

ESTIMATE OF FOREST CHOWKI

(Total Area = 2016 sq. ft. + Court Yard 487 sq. feet)

1. C/C length of walls in Chowki = $41.25 \times 4 + 47.25 \times 2 + 15.5 \times 1$ running feet
= 275 running feet
= 83.82 running meter
2. C/C length of court yard walls = $13.5 \times 2 + 31.5 \times 1$ running feet
= 58.5 running feet
= 17.83 running meter
3. No. of columns in chowki = 20
4. No. of columns in courtyard = 4
5. Size of each column = 9 inches x 9 inches
6. Plinth = 0.5 meter above ground level
7. Beam at plinth level = 9 inches x 9 inches
8. Beam at door level = 9 inches x 6 inches
9. Beam at roof level = 9 inches x 9 inches
10. Thickness of slab = 4 inches

Estimate of different works

1. Excavation:

- (i) For columns = $(20 + 4) \times 1.0 \times 1.0 \times 1.2$ meter
= 28.800 cubic meter
- (ii) For walls = $[(83.82 + 17.83) - 61 \times 0.5] \times 0.3 \times 0.5$
= 10.672 cubic meter
- (iii) Total excavation = 39.472 cubic meter

2. Filling foundation with 1:3:6 (M-10) cement concrete:

- (i) For columns = $(20 + 4) \times 1.0 \times 1.0 \times 0.1$
= 2.4 cubic meter
- (ii) For walls = $(83.82 + 17.83) \times 0.3 \times 0.1$
= 3.049 cubic meter
- (iii) For flooring in rooms = $14.63 \times 12.80 \times 0.1$
= 18.726 cubic meter

- (iv) Total CC = 24.175 cubic meter

3. R.C.C. work in 1:1.5:3 (M-20) in columns, beams, chajjas & slab:

- (i) Columns footing = $24 \times (1 \times 1 + 0.22 \times 0.22) / 2 \times 0.3$
= 3.774 cubic meter
- (ii) Columns up to plinth level = $24 \times 1.2 \times 0.22 \times 0.22$
= 1.394 cubic meter
- (iii) Column up to roof level = $20 \times 0.22 \times 0.22 \times 3.1$
= 3.00 cubic meter
- (iv) Column in court yard = $4 \times 0.22 \times 0.22 \times 1.8$
= 0.348 cubic meter
- (v) Beam at plinth level = $(83.82 + 17.83) \times 0.22 \times 0.22$
= 4.914 cubic meter
- (vi) Beam at door level = $83.82 \times 0.22 \times 0.15$
= 2.766 cubic meter
- (vii) Beam at roof level = $83.82 \times 0.22 \times 0.22$
= 4.056 cubic meter
- (viii) Chajjas = $10 \times 0.6 \times 1.5 \times 0.1$
= 0.90 cubic meter
- (ix) Slab = $(14.63 \times 12.80) \times 0.1$
= 18.726 cubic meter
- (x) Total RCC = 39.878 cubic meter

4. **Steel required in RCC** = 1.50 % of volume of RCC
= 4695 kg
5. **Masonry in foundation/plinth** = $(83.82 + 17.83) \times 0.22 \times 0.9$
= 20.127 cubic meter
6. **Masonry in superstructure:**
- (i) In main building = $83.82 \times 0.22 \times 2.85$
= 52.555 cubic meter
- (ii) In courtyard = $17.83 \times 0.22 \times 1.8$
= 7.061 cubic meter
- (iii) Deduction for doors/windows = $(4 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 9 \times 1.5 \times 1.35 + 1 \times 1.2 \times 1.35 + 3 \times 0.6 \times 0.45) \times 0.22$
= 9.619 cubic meter
- (iv) Total Masonary = 49.997 cubic meter
7. **Plaster in 1:6 cement mortar**
- (i) In main building = $2 \times 83.82 \times 3.0$
= 502.92 square meter
- (ii) In courtyard = $2 \times 17.83 \times 1.8$
= 64.188 square meter
- (iii) In roof = 12.80×14.63
= 187.264 square meter
- (iv) Deduction for doors/windows = $2 \times (4 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 9 \times 1.5 \times 1.35 + 1 \times 1.2 \times 1.35 + 3 \times 0.6 \times 0.45)$
= 87.445 square meter
- (vi) Total plaster = 479.663 square meter

8. Centering and shuttering:

- (i) For Columns in main building = $20 \times 4 \times 0.22 \times 4.6$
= 80.96 square meter
- (ii) For columns in courtyard = $4 \times 4 \times 0.22 \times 3.3$
= 11.616 square meter
- (iii) For beam at plinth level = $(83.82 + 17.83) \times 0.3$
= 30.495 square meter
- (iv) For beam at door level = 83.82×0.525
= 44.005 square meter
- (iv) For beam at roof level = 83.82×0.66
= 55.321 square meter
- (v) For chajjas = $10 \times 0.6 \times 1.5$
= 9.00 square meter
- (vi) For slab = 14.63×12.80
= 187.264 square meter
- (vii) Total shuttering = 418.661 square meter

9. Filling foundation with moorum = $14.63 \times 12.80 \times 0.5$
= 93.632 cubic meter

10. Wood required for frames = $0.0635 \times 0.127 \times (4 \times 5.334 + 8 \times 5.105 + 9 \times 8.534 + 1 \times 5.4 + 6 \times 2.1)$
= 1.266 cubic meter

11. Frame work for doors/window = $(4 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 9 \times 1.5 \times 1.35 + 1 \times 1.2 \times 1.35 + 3 \times 0.6 \times 0.45)$
= 43.722 square meter

12 Flooring = 14.63×12.80
= 187.264 square meter