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Section # "C"

Semester # 8th

Q no 1 :

(1)

Ans:

First Figure :-

Configuration depict :

First figure is irregular shape
causing less structure response to
Earthquake.

Solutions

We can reduce upto some extent
the seismic risk in the building
like rearrange the nonstructural parts
and centre of rigidity become near.

- * Space Configuration
- * Fixing the non structural parts.

Second figure:

Type of Configuration depict:

Second figure soft story phenomena.

By providing bracing in some frames

that can produce extra stiffness

in a floor where soft story effects
occur.

Third figure:

Type of Configuration depict:

Third figure shows no spacing between

L shape building - causing hammer
effects.

If we increase the resistance of
the structural design to compensate
for the increased risk.

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* By increasing the Strength / Stiffness of the column \Rightarrow increased the situation can be controlled.

u ————— u

Qno 2:

Problem

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Solution:-

$$m = \frac{W}{g} = \frac{7716 \times 20}{32.2}$$

$$m = 4792.84 \text{ lb sec}^2/\text{ft}$$

Using D'Alembert's principle of dynamic equilibrium

$$P(t) - f_1 - f_{s1} - f_{s2} = 0$$

$$P(t) - m\ddot{u} - (f_{s1} + f_{s2}) = 0$$

$$(k_1 u + k_2 u) + m\ddot{u} = P(t)$$

$$(k u) + m\ddot{u} = P(t)$$

$$(k u) + m\ddot{u} = P(t)$$

$$\text{As } k = 3759 \text{ k/ft}$$