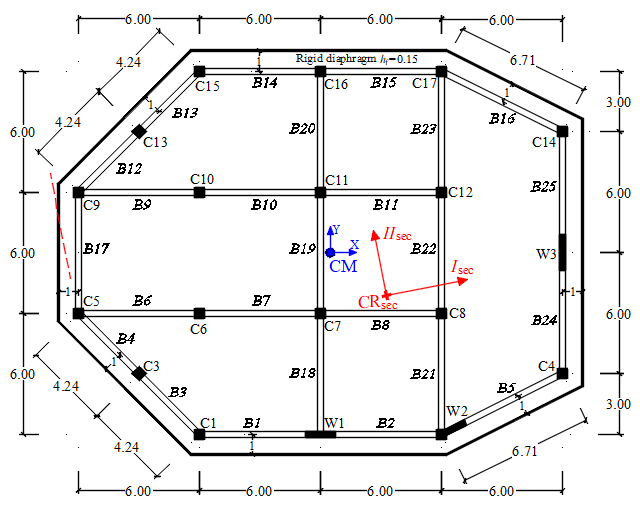
**Supplementary Materials**

Figure A1 shows the numbering of the structural members in the nonlinear model of the six-storey r/c building. The dimensions of the cross-sections and the reinforcement details are presented in Tables A1-A3.



**Figure S1.** Numbering of the structural members in the nonlinear model of the six-storey r/c building

**Table S1.** Geometry of cross sections

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Structural element | Storey | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| All square columns | 50/50 | | | | | |
| All **T-**beams | **T** 30/60/150/15 | | | | | |
| Wall W1 | 150/30 | | | | | |
| Wall W2 | 150/30/50/50 | | | | | |
| Wall W3 | 30/180 | | | | | |

**Table S2.** Reinforcement details of **T** beams’ end-sections (closed perimeter stirrup Ø8mm placed every 80mm*)*

*\*Top flange reinforcement bars: 12Ø8mm (Ø8/120mm) are considered in the calculation of the bending strength of Τ beams.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Beam | Storey | | | | | | | | | | | |
| 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| start | end | start | end | start | end | start | end | start | end | start | end |
| *Longitudinal bars Ø16mm or Ø14mm (\*) at beam end-sections, placed οn top-bottom fibers* | | | | | | | | | | | |
| B 1 | 6-5 | 8-6 | 7-5 | 9-7 | 7-5 | 9-7 | 5-4 | 7-5 | 5-4 \* | 5-4 | 4-4 \* | 4-4 \* |
| 2 | 8-6 | 9-7 | 9-7 | 10-8 | 9-7 | 9-7 | 7-5 | 8-6 | 5-4 | 6-5 | 4-4 \* | 4-4 |
| 3 | 4-4 | 4-4 | 5-5 | 5-5 | 5-5 | 5-5 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 4 | 4-4 | 4-4 | 5-5 | 5-5 | 5-5 | 5-5 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 5 | 6-5 | 6-5 | 8-6 | 7-6 | 8-6 | 7-6 | 6-5 | 5-5 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 6 | 5-4 | 5-4 | 5-4 | 6-5 | 5-4 | 6-5 | 4-4 | 4-4 | 4-4 \* | 4-4 | 4-4 \* | 4-4 \* |
| 7 | 5-4 | 5-4 | 6-5 | 6-5 | 6-5 | 6-5 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* |
| 8 | 5-4 | 5-4 | 6-5 | 6-5 | 6-5 | 6-5 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 9 | 5-4 | 6-4 | 6-4 | 6-4 | 5-4 | 6-4 | 4-4 | 5-4 | 4-4 \* | 4-4 | 4-4 \* | 4-4 \* |
| 10 | 6-4 | 6-4 | 6-4 | 6-4 | 6-4 | 5-4 | 5-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* |
| 11 | 6-4 | 6-5 | 6-4 | 7-5 | 5-4 | 6-5 | 4-4 | 5-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 12 | 5-5 | 5-4 | 5-5 | 6-4 | 4-4 | 5-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 13 | 5-4 | 6-5 | 6-4 | 6-5 | 5-4 | 5-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 14 | 7-5 | 6-5 | 7-5 | 7-5 | 7-5 | 6-5 | 5-4 | 5-4 | 4-4 | 4-4 \* | 4-4 \* | 4-4 \* |
| 15 | 6-5 | 6-5 | 7-5 | 7-5 | 6-5 | 6-5 | 5-4 | 5-4 | 4-4 \* | 4-4 \* | 4-4 \* | 4-4 \* |
| 16 | 7-5 | 8-6 | 8-6 | 8-6 | 7-5 | 7-5 | 6-5 | 6-5 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 17 | 4-4 | 4-4 | 5-4 | 5-4 | 5-4 | 5-4 | 5-4 | 5-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 18 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 19 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 20 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 21 | 4-4 | 4-4 | 5-4 | 5-4 | 5-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 22 | 4-4 | 4-4 | 5-4 | 5-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 23 | 4-4 | 4-4 | 5-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 \* | 4-4 \* |
| 24 | 7-6 | 8-6 | 8-6 | 9-7 | 8-6 | 9-7 | 7-6 | 8-6 | 5-4 | 5-4 | 4-4 \* | 4-4 |
| 25 | 8-6 | 7-5 | 9-7 | 8-6 | 9-7 | 8-6 | 8-6 | 7-6 | 5-4 | 5-4 | 4-4 | 4-4 \* |

**Table S3.** Reinforcement details of columns and walls

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column (C) or Wall (W) | Storey | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| *Number of longitudinal bars and diameter (mm).*  *Number of (closed) stirrup legs along x and y dir. - diameter (mm) / distance (mm) between legs* | | | | | |
| All columns | 12Ø20  confinement x & y: 4 legs - Ø8/80 | | | | | 4Ø20+8Ø14  x & y: 4 legs - Ø8/80 |
| W1 | 2 b. el. 0.4x0.3m: (3Ø25+7Ø20) x 2  web: 10Ø10  confinement x, y: 4, 6 legs - Ø8/80 | | 2 boundary el. 0.4x0.3m: (10Ø14) x 2  web: 10Ø10  confinement x, y: 4, 6 legs - Ø8/80 | | | |
| W2 | 2 boundary el. 0.5x0.5m + 0.4x0.3m: (16Ø20) + (3Ø25+7Ø20)  web: 10Ø10  confinement x, y: (6, 6 legs - Ø8/80) + (6, 6 legs - Ø8/80) | | | | | 2 b. el. 0.5x0.5m + 0.4x0.3m: (12Ø20) + (10Ø14)  web: 10Ø10  confinement x, y: (4, 4 legs - Ø8/80) + (4, 6 legs - Ø8/80) |
| W3 | 2 b. el. 0.3x0.45m: (12Ø20) x 2  web: 14Ø12  confinement x, y: 6, 4 legs - Ø8/80 | | 2 b. el. 0.3x0.40m: (10Ø20) x 2  web: 12Ø12  confinement x, y: 6, 4 legs - Ø8/80 | | 2 bound. el. 0.3x0.40m: (10Ø14) x 2  web: 12Ø12  confinement x, y: 6, 4 legs - Ø8/80 | |