



## Mains Practice Question

**Q.** Evaluate the role of traditional Indian architectural principles in promoting sustainable urban development in modern India. **(150 words)**

02 Sep, 2024 GS Paper 1 Indian Heritage & Culture

### Approach

- Introduce by highlighting the significance of Traditional Indian architecture
- Give key Traditional Architectural Principles and their applications
- Highlight the challenges in Implementation
- Conclude suitably.

### Introduction

**Traditional Indian architecture**, rooted in centuries of wisdom and experience, offers valuable lessons for sustainable urban development in modern India. By incorporating these principles into contemporary design, we can create more **resilient, environmentally friendly, and culturally sensitive cities**.

### Body

#### Key Traditional Architectural Principles

- **Climate-responsive Design: Courtyard houses (havelis) in Rajasthan** providing natural ventilation and cooling
  - **Application:** Incorporating courtyards and open spaces in modern apartment complexes
- **Use of Local, Eco-friendly Materials: Cob architecture in Gujarat** using mud, clay, and straw
  - **Application:** Promoting **compressed stabilized earth blocks (CSEB)** in contemporary construction
- **Passive Cooling Techniques: Jaali screens in Mughal architecture** for air circulation and temperature control
  - **Application:** Using perforated facades in office buildings to reduce heat gain
- **Water Conservation and Management: Step wells (baolis)** for water harvesting and storage
  - **Application:** Integrating rainwater harvesting systems in urban planning
- **Integration with Nature: Sacred groves (devrai)** in Maharashtra preserving biodiversity
  - **Application:** Creating urban forests and green corridors in city master plans

#### Challenges in Implementation:

- **Economic Constraints: High initial costs** often deter the adoption of sustainable technologies, such as **solar panels or rainwater harvesting systems**, which are perceived as less cost-effective compared to traditional methods.
- **Regulatory Hurdles: Outdated building codes** and a lack of incentives hinder the approval and integration of traditional sustainable practices in modern construction, making it challenging to implement designs like rammed earth structures.
- **Skill Gap and Knowledge Transfer:** There is a shortage of **craftsmen skilled in traditional**

**techniques** and a lack of formal education combining traditional and modern architecture, leading to the decline of practices like intricate jali work.

- **Scalability Issues:** Traditional designs, while effective on a small scale, **struggle to adapt to large urban projects**, such as the courtyard concept, which is difficult to implement in high-rise complexes.
- **Cultural Shifts:** Changing social norms and **preferences for modern aesthetics** reduce the appeal of traditional designs, like courtyard houses, especially as joint family homes become less common.
- **Increased Extreme Weather Events:** The increasing intensity of extreme weather events like **heat waves challenges the application of traditional Indian architectural principles**, which were tailored to past climatic conditions.
  - Traditional designs, such as courtyards, may no longer suffice under today's extreme heat.

## Conclusion

Traditional Indian architectural principles offer valuable insights for **sustainable urban development in modern India**. By incorporating these principles into contemporary design, we can create more **resilient, environmentally friendly, and culturally sensitive cities**. While adapting traditional practices to modern needs, it is crucial to strike a balance between **preserving heritage and embracing innovation**.

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