

Item 3

The “Final Evaluation” stage consists of condition evaluation and assessment of selected buildings using in depth and advanced techniques. For this stage, 3D Finite Element Modeling (FEM) and related analyses are introduced in addition to the other techniques used in the previous stages. Naturally, parameters such as the reinforcement details, material properties are also needed for this level. Sensitivity analysis must be conducted to see the impact of some parameters on the final results. Insensitive and highly sensitive parameters must be identified, and measurements should be carried out accordingly.

Independent of the items listed above, soil must be selected as one of the important parameters. In addition to isolated problems such as “liquefaction”, the soil parameters have a magnifying effect on the EQ waves. During the analysis, the EQ spectrum is obtained including the soil effects, but how adequate is it? Which soil related parameters should be selected as variables, and for which of the three stages listed above?

The techniques and methodologies must be quickly applicable to the enormous number of residential buildings that we have in largely populated urban areas such as Istanbul, Adana, and similar cities. It should be noted that this project, and the application of the techniques is a race against time due to the threat of a possible large earthquake developing in those metropolitan areas.