

PROF SK JAIN, DIRECTOR, IIT-GANDHINAGAR, SAYS THAT THE BUILDINGS' SHAKING IN 2001 INDICATED THAT THE QUAKE WAS NOT AS SEVERE AS IS THOUGHT

'Bldgs that fell in 2001 quake were flawed'

The shaking of buildings during an earthquake is measured on a scale of I to XII. A value of IV suggests a level of shaking that can be felt by most people. During the quake that hit Gujarat in 2001, the shaking of buildings measured in Ahmedabad was of the value of VII, which is not so powerful as to cause the destruction it did. If I remember it correctly, around 130 multi-storied buildings in the city had collapsed. But the shaking was not so powerful as to cause the destruction of so many structures. The reason why so many buildings came down was that there were flaws in their construction, their designs.

Most of the structures that



'NORMS MUST BE ENFORCED'

There has been some improvement in the work of the construction industry, though careful study is still needed to assess it properly. I see improvement in design of the buildings. Also, I see a proper frame system more often than I used to earlier.

What is still needed is enforcement of construction norms. Builders who violate rules should be punished.

came down were multi-storied buildings and yet not all high-rise buildings collapsed. The obvious conclusion is that the safety aspect of the structures was neglected by builders. The trend in management of building con-

struction in Ahmedabad was not as it should have been as it did not pay adequate attention to the safety aspect.

I remember that people at the time were surprised that so many high-rise structures had collapsed but when we

and other engineers visited them a week later, we were not surprised. We could see that the construction industry of the time had violated practically all fundamental principles of construction laid down for reinforced concrete (RC) frame structures.

The architects in Ahmedabad were designing

multi-storied RC structures without paying attention to shock waves that will flow through the buildings in the event of an earthquake, or how they will affect their foundations. In short, the buildings that fell actually didn't have a 'frame action' though they were called

'frame buildings'.

The structural engineers either didn't understand the impact of quakes on large buildings or chose to ignore this aspect. Perhaps they didn't actually

take the trouble of doing the calculations required to anticipate the impact of shock waves during a quake.

Hence, there was a complete failure of the building delivery mechanism in the city - from architectural aspects to structural and construction principles. The result was that a large number of buildings came down.

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