



FAQS - UNDERSTANDING HIGH PERFORMANCE ENGINEERING

Q: What are the different types of Earthquake Resistant buildings?

A: Earthquake Resistant buildings are of 4 types depending upon how they will perform in an Earthquake.

1. Operational
2. Immediate Occupancy
3. Life Safety
4. Collapse Prevention

Government has given specific definitions to each of these building types and they are in-line with international definitions.

Q: What is High Performance Engineering (HPE)?

A: Using advance structural design techniques along with base isolation/supplementary damping to either design Operational or Immediate Occupancy buildings or upgrade existing Collapse Prevention and Life Safety buildings to Immediate Occupancy standards is called HPE.

Q: What are the cost implications of HPE?

A: The cost implications for different scenarios are:

Type of Building	Cost and Design Implication
New Operational level building	Not possible without HPE.
New Immediate Occupancy building	HPE is upto 20% economical than a conventionally designed Immediate Occupancy building.
Seismic upgrade of existing building	HPE is upto 40% economical than a conventional seismic upgrade.
Comparison of a new HPE Immediate Occupancy building and new conventionally designed Life Safety building	The initial construction cost is the same. However, life-cycle costs of HPE building is much lower.

Q: Can all structural engineers undertake HPE?

A: No, at present only selected structural designers in India are able to do HPE. However with passage of time it will become a common practice.

Q: What are the peripheral benefits of HPE without the building having to witness an actual earthquake?

- A: The peripheral benefits are:
1. Higher capital value for Operational and Immediate Occupancy buildings.
 2. Higher rental value.
 3. Lower insurance cost.
 4. Lower life-cycle costs.
 5. Boost in customer confidence.