, an evolution of traditional designs; small modular reactors; and fusion reactors, a technology that has seemed eternally just out of reach. Developers of generation IV fission designs, such as Canada's Terrestrial Energy and Washington-based TerraPower, have entered into R&D partnerships with utilities, aiming for grid supply (somewhat optimistically, maybe) by the 2020s.

Small modular reactors typically produce in the tens of megawatts of power (for comparison, a traditional nuclear reactor produces around 1,000 MW). Companies like Oregon's NuScale say the miniaturized reactors can save money and reduce environmental and financial risks.

Carbon dioxide catcher

Carbon dioxide catcher

Practical and affordable ways to capture carbon dioxide from the air can soak up excess greenhouse-gas emissions.



Even if we slow carbon dioxide emissions, the warming effect of the greenhouse gas can persist for thousands of years. To prevent a dangerous rise in temperatures, the UN's climate panel

now concludes, the world will need to remove as much as 1 trillion tons of carbon dioxide from the atmosphere this century.

In a surprise finding last summer, Harvard climate scientist David Keith calculated that machines could, in theory, pull this off for less than \$100 a ton, through an approach known as direct air capture. That's an order of magnitude cheaper than earlier estimates that led many scientists to dismiss the technology as far too expensive—though it will still take years for costs to fall to anywhere near that level.

But once you capture the carbon, you still need to figure out what to do with it.

Carbon Engineering, the Canadian start-up Keith cofounded in 2009, plans to expand its pilot plant to ramp up production of its synthetic fuels, using the captured carbon dioxide as a key ingredient. (Bill Gates is an investor in Carbon Engineering.)

Zurich-based Climeworks's direct air capture plant in Italy will produce methane from captured carbon dioxide and hydrogen, while a second plant in Switzerland will sell carbon dioxide to the soft-drinks industry. So will Global Thermostat of New York



Indian General Election-2019

The 2019 Indian general election was held in seven phases from 11th April to 19th May, 2019 to constitute the 17th Lok Sabha. The votes were counted and result was declared on 23 May. About 900 million people were eligible to vote and turnout was over 67 per cent – the highest ever as well as the highest participation by women voters.

Legislative assembly elections in the states of Andhra Pradesh, Arunachal Pradesh, Odisha and Sikkim were held simultaneously with the general election.

Election system

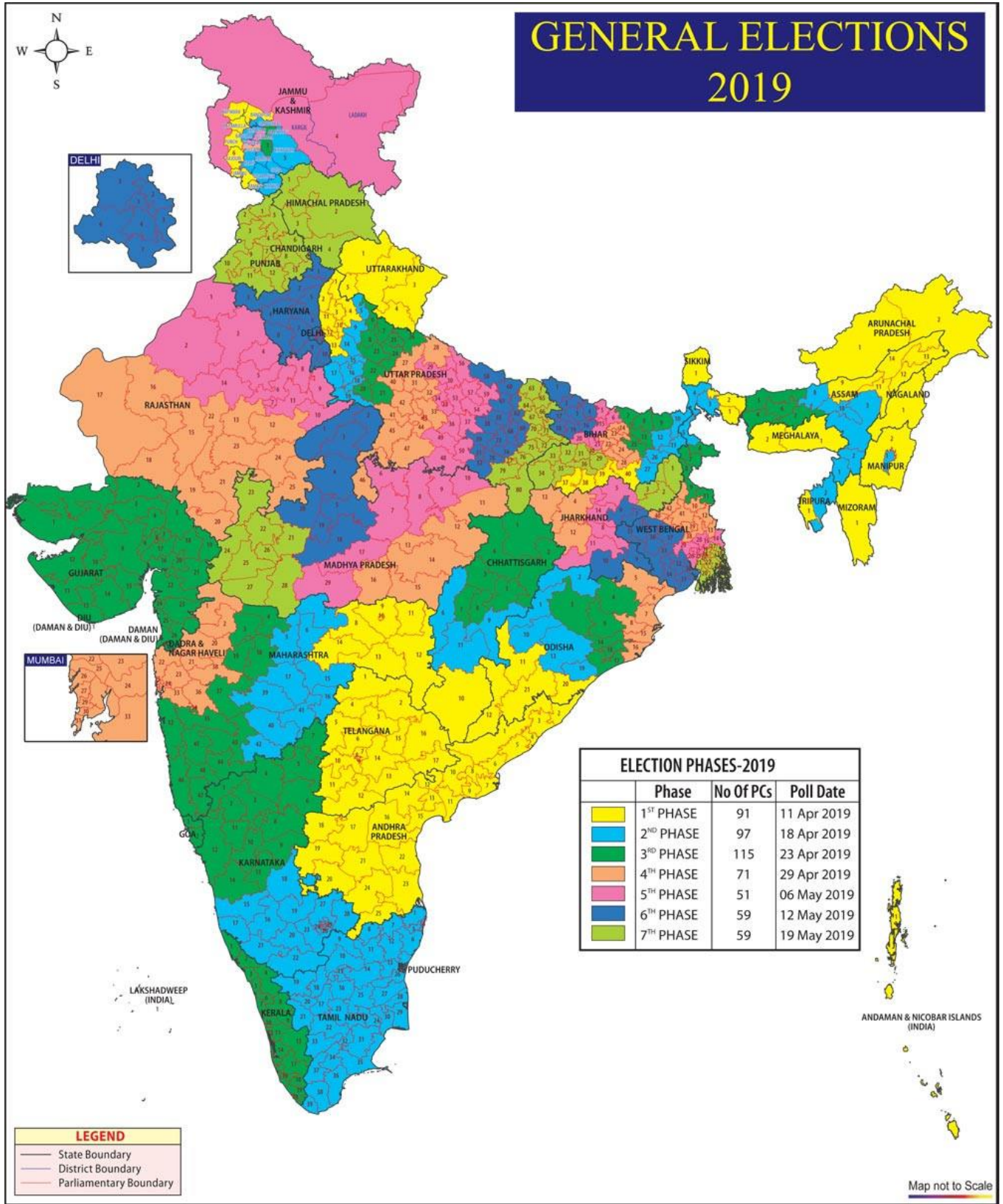
All 543 elected MPs are elected from single-member constituencies using first-past-the-post voting. The President of India appoints an additional two members from the Anglo-Indian community if he believes that community is under-represented. Eligible voters must be Indian citizens, 18 or older, an ordinary resident of the polling area of the constituency and registered to vote, possess a valid voter identification card issued by the Election Commission of India or an equivalent. Some people convicted of electoral or other offences are barred from voting.

The elections are being held on schedule and as per the Constitution of India that mandates parliamentary elections once every five years.

Election schedule

The election schedule was announced by Election Commission of India (ECI) on 10th March, 2019.

GENERAL ELECTIONS 2019



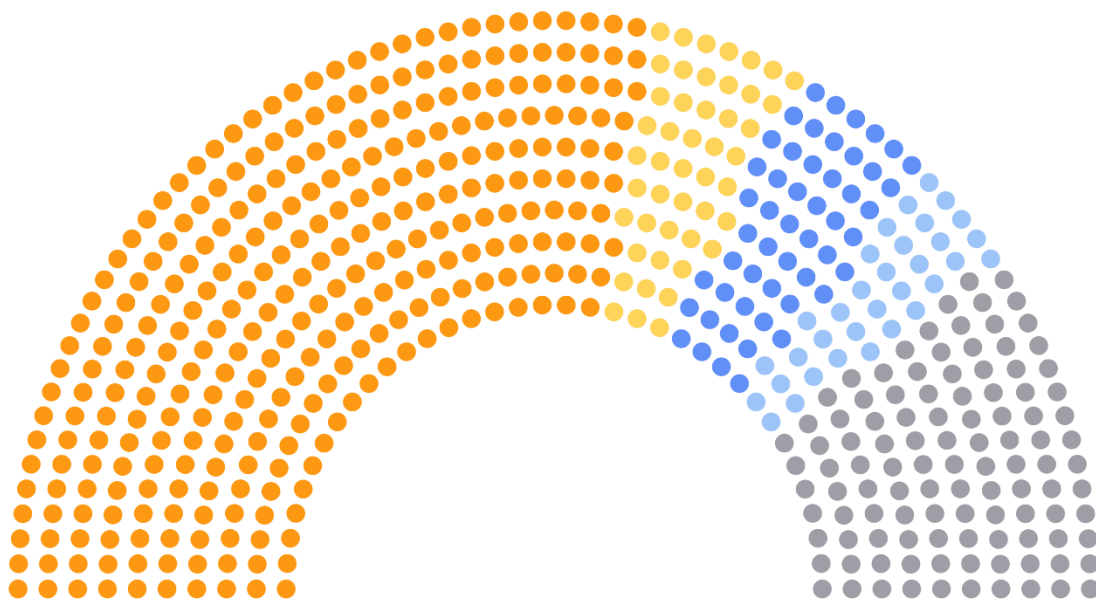
Map Showing all phases of Election-2019

Results

The Bharatiya Janata Party-led NDA won the elections with the BJP itself winning a clear majority. The BJP become the single largest party in the House and surpassed expectations to win 303 seats, with its alliance partners bringing the NDA to a total of 353 seats. Reasons attributed to the victory included the personal popularity of Narendra Modi, effective voter turnout drives by the NDA, a surge in public nationalism following

2019 general election result

● BJP 303 ● Other NDA 47 ● Congress 52 ● Other UPA 33 ● Others 108



Note: The poll was cancelled in one constituency, so only 542 seats were elected

Source: Election Commission of India



the Pulwama attack, the consolidation of Hindu voters in a multi-caste coalition and the successful implementation of social welfare programmes during the First Modi ministry's term.

Cabinet Minister List

Prime Minister Narendra Modi will be in-charge of: Ministry of Personnel, Public Grievances and Pensions, Department of Atomic Energy; Department of Space, all important policy issues, and all other portfolios not allocated to any minister.

Full list of Cabinet Ministers:

1) **Raj Nath Singh** - Minister of Defence.

2) **Amit Shah** - Minister of Home Affairs.

3) Nitin Jairam Gadkari - Minister of Road Transport and Highways; and Minister of Micro, Small and Medium Enterprises.

4) D.V. Sadananda Gowda - Minister of Chemicals and Fertilizers.

5) Nirmala Sitharaman - Minister of Finance; and Minister of Corporate Affairs.

6) Ramvilas Paswan - Minister of Consumer Affairs, Food and Public Distribution.

7) Narendra Singh Tomar - Minister of Agriculture and Farmers Welfare; Minister of Rural Development; and Minister of Panchayati Raj.

8) Ravi Shankar Prasad - Minister of Law and Justice; Minister of Communications; and Minister of Electronics and Information Technology.

9) Harsimrat Kaur Badal - Minister of Food Processing Industries.

10) Thaawar Chand Gehlot - Minister of Social Justice and Empowerment.

11) Dr. Subrahmanyam Jaishankar - Minister of External Affairs.

12) Ramesh Pokhriyal 'Nishank' - Minister of Human Resource Development.

13) Arjun Munda - Minister of Tribal Affairs.

14) Smriti Zubin Irani - Minister of Women and Child Development; and Minister of Textiles.

15) Dr. Harsh Vardhan - Minister of Health and Family Welfare; Minister of Science and Technology; and Minister of Earth Sciences.

16) Prakash Javadekar - Minister of Environment, Forest and Climate Change; and Minister of Information and Broadcasting.

17) Piyush Goyal - Minister of Railways; and Minister of Commerce and Industry.

18) Dharmendra Pradhan - Minister of Petroleum and Natural Gas; and Minister of Steel.

19) Mukhtar Abbas Naqvi - Minister of Minority Affairs.

20) Pralhad Joshi - Minister of Parliamentary Affairs; Minister of Coal; and Minister of Mines.

21) Dr. Mahendra Nath Pandey - Minister of Skill Development and Entrepreneurship.

22) Arvind Ganpat Sawant - Minister of Heavy Industries and Public Enterprise.

23) Giriraj Singh - Minister of Animal Husbandry, Dairy and Fisheries.

24) Gajendra Singh Shekhawat - Minister of Jal Shakti.

SPORTS UPDATE...

Sports Updates

India Vs Australia Test Series (Cricket)

India's first-ever Test series win in Australia. Winning the test series by 2-1. Virat Kohli becomes first Indian Captain to win a test series in Australia.



Australian Open (Tennis)

Winner: Novak Djokovic (Men's Single)

Runner up: Rafael Nadal (Men's Single)



FA Cup (Football)

The 2018–19 FA Cup was the 138th edition of the oldest football tournament in the world. It was sponsored by Emirates and known as The Emirates FA Cup for sponsorship purposes. It started with the Extra Preliminary Round on the weekend of 11 August 2018 and concluded with the final on 18 May 2019.

Winner: Manchester City F.C (Wins 6 finals out of 11 in this tournament. In this tournament Gabriel Jesus score highest goals from Manchester City.

Runner up: Watford



Italian Open (Tennis)

The **2019 Italian Open** (also known as the Rome Masters or the Internazionali BNL d'Italia for sponsorship reasons) was a professional tennis tournament played on outdoor clay courts at the Foro Italico in Rome, Italy from 15 May–21 May 2019. It was the 76th edition of the Italian Open and was classified as an ATP World Tour Masters 1000 event on the 2019 ATP World Tour and a Premier 5 event on the 2019 WTA Tour.



Winner: Rafael Nadal (Men's Single)

Runner up: Novak Djokovic

Winner: Karolína Plíšková (Women's Single)

Runner up: Johanna Konta

Indian Premier League (Cricket)

The **2019 season** of the **Indian Premier League**, also known as **IPL 12**, was the twelfth season of the IPL, a professional Twenty20 cricket league established by the Board of Control for Cricket in India (BCCI) in 2007. At

one point other countries were considered as host the tournament, due to the Indian general elections. But on 8 January 2019, the BCCI confirmed that the tournament will start on 23 March and take place entirely in India. Mumbai Indians defeated the Chennai Super Kings by 1 run to win the final for their fourth title. David Warner won the Orange Cap for the leading run-scorer of the tournament with 692 runs. Imran Tahir, of Chennai Super Kings, was awarded the Purple Cap for finishing as the leading wicket-taker of the tournament with 26 wickets. Andre Russell of Kolkata Knight Riders was named the Most Valuable Player, and Shubman Gill also of Kolkata Knight Riders was named the Emerging Player of the Tournament.

Winner: Mumbai Indians (Fourth Time)

Runner up: Chennai Super Kings



National Basketball Association (NBA)(Basketball)

The **2018–19 NBA season** was the 73rd season of the National Basketball Association (NBA). The regular season began on October 16, 2018 and ended on April 10, 2019. The 2019 NBA All-Star Game was played on February 17, 2019, at the Spectrum Center in Charlotte, North Carolina. The playoffs began on April 13, 2019] and ended on June 13 with the

Toronto Raptors defeating the Golden State Warriors in the 2019 NBA Finals, becoming NBA champions for the first time.

Winner: The Toronto Raptors

Runner up: Golden State Warriors



French Open (Tennis)

The **2019 French Open** was a Grand Slam tennis tournament played on outdoor clay courts. It was held at the Stade Roland Garros in Paris, France, from 26 May to 9 June, comprising singles, doubles and mixed doubles play. Junior and wheelchair tournaments are also scheduled. Rafael Nadal was the defending champion in men's singles and won a record 12th French Open singles title.

Winner:
Rafael Nadal
(Men's
Single)
Runner up:
Dominic
Thiem



Winner: Ashleigh Barty (Women's Single)

UEFA Champions League (Football)

The 2019 UEFA Champions League Final was the final match of the 2018–19 UEFA Champions League, the 64th season of Europe's premier club football tournament organized by UEFA, and the 27th season since it was rebranded the UEFA Champions League. It was played at the Wanda Metropolitano in Madrid, Spain on 1 June 2019, between English sides Tottenham Hotspur, in their first European Cup final, and Liverpool, in their ninth final overall and their second in a row, having been defeated by Real Madrid in 2018. It was the seventh Champions League final – and the fourth of the decade – to feature two teams from the same association, and the second all-English final after 2008. It was also the first final since 2013 to not feature at least one Spanish team, with Real Madrid and Barcelona having shared the previous five titles between them. Winner: Liverpool
Runner up: Tottenham Hotspur
Top Scorer: Lionel Messi



ICC Cricket World Cup (Cricket)

The 2019 ICC Cricket World Cup was the 12th Cricket World Cup. It was hosted by England and Wales, making it the fifth time England has hosted

the World Cup, beginning on 30 May and ending with the final on 14 July. The final was played at Lord's in London, where England beat New Zealand on boundary count after both the match and the subsequent Super Over finished as ties.

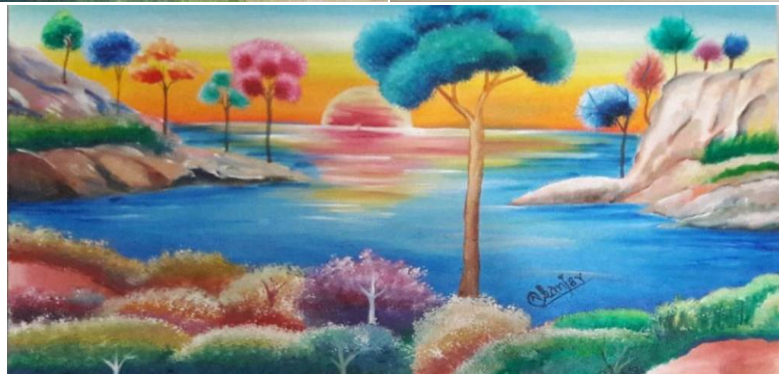
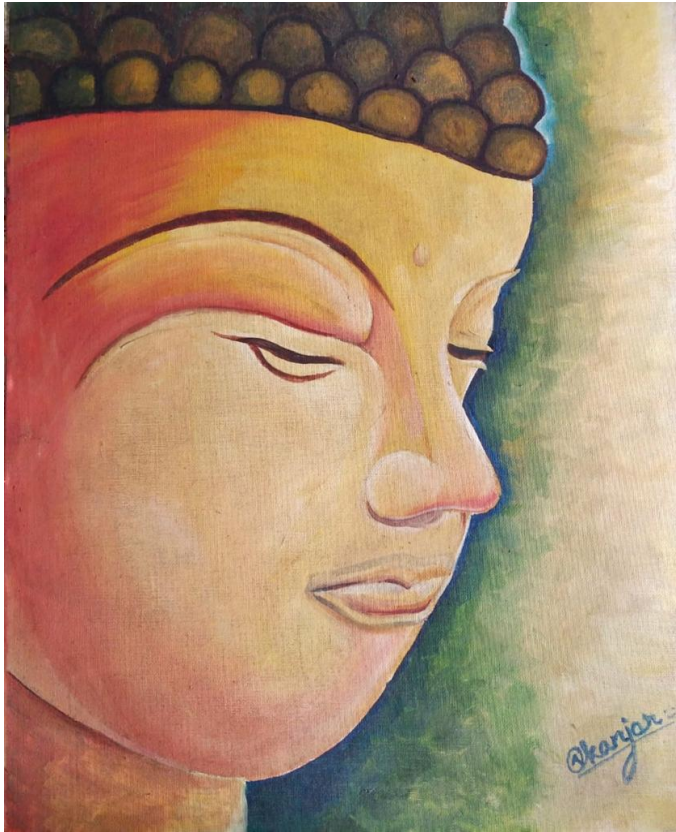
Winner: England

Runner Up: New Zealand

Man Of The Tournament: Kane Williamson



Student's Corner



Drawings by Vipasha Kanjar, 1st Year

Mirror!!

MIRROR!!

MIRROR, MIRROR WHY ARE YOU SO BAD
WHEN SHE LOOKED AT; YOU MADE HER SAD

MIRROR, MIRROR SHE IS UGLY YOU CLAIMED
AT THAT MOMENT HER HEART EVEN LAMED

MIRRO, MIRROR DID U PEEPED IN HER HEART
SHE WAS WITHIN HERSELF A LIVING ART.

MIRROR, MIRROR YOU SHOWED HER THE FAKE
INSTEAD OF OCEAN, YOU JUST SHOWED HER LAKE

MIRROR, MIRROR A LOT SHE CRIED
HER SOUL INSIDE WAS ALMOST DIED.

MIRROR, MIRROR WHY DID YOU HIDE
THE BEAUTY OF HER INNER SIDE!

- SAYONI MUKHERJEE

♠ MTRAKEE

A Poem by Sayoni Mukherjee, 3rd Year



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