- The area of the shear forces diagram and heights represents the total moment of the floors and is larger in the triangular distribution than in the rectangular one.
- The maximum displacement, developed at the 10th level in column c13, is 70/10=7.0 times greater than the one of the ground floor, i.e. $\delta_{xx,10,13}=7.0\times5.60=39.2$ *mm* and $\delta_{xy,10,13}=7.0\times0.97=6.8$ *mm*.

The behaviour of the actual structure under orthogonal and triangular seismic force distribution is subsequently considered. In the related software, in <project B_547-1>, the seismic forces are input in the dialog “Seismic Forces” located at “Parameters”, “Horizontal Forces”. For orthogonal distribution input $H_x=200$ at all levels, while for triangular distribution input values from *364.0* to *36.4*. Always check “Apply seismic forces”=ON in order to use in the analysis the given seismic forces, instead of the default derived from the modal response spectrum analysis,. To perform the analysis press “Solve Building” and finally to review the results press “Analysis Results”.

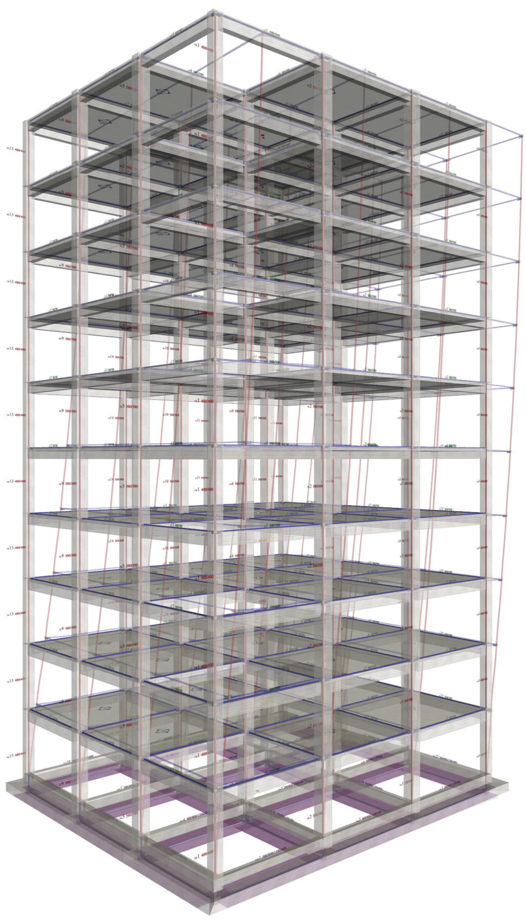

Figure 5.4.7.2-3: The actual structure of the building with the wireframe model

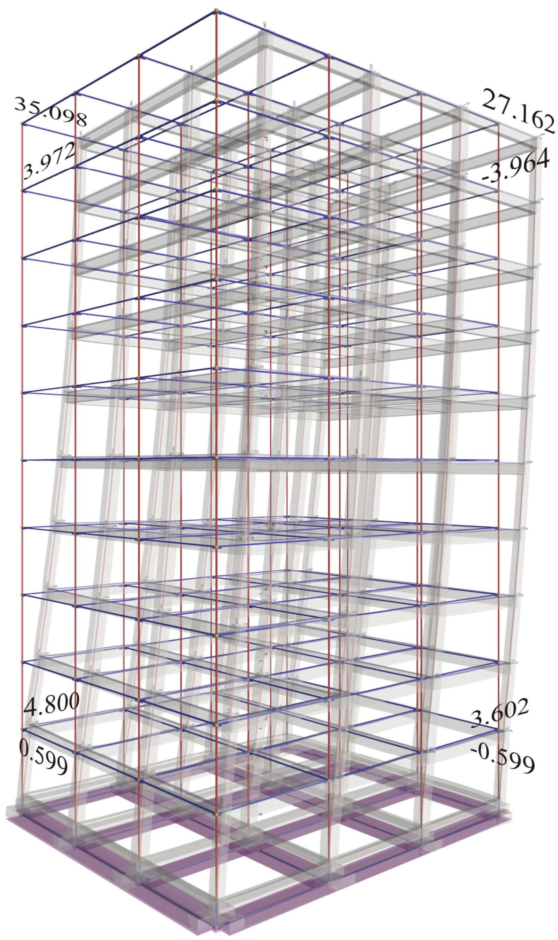

Figure 5.4.7.2-4: Seismic action with base shear 2000 kN and orthogonal distribution of seismic actions

Due to the bisymmetric geometry, in each diaphragm, the center of stiffness C_T is located almost at the centre of the floor and therefore its displacement is almost equal to the average of the displacements of columns c4, c13.
To compare all cases, the displacements are divided by a=0.4635 mm.
The displacements of the center of stiffness C_T and of columns c4 and c13 are listed in the following table: