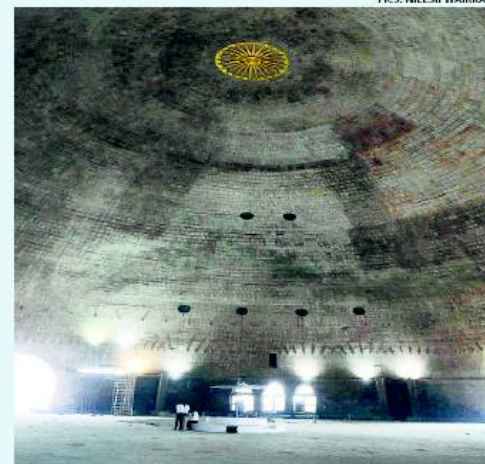


THERE IS NO PLACE LIKE DOME



Mumbai gets a new landmark with the completion of the largest pagoda in South Asia, discovers **Manoj R Nair**

Acharya S N Goenka, disciple of Syagyi U Ba Khin, a great Vipassana teacher from Myanmar (Burma) had a dream. He wanted to build a replica of Rangoon's (Yangon) Shwedagon or Golden Pagoda to acknowledge the Burmese masters who kept the meditation technique alive when it was lost in the country of its birth.

"Indian teachers travelled to Burma to teach Vipassana to monks who kept the tradition alive so that after centuries Indians could relearn what they had taught," said Arun Toshniwal, a disciple of Goenka and a Vipassana teacher.

Goenka's dream has now taken shape among the mangroves and green fields of Gorai near Borivali. The Global Pagoda as it is called towers as high as Shwedagon. In November last year, the stone work on the monumental structure was completed and when it is inaugurated this coming February, Mumbai will get a new, colossal landmark.

But unlike the Burmese pagoda which is a solid structure made of brick and covered in metal, the replica in Mumbai is hollow with three domes stacked one above the other. The lower dome which is 86-feet high is a huge pillar-less meditation hall that can seat 8000 people.

"Pagodas or Stupas are traditionally places of worship. Goenkaji's teacher also used them for meditation. But Goenkaji took a step forward and constructed a pagoda specifically for meditation," said Dr Dhananjay Choudhary, Goenka's secretary.

The Vipassana master is now 85

years old, and after having taught meditation techniques first discovered by Gautam Buddha, he now prefers to remain in the background, guiding the Global Vipassana Foundation as it spreads the technique through centres across the world.

The foundation stone for the pagoda was laid in 1997. But the structure's monumental size presented challenges that ultimately led to the blending of modern construction methods with ancient Indian building techniques.

The structure's monumental size presented a great challenge that led to the blending of ancient and modern construction techniques

When structural architect N R Verma was approached to design the pagoda, the first question in his mind was the longevity of the proposed building. "History has shown that Reinforced Cement Concrete (RCC) does not last more than a century. The oldest RCC structure existing in the world is just 150 years old," said Verma. "We realised that there was no alternative to a load-bearing stone or brick structure if we had to create a structure that would last for thousands of years."

So it was decided to construct the pagoda in stone. The cost of constructing in stone is three times more expensive and far more time consuming. But the cost was a small problem compared to the architectural challenges of constructing such a huge structure completely in stone.

The biggest stone masonry dome constructed in India till then was the Gol Gumbad or Gol Gumbaz, the 17th-century tomb of Sultan Adil Shah in Bijapur. The mausoleum had a dome with a diameter of 168 feet

and a height of 51 metres; the central dome of the Global Pagoda was to be 285 feet in diameter and 89 metres in height. Also the architects were sceptical whether skills to construct such a huge dome still existed in India; at least there were no ancient books that offered information on the techniques.

One possibility the engineers thought of was to build a dome over a huge mound of mud. Later the mud could be removed. But considering the huge quantity of soil this method would require, this idea was brushed aside as not practicable. "The only technique that could be used was the stone interlocking system. But we had no knowledge of the method," said Verma.

As the engineers and architects looked for help, the Sompuras, the traditional stone-architects of Gujarat and Rajasthan were consulted. The Sompuras are repositories of the skill passed from generation to generation. Chandubhai Trivedi, a Sompura stone expert from Ahmedabad who died a few years ago suggested the stone locking technique, where each successive stone-ring of the dome acts as a keystone to hold the blocks in place, as the best technique to build the dome.

Work on the pagoda began in the year 2000 at a construction cost of around Rs 100 crores, a sum met from donations given by the thousands of people whose had learnt meditation from the mother foundation.

While black stone is used to construct the interior of the thick walls, the building is clad in pink Jodhpur stone or sandstone, most of which was carved and transported from Pindwara in Rajasthan. Sompura stone expert Govardhan Jagaji from Pindwara has been living at the site for nearly six years with around 300 stone masons brought from his village. Govardhan, 56, explained why sandstone was chosen as a medium of construction. "Sandstone does not deteriorate in salt-laden wind and can withstand extreme temperature," said Jagaji. "In Mumbai's weather, RCC cannot last more than 100 years; stone structures can last for thousands of years."

One of the smaller pagodas that can accommodate up to 100 people

EXTREME ENGINEERING

Height: 325 feet
(as tall as a 30-storey building)

Thickness of the load bearing walls:
Up to 30 metres thick in places.

Diameter of meditation hall: 280 feet

Area of meditation hall: 61,300 square feet

Quantity of Jodhpur stone used:
8,50,000 cubic feet
(enough to fill around 5000 trucks)

