Passive Structural Control Project II

- Design isolation devices -

Information & Design Object

The structure information is same as the Project I. Please refer to the following table for the design object and parameters for the calculations. You are allowed to make sensible assumptions if you needs.

1. Equivalent period: $T_{eD} = 2.5 \sim 3.5$ sec.
2. Design total displacement D_{TD} should be smaller than table value. Or you can design the passive energy dissipation devices (such as viscous damper) at the isolation layer. You should have a reasonable discussion if the isolator devices weren't able to satisfying the requirement.
3. Three type isolator devices, FPS, HDRB and LRB should be considered individually.
4. The content frame of project II can be similar to the project I, and you may try to compare the structural efficiency between the passive energy dissipation devise and the isolation system.

Team	$D_{TD} \leq$ (cm)	IRHD	$\sigma_c \leq$ (kgf/cm^2)
1	25	40	150
2	30	40	150
3	25	50	150
4	30	50	150
5	25	60	150

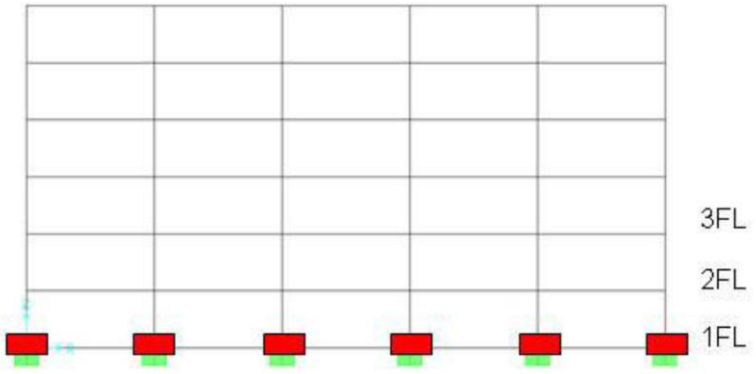

Figure 1. Base Isolation

Material properties:

Rubber hardness IRHD	Young's modulus E (N/cm^2)	Shear modulus G (N/cm^2)	Correction factor k
40	150	45	0.85
50	220	64	0.73
60	445	106	0.57

Group Members

Group 1	劉文學	謝旻竹
	黃子柔	江亭瑩
Group 2	黃昱竣	陳 雋
	鍾侑津	林芃妤
Group 3	林佑蔓	黃仲均
	郭珈均	鄧凱文
Group 4	蔡東樺	乃宥然
	劉德謙	高翊書
Group 5	林廣杰	謝孟益
	林偉聖	

*Group 5 could choose to skip one of the assigned time history analysis in both project I&II.