



BHILAI INSTITUTE OF TECHNOLOGY RAIPUR DE-  
PARTMENT OF CIVIL ENGINEERING

# AAKAAR

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## Famous Civil Engineers

### **George Stephenson (1781-1848)**

George Stephenson revolutionized transportation and urban infrastructure by creating the world's first public inter-city railway line that used steam locomotives. The British Engineer, often referred to as "The Father of Railways," is also credited with devising the historic measurement of the rail gauge at four feet eight and a half inches, which became the standard railway gauge measurement worldwide.

#### **Burj Khalifa:-**

The Burj Khalifa known as the Burj Dubai prior to its inauguration in 2010, is a skyscraper in Dubai, United Arab Emirates. With a total height of 829.8 m (2,722 ft, just over half a mile) and a roof height (excluding antenna, but including a 244 m spire) of 828 m (2,717 ft), the Burj Khalifa has been the tallest structure and building in the world since its topping out in 2009, supplanting Taipei 101, the previous holder of that status.

**Cost-** The total Burj Khalifa construction cost, it is \$1.5 billion if you convert it into Indian Rupees it will be INR 11250 Crore

**Sculptor-** The Burj Khalifa height is a staggering 828 meters (2716.5 feet) tall, soaring over Dubai. It's three times as tall as the Eiffel Tower and nearly twice as tall as the Empire State Building. Laid end to end, its pieces stretch over a quarter of the way around the world. It's cloud-piercing height is certainly one of the most impressive facts about Burj Khalifa.

**Specialities-** At over 828 metres (2,716.5 feet) and more than 160 stories, Burj Khalifa holds the following records:

#### **Tallest building in the world**

- Tallest free-standing structure in the world
- Highest number of stories in the world
- Highest occupied floor in the world
- Highest outdoor observation deck in the world
- Elevator with the longest travel distance in the world



## Modular Construction

Modular construction is one of the most popular developments in civil engineering where a building is constructed off-site using the same materials and designed to the same standards as conventional on-site construction.

This innovative building technique limits environmental disruption, delivering components as and when needed, and turning construction into a logistics exercise. It also has strong sustainability benefits, from fewer vehicle movements to less waste. With up to 70 per cent of a building produced as components, it allows a move towards "just in time" manufacturing and delivery. In use in the United States and UK, Chinese developer Broad Sustainable Building recently completed a 57-storey skyscraper in 19 working days using this method.

## Alumini Section



Civil Engineering  
2015-19 Batch

Civil Engineering 2015-19 Batch Ms. Madhvi Gavai of civil engineering 2015-19 batch got selected as BDA in BYJU'S, Ahmedabad. Byju's is an Indian multinational educational technology. Company, headquartered in Bangalore. She shared her experience telling us that she raised her knowledge from our institution to get selected for the current position she is

## FacultySection

- Prof. Vaibhav P. Deshpande & Prof. Ankit Shinde published a paper on "An Experimental Analysis of bottom ash with pond ash-A sustainable approach" in International Research Journal of Engineering and Technology.
- Prof. Deepmala Pandey published a paper on "Evaluation of Geopolymer concrete on partial replacement of fine aggregate by crushed stone dust" in Scopus Index journal of Design Engineering.

## StudentsAcheivement

- Mr. Devendra Saxena selected as Assistant Engineer in Chhattisgarh Water Resource department.
- Mr. Ritendra Bairagi started to work in Shri Bajrang Power and Ispat Ltd Saurashtra as an Assistant Engineer.

## Software Used in Civil Engineering

### **HEC-HMS:-**

Considered a standard for hydrologic simulation, The Hydrologic Modeling System (HEC-HMS) is designed to simulate the hydrologic process of watershed systems and provides you with nearly all the drainage values you could need. In the program, you describe the physical properties of a watershed and the meteorology that act on the watershed during a defined time span of simulation. The simulation results are easy to understand. Summary tables for each element are provided including peak flow, total volume, depth and storage values in reservoirs and ponds, and more.

Developed at the Hydrologic Engineering Center of the US Army Corps of Engineers, HEC-HMS is made available to the public.

**Silent Features:-**Navigation: HEC-HMS is used to compute real-time upstream and lateral inflows to navigable rivers so that navigation dams and locks can be operated to maintain shipping. In a planning mode of analysis, HEC-HMS can be used to estimate long-term water supply available for lock operations.

### **What method does HEC HMS use?**

The Modified Clark method (ModClark) is a linear quasi-distributed unit hydrograph method. An implementation of the kinematic wave method with multiple planes and channels is also included. All of the previously-mentioned transform methods can be used with basin-average and/or gridded meteorologic data.



## COMPOSTING

Composting is an aerobic method of decomposing organic solid wastes. It can therefore be used to recycle organic material. The process involves decomposition of organic material into a humus-like material, known as compost, which is a good fertilizer for plants. Composting requires the following three components: human management, aerobic conditions, development of internal biological heat. **PHASES OF COMPOSTING** Under ideal conditions, composting proceeds through three major phases: An initial, mesophilic phase, in which the decomposition is carried out under moderate temperatures by mesophilic microorganisms. As the temperature rises, a second, thermophilic phase starts, in which the decomposition is carried out by various thermophilic bacteria under high temperatures. As the supply of high-energy compounds dwindles, the temperature starts to decrease, and the mesophiles once again predominate in the maturation phase