



## Qutb Shahi Architecture

**Golconda Fort, Qutb Shahi Tombs** and **Charminar**, located in Hyderabad, are the landmarks that together symbolize the **Qutb Shahi Dynasty** (1518 A.D. to 1687 A.D.).

- The city of Hyderabad served as the capital of the Qutb Shahis, the Asaf Jahi Nizams and is now the capital of the state of Telangana.
- Qutb Shahi Islamic Sultanate was one of the five prominent dynasties that emerged in the Deccan following the downfall of the Bahmani Dynasty in 1518 A.D.
- Seven rulers of the Dynasty ruled for 170 years and successfully resisted the Mughal attack till 1687 A.D. It was the last kingdom to be absorbed in the expanding Mughal Empire.
- The monuments of the Qutb Shahi period represent different building typologies.

### Golconda Fort

- Golconda is a fortified citadel and an early capital city of the Qutb Shahi dynasty.
- Within its **stone fortifications** that cover a length of over seven kilometres, the Golconda Fort envelopes a medieval Islamic settlement.
- The historic structures range from military and defensive structures, mortuary baths, silos, mosques, gardens, residential quarters, pavilions and royal courts, showcasing the entire range of structures that catered to life in a medieval fortified town in India.
- The fort at one point housed precious diamonds such as the Hope diamond, Nassak diamond, and the **Koh-i-Noor diamond**, one of India's most precious gems.

### Qutb Shahi Tombs

- The tombs of Qutb Shahis are a mausoleum complex, a royal necropolis (cemetery) which comprises the tombs of the Royal family and the officials who faithfully served them and also mortuary bath and mosques.
- The complex consists of 30 tombs, mosques and a mortuary bath. The Qutb Shahi tombs collectively constitute an outstanding example of an Indo-Muslim dynastic necropolis and is the most extensive and best epigraphically documented in all of India.
- The tombs are graceful structures with **intricately carved stonework**. The tombs display a distinctive style, a mixture of Persian, Pathan and Hindu forms.
- The material used for constructing these tombs was **grey granite embellished with stucco** (durable finish for exterior walls) ornamentation.
- The tombs form a large cluster and stand on a raised platform. They are domed structures built on square bases surrounded by pointed arches.
- Each tomb stands on a wide quadrangular terrace approached on all sides by flights of steps. The galleries of the smaller tombs are single storied while the larger ones are two storied.

### Charminar

- Charminar is a ceremonial Gateway built to celebrate the foundation of Hyderabad, a new Millennial City, in 1591 A.D.
- Its date of construction that marks the beginning of the second Islamic millennium, an event that was widely celebrated in the Islamic world and therefore suggestive of Hyderabad being deliberately founded as a "Millennial" city.
- It was the first monument in the world constructed using **lime mortar and granite**, it was only

after its construction that the architects throughout the world recognised the strength of lime-mortar in raising huge structures.

- It stands at the crossing of two arterial axes in the old city of Hyderabad and forms the symbolic fulcrum of the city, with its four gateways oriented towards the cardinal directions.
- Charminar provided a point of origin and reference point for the planning grid that determined the layout of the city of Hyderabad.

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## Windmills Not so Green for Wildlife

Windmills are seen as a source of green energy, but researchers have found that they pose a threat to wildlife in forests through collisions and noise.

### Wind Energy in India

- Wind energy is the kinetic energy generated due to the movement of wind. Wind speed of essentially 14-16 km/h is required for rotating the turbines. Wind energy accounts for 70% of the total renewable energy installed in India.
- Tamil Nadu has by far the largest installed wind capacity in India, followed by Maharashtra, Karnataka and Rajasthan.
- In Paris Agreement India has aimed to achieve 60 GW of total installed capacity in wind energy by 2022.
- It has also come out with a 'National Offshore Wind Energy Policy', aiming to harness wind power along India's 7,500 km coastline.

### Impact on the Wildlife

- Researchers found that there are about 50% fewer birds in the areas of windmills compared to undisturbed sites.
- **Collisssion:** The researchers from Salim Ali Centre for Ornithology and Natural History (SACON) have found that windmills kill birds and bats in collisions.
  - It has also led to their movement to the fringes of forests which might increase conflict with humans.
- **Noise:** Birds and mammals have moved away due to noise made by windmills. The noise levels near windmills go up to 85 decibels (dB), which is the equivalent to that of large trucks.
  - The drone of a turbine, which operates day and night, is above 70 dB (noise in urban areas is 55 dB and even in industrial areas, is lower at 75dB).
  - Ambient noise in forests is less than 40 dB.
  - Due to noise pollution by windmills, herbivores have moved away, with predators following them. For eg: In Karnataka different types of antelopes-four-horned, chinkara, and blackbuck moved away towards fringes of forests consequently followed by their predators such as wolves and small carnivores. This is bound to increase the man-animal conflict.
- Forests and Wildlife departments have assured that the impact of windmills on birds and mammals will be looked into by them and guidelines will be drawn to mitigate these effects.
- Protocols and policy guidelines have been called for, before diverting forest land for wind farms.
- Project developers are required to collect data through monitoring efforts at existing and proposed wind energy sites.
- **Careful site selection** is needed to minimize fatalities and in some cases additional research may be needed to address bird and bat impact issues.

### Salim Ali Centre for Ornithology and Natural History (SACON)

- SACON, established in 1990 at Anaikatti, Coimbatore (Tamil Nadu) is a national centre for information, education and research in ornithology and natural history in India.

- It was named after Dr. Salim Ali in appreciation of his lifelong services to India's bird life and conservation of natural resources.
  - It designs and conducts research in ornithology covering all aspects of biodiversity and natural history.
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## **J.S. Verma Committee on Sexual Harassment at Workplace Act**

Union Ministry for Women and Child Development will set up a committee of senior judicial and legal persons to look into the legal and institutional framework to curb sexual harassment at workplaces following the #MeToo campaign on social media.

- The Justice JS Verma committee was set up after the Nirbhaya incident of December 2012 and submitted its recommendations on strengthening the laws to curb crimes against women.

### **JS Verma Committee recommendations on Sexual Harassment at the Workplace Act:**

- Justice J.S. Verma Committee had recommended **setting up of an employment tribunal instead of an internal complaints committee** (ICC) in the Sexual Harassment at the Workplace Act.
- To ensure speedy disposal of complaints, the committee proposed that the tribunal should not function as a civil court but may choose its own procedure to deal with each complaint.
- An internal complaints committee as laid down under the act could be counterproductive as dealing with such complaints in-house could discourage women from filing complaints.
- Domestic workers should be included within the purview of the Act.
- The Committee has termed the Sexual Harassment Act “unsatisfactory” and said it did not reflect the spirit of the Vishakha guidelines — framed by the Supreme Court in 1997 to curb sexual harassment at the workplace.
- The Committee said any “unwelcome behavior” should be seen from the subjective perception of the complainant, thus broadening the scope of the definition of sexual harassment.
- The Verma panel said an employer should be held liable if
  - he or she facilitated sexual harassment
  - permitted an environment where sexual misconduct becomes widespread and systematic
  - Where the employer fails to disclose the company’s policy on sexual harassment and ways in which workers can file a complaint
  - When the employer fails to forward a complaint to the tribunal
  - The company would also be liable to pay compensation to the complainant
- The panel opposed penalizing women for false complaints as it can potentially nullify the objective of the law.
- The Verma panel also said that the time-limit of three months to file a complaint should be done away with and a complainant should not be transferred without her consent.

### **The Protection of Women Against Sexual Harassment at Workplace Act, 2013**

- The Act defines sexual harassment at the workplace and creates a mechanism for redressal of complaints. It also provides safeguards against false or malicious charges.
- Every employer is required to constitute an Internal Complaints Committee at each office or branch with 10 or more employees.
- The Complaints Committees have the powers of civil courts for gathering evidence.
- The Complaints Committees are required to provide for conciliation before initiating an inquiry if requested by the complainant.
- Penalties have been prescribed for employers. Non-compliance with the provisions of the Act shall

be punishable with a fine.

- Repeated violations may lead to higher penalties and cancellation of license or registration to conduct business.

## GRAP to be Enforced in Delhi-NCR

Environmental Pollution (Prevention and Control) Authority (EPCA) will implement an emergency action plan in Delhi to tackle rising air pollution.

- The emergency plan is called the Graded Response Action Plan (GRAP).
- Graded Response Action Plan (GRAP) was prepared by the Ministry of Environment, Forests & Climate Change (MoEFCC) after the order of Supreme Court of December 2016.
- GRAP includes the measures which will be taken by different government agencies to prevent worsening of Air Quality of Delhi-NCR (National Capital Region) and prevent PM10 and PM2.5 levels to go beyond 'moderate' national Air Quality Index (AQI) category.
- The EPCA is mandated to enforce the Graded Response Action Plan (GRAP) in the city as per the pollution levels.

### Types of measures under Graded Response Action Plan (GRAP):

- Measures to be taken are divided into different categories based on the Pollution level:

Category	Ambient Particulate Matter (PM) Concentration	Measures
<b>Moderate to Poor</b>	<ul style="list-style-type: none"><li>▪ PM 2.5 between 61-120 <math>\mu\text{g}/\text{m}^3</math></li><li>▪ PM10 between 101-350 <math>\mu\text{g}/\text{m}^3</math></li></ul>	<ul style="list-style-type: none"><li>▪ Enforce pollution control in thermal power plants</li><li>▪ Mechanized sweeping on roads</li><li>▪ Ban on firecrackers</li><li>▪ Stop garbage burning</li></ul>
<b>Very Poor</b>	<ul style="list-style-type: none"><li>▪ PM2.5 between 121-250 <math>\mu\text{g}/\text{m}^3</math></li><li>▪ PM10 between 351-430 <math>\mu\text{g}/\text{m}^3</math></li></ul>	<ul style="list-style-type: none"><li>▪ Stop use of diesel generator sets</li><li>▪ Increase bus and metro services and increasing frequency of metro service</li><li>▪ Stop use of coal/firewood in hotels and open eateries</li></ul>
<b>Severe</b>	<ul style="list-style-type: none"><li>▪ PM2.5 more than 250 <math>\mu\text{g}/\text{m}^3</math></li><li>▪ PM10 more than 430 <math>\mu\text{g}/\text{m}^3</math></li></ul>	<ul style="list-style-type: none"><li>▪ Increase frequency of mechanized sweeping of road and sprinkling of water on roads</li><li>▪ Close brick kilns, Hot Mix plants, Stone Crushers</li><li>▪ Shut down Badarpur power plant</li><li>▪ Introduce concessional rates to encourage off-peak travel in public transport.</li></ul>
<b>Severe+ or Emergency</b>	<ul style="list-style-type: none"><li>▪ PM2.5 of or more than 300 <math>\mu\text{g}/\text{m}^3</math></li><li>▪ PM10 of or 500 <math>\mu\text{g}/\text{m}^3</math></li></ul>	<ul style="list-style-type: none"><li>▪ Stop entry of diesel trucks into Delhi (except essential commodities)</li><li>▪ Stop construction activities</li><li>▪ Introduce odd and even scheme</li></ul>



(persist for 48 hours or more)	▪ Shutting of schools
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## National Air Quality Index (AQI)

- National Air Quality Index (AQI) is under the aegis of the CPCB.
- AQI has been developed to inform people about the level of eight pollutants— PM2.5, PM10, Ammonia, Lead, nitrogen oxides, sulfur dioxide, ozone, and carbon monoxide.

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## Cyclone Titli

Cyclone Titli has become the third major cyclone to hit the Odisha-Andhra coastal zone in the last five years, all in October. The other two were Phailin and Hudhud.

- Cyclone Titli has been named by Pakistan.
- Both the Bay of Bengal and Arabian Sea experience cyclonic events, however the frequency and intensity of cyclones in the Bay of Bengal is higher. Moreover, nearly 58% of cyclones formed in the Bay of Bengal reach the coast as compared to only 25% of those formed in the Arabian Sea.

## Temporal and Spatial Distribution of Cyclone

- The reason that cyclones such as Titli, Phailin (2013) and Hudhud (2014) typically strike in October is that wind shear (the difference within wind speeds and direction at two different levels) is low during this time; low wind shear, when combined with surface sea temperatures greater than 26°C, raises the likelihood of cyclones. In monsoon season, cyclones are rare because of high wind shear.
- Since sea surface temperatures and humidity both directly correlate with chances of cyclone formation, the Bay of Bengal is a more likely target because it gets higher rainfall, and because the slow winds around it keep temperatures relatively high: about 28 degrees around the year. Warm air currents enhance this surface temperature and aid the formation of cyclones.
- In addition, the Bay receives higher rainfall and constant inflow of fresh water from the Ganga and Brahmaputra rivers. This means that the Bay's surface water keeps getting refreshed, making it impossible for the warm water to mix with the cooler water below, making it ideal for a depression.
- On the other hand, the Arabian Sea receives stronger winds that help dissipate the heat, and the lack of constant fresh water supply helps the warm water mix with the cool water, reducing the temperature.
- Due to the lack of any large landmass between the Pacific and the Bay of Bengal, cyclonic winds easily move into the Bay of Bengal. Once here, the winds encounter the Western Ghats and the Himalayas, either becoming weak or getting blocked in the Bay, but never reaching the Arabian Sea.
- Adjacent to the northwest Pacific, which is one of the world's most active basins for typhoons, the Bay of Bengal receives the remnants of major landfalls in the Philippines, China and South Asia. From these places come low-pressure systems that develop into a monsoon depression or a cyclone.

## Prediction and Evacuation

- According to scientists, the prediction is difficult because of budgetary and meteorological factors. E.g.:
  - The US has dedicated aircraft that fly directly into the clouds to study moisture levels and

gather various data on cyclone profile. While, India largely rely on satellite images (a top view) that reveals little data on moisture content and intensity. Indian scientists get a more detailed picture only when a cyclone is 300-400 km from the coast, which reduces preparation time.

**The evacuation exercises are classified into three types:**

1. Preventive- In preventive (or horizontal) evacuation, the impact area is meant to be completely evacuated, but this is a measure rarely taken in India because of poor roads and inadequate public transportation. Also, poor people rarely have the resources to find alternative accommodation.
2. Shelter-in-place evacuation involves fortification of existing houses and community buildings, which again required financial resources.
3. Vertical evacuation, people are directed to specially designed buildings within the impact area. This strategy was largely followed during Cyclone Titli.

[Read more about Cyclone Titli](#)

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## **Important Facts for Prelims (15th October 2018)**

### **Gujjar-Bakarwals Transhumance**

- Gujjar Bakarwals comprise the third-largest community in Jammu and Kashmir, constituting about 11.9% of the population as per the 2011 census.
- However, as the census survey in 2011 did not take into account the nomadic people who were away in the upper reaches of the state to graze their livestock, on which their livelihood depends.
- The population of Gujjars and Bakarwals, spread over 21 districts of the state, is highest in the Jammu region, followed by Kashmir valley.
- Gujjar Bakarwals (the Bakarwals are a subgroup of Gujjars) keep herds of goats owing to which they are called as Bakarwals. They practice transhumance.
  - Transhumance is derived from the Latin terms 'trans' meaning across and 'humus' meaning ground. It is defined as 'the seasonal migration of humans along with their sheep, goats, and other livestock to higher or lower pastures in the summer and winter season'. These people are basically herders who live in the valleys and tend to travel to higher pastures in summer and come down to the lower valleys in winter.

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