civil problem

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$$NumberOfStoreys = 4 \tag{1}$$

$$StiffnessMatrix = \begin{bmatrix} 1800 & -800 & 0 & 0 \\ -800 & 1400 & -600 & 0 \\ 0 & -600 & 1200 & -600 \\ 0 & 0 & -600 & 600 \end{bmatrix} \tag{2}$$

$$Mass = \begin{bmatrix} 8 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 \\ 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 4 \end{bmatrix} \tag{3}$$

$$OmegaSquare = \begin{bmatrix} 20.2828 & 112.804 & 283.853 & 433.060 \end{bmatrix} \tag{4}$$

$$TimePeriod = \begin{bmatrix} 1.395 & 0.0000 & 0.0000 & 0.0000 \\ 0.0000 & 0.5916 & 0.0000 & 0.0000 \\ 0.0000 & 0.0000 & 0.3729 & 0.0000 \\ 0.0000 & 0.0000 & 0.0000 & 0.3019 \end{bmatrix} \tag{5}$$

$$Frequency = [4.504, 10.62, 16.85, 20.81] \tag{6}$$

$$LevelFloor = \begin{bmatrix} 4.000 & 8.000 & 12.00 & 16.00 \end{bmatrix} \tag{7}$$

$$ModalParticipationFactor = \begin{bmatrix} 4.508 & 1.638 & 0.9830 & 0.1569 \end{bmatrix} \tag{8}$$

$$ModalMass = \begin{bmatrix} 20.32 & 2.684 & 0.9664 & 0.02463 \end{bmatrix} \tag{9}$$

$$ModalContribution = \begin{bmatrix} 84.69 & 11.18 & 4.027 & 0.1026 \end{bmatrix} \tag{10}$$

$$SaByG = \begin{bmatrix} 0.0000 & 0.7168 & 0.0000 & 0.0000 \\ 0.0000 & 1.690 & 0.0000 & 0.0000 \\ 0.0000 & 2.500 & 0.0000 & 0.0000 \\ 0.0000 & 2.500 & 0.0000 & 0.0000 \end{bmatrix} \tag{11}$$

$$AH = \begin{bmatrix} 0.0000 & 0.01720 & 0.0000 & 0.0000 \\ 0.0000 & 0.04057 & 0.0000 & 0.0000 \\ 0.0000 & 0.06000 & 0.0000 & 0.0000 \\ 0.0000 & 0.06000 & 0.0000 & 0.0000 \end{bmatrix} \tag{12}$$

$$DesignLateralforce = \begin{bmatrix} 0.5565 & 0.9640 & 1.292 & 0.05022 \\ 1.139 & 1.082 & -0.7602 & -0.1045 \\ 0.8042 & -0.1942 & -0.3095 & 0.1463 \\ 0.9299 & -0.7831 & 0.3468 & -0.07752 \end{bmatrix} \tag{13}$$

$$PeakShearForce = \begin{bmatrix} 3.430 & 1.068 & 0.5688 & 0.01450 \\ 2.873 & 0.1042 & -0.7229 & -0.03573 \\ 1.734 & -0.9773 & 0.03733 & 0.06877 \\ 0.9299 & -0.7831 & 0.3468 & -0.07752 \end{bmatrix} \tag{14}$$

$$StoreyShearForce = \begin{bmatrix} 0.0000 & 5.082 & 3.637 & 0.0000 \\ 0.0000 & 3.736 & 2.965 & 0.0000 \\ 0.0000 & 2.818 & 1.992 & 0.0000 \\ 0.0000 & 2.137 & 1.267 & 0.0000 \end{bmatrix} \tag{15}$$