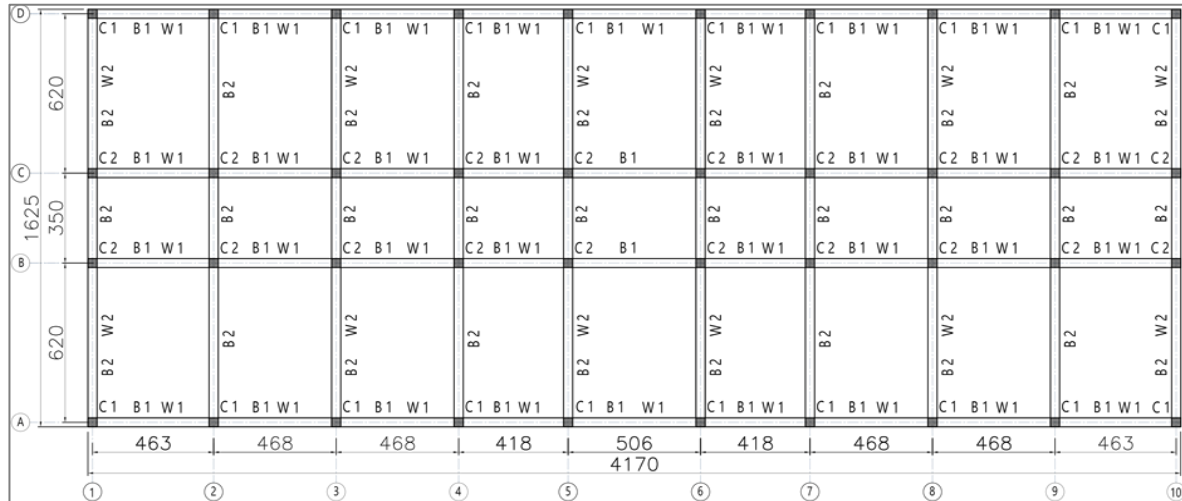


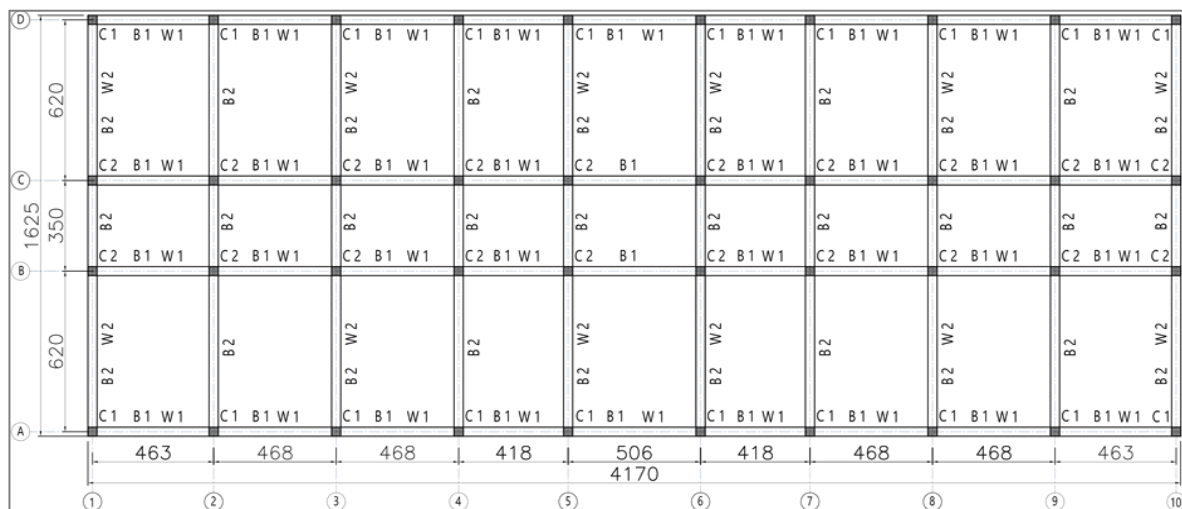
24Classroom School Building

The building is a typical school building constructed almost in the entire provinces during the past three decades. As shown in Figure 1, the building has a plan with a dimension of 41.7m × 16.25-m consisting of nine and three spans in longitudinal and transvers direction, respectively. The building has a three-story RC frame, where each story is 3.3-meter height and the thickness of the RC floor-slab at each story is 15 cm. The detail of load-bearing elements (RC beams and columns) is summarized in Table1 and Table 2. As for the floor weight in the seismic analysis, a total of 94000 KN load was calculated for the first and second floors and 87960 KN for the third floor.

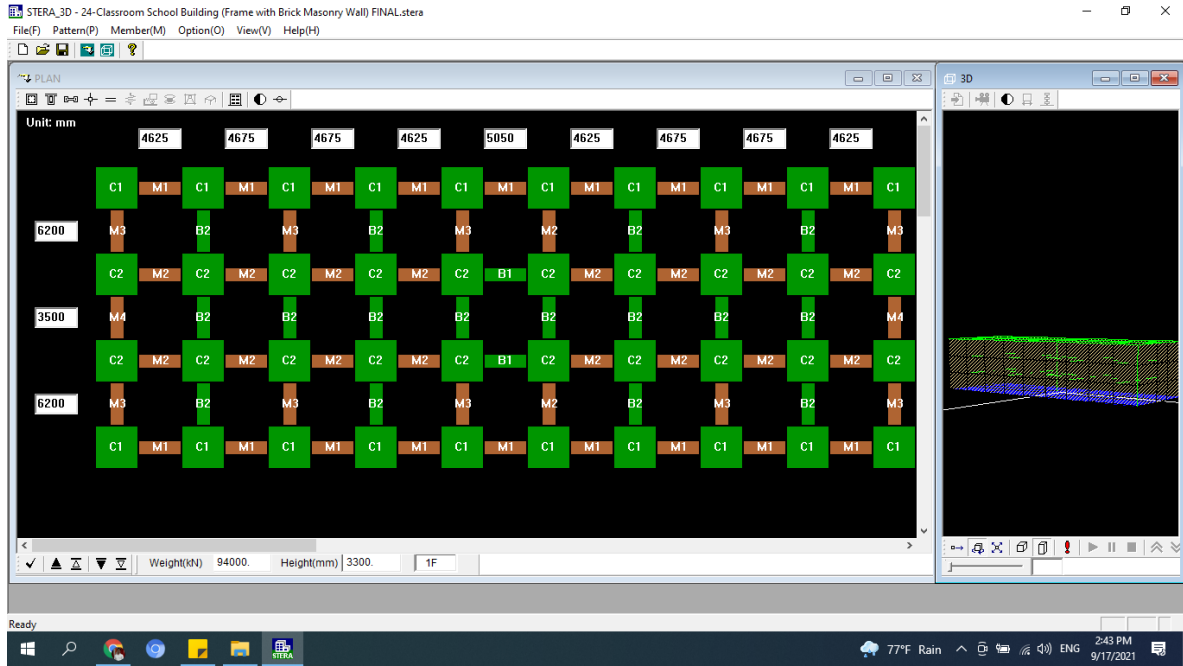
The compressive strength of concrete material is 28MPa, where the tensile strength of flexural and shear reinforcing bars is 420MPa. According to the architectural drawings, the interior and exterior walls are brick masonry walls. The brick masonry wall has a typical thickness of 35 cm which are constructed from unreinforced solid brick of regular size (22x11x7 cm) with 9 MPa compressive strength. The STERA 3D model of the building is in Figure 1 c.



(a) First and Second Floors Plan



(b) Third Floor Plan



(c) Third Floor Plan

Figure 1. 24 Classroom School building details

Table 1- Columns dimensions and reinforcement details

No	Columns	Story Level	Depth (cm)	Width (cm)	Main Rein. Bars	Shear Rein. Bars
1	C1	First, Second and third Floor	50	45	12 Ø D-20	Ø 10 @ 10cm
2	C2	First, Second and third Floor	50	45	14 Ø D-20	Ø 10 @ 10cm

Table 2- Beams dimensions and reinforcement details

No	Beams	Story Level	Depth (cm)	Width (cm)	Reinforcement details (Rebars)
1	B1	First and Second Floor	50	35	5 Ø-18 on Top and 4 Ø-18 on Bot
2	B2	First and Second Floor	55	35	5 Ø-20 on Top and 5 Ø-18 on Bot
3	B3	Third Floor	50	35	5 Ø-16 on Top and 4 Ø-16 on Bot
4	B4	Third Floor	55	35	5 Ø-18 on Top and 5 Ø-16 on Bot

Table 3- Brick Masonry Wall (BMW) dimensions and details

No	Walls	Story Level	Beams	Wall. Thickness (mm)	Comp. S. of Brick (N/mm ²)
1	W 1	First and Second Floor	B 1	350	9
2	W 2	First and Second Floor	B 2	350	9
3	W 3	First and Second Floor	B 2	350	9
4	W 4	Third Floor	B 3	350	9
5	W 5	Third Floor	B 4	350	9