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To Whom It May Concern:

Sub: *Seismic protection of Residential Building using Base Isolation technology*

It gives me a great pleasure to report that **SLD Infrastructure Pvt Ltd, Bharuch** is planning to use the **Base Isolation** technology for the seismic protection of its **ESSENZA residential building** project at Bharuch. At present, the base isolation technology offers the maximum amount of protection to qualifying structures of buildings, bridges, nuclear power plants, etc. It is based on the concept of separating the structure from the ground to avoid earthquake damage by use of specialized bearings above the foundation. During the earthquake, as the ground moves, these isolation bearings deform and move but the structure stays still!

Considering the sophistication of this advanced technology and associated costs of bearings and special features of utilities crossing the isolation level, keep its application restricted to high value assets and facilities that should remain operational during and after the earthquake, such as hospitals, airports, bridges, power plants and other critical facilities. However, as the costs of isolation bearings are going down, the technology is becoming affordable even for the residential buildings. The use of base isolation technology moves up the performance of these structures to **continued occupancy and negligible damage** from the conventional **life safety and controlled damage** goal where the structure is expected to receive limited damaged not leading to collapse.

In India, a handful number of real life projects have been attempted using base isolation technique and they all have been for hospital buildings. The ESSENZA is the first residential project to be constructed using the base isolation technology and it is clearly a pioneering effort of the SLD Infrastructure, Bharuch to bring the base isolation technology to residential infrastructure sector in the country.

We at IIT Kanpur are providing all the required technical support and know how of the base isolation technology as applicable to this particular project, so that the chosen base isolation system is most effective and delivers the maximum protection at economy prices. This specialized help was necessitated by the inherent sophistication of the technology and non-availability of Indian Standards for design of such structural systems.

With the success of this residential project using base isolation, it is hoped that many more such projects will come up especially in the high seismic zones of our country. It is imperative on various government agencies to promote the wide spread use of the base isolation technology for the variety of structures, including residential buildings, as it delivers the maximum protection from earthquakes.

Please let me know if any further information is required.

Sincerely,

Dr. Durgesh C Rai, Professor