

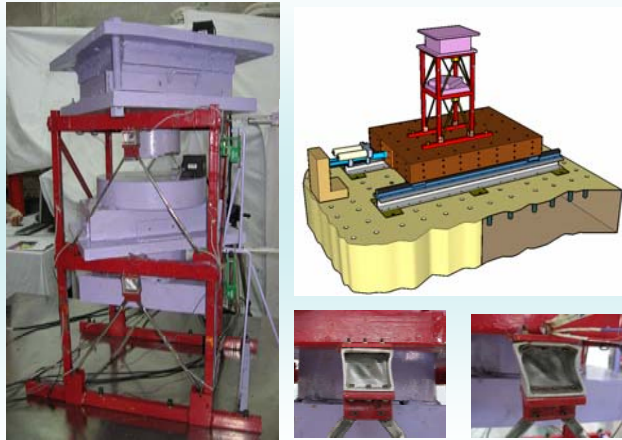
Shaking Table Studies of Shear-Link Braced Frame



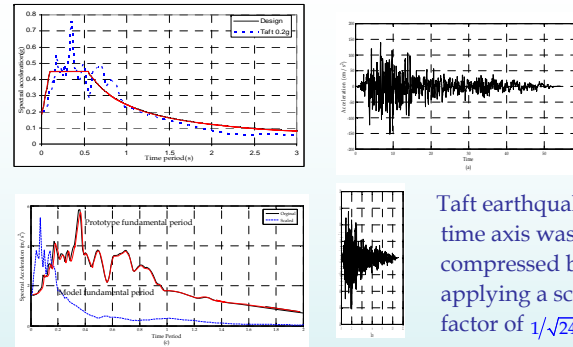
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SLBF Specimen Mounted on the Shaking Table

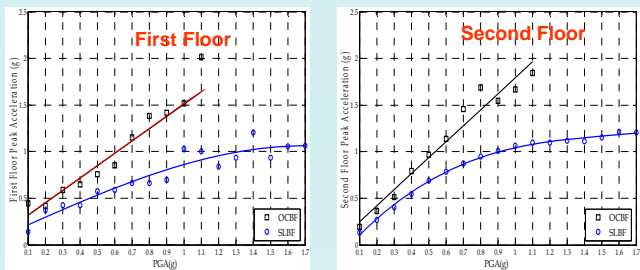


Earthquake Simulation Test Program

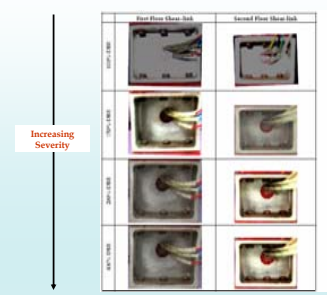


Comparison of OCBF and SLBF

Peak Response value of Floor Accelerations



Shear-links at Different Excitation Levels



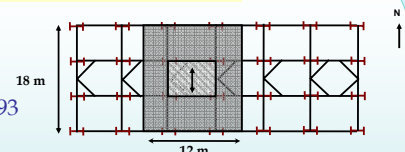
Shear-links after TAFT-17 test (model PGA=1.7g and prototype PGA=0.85g)



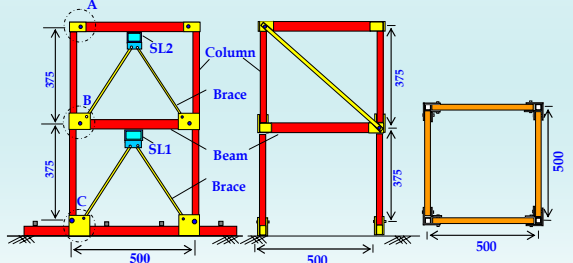
First Storey Second Storey

Prototype Building

In N-S direction, the bracing frame systems were designed to provide the code IS 1893 (Zone V) level lateral resistance.

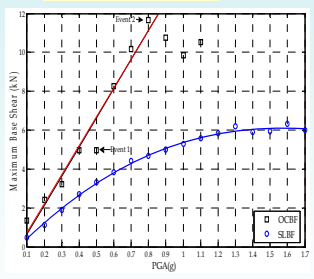


Model Frame

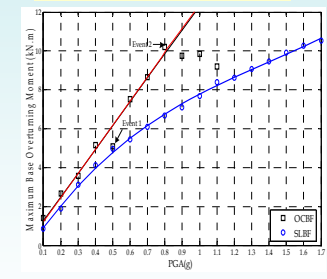


Element	Section
Column	SHS 25X25X1.2mm
Beam	RHS 25X40X1.4mm
Ground floor brace	10 mm dia, 1 mm thick pipe
First floor brace	7 mm dia, 1 mm thick pipe
Ground floor Shear-link (SL1)	Web area 46 mm ² and 37.5 mm height
First floor Shear-link (SL2)	Web area 36 mm ² and 31.25 mm height

Base shear



Overturning Moment



Increasing Severity

Increasing Severity

The SLBF system showed a significantly enhanced performance compared to OCBF system in terms of lower floor accelerations, base shear and overturning moment.

Conclusions

- The SLBF system attracted less base shears during all simulation tests. Moreover, the peak base shears were observed to be progressively decreasing with increasing severity of ground motion.
- Overturning moments and floor accelerations of SLBF were also substantially smaller than OCBF.
- Inelastic activities were confined to shear-link in SLBF, while the other structural members remained in the elastic range even upto 1.7g PGA of simulated motions.

Acknowledgments

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