

ESTIMATE OF RANGE OFFICE

(Total Area = 1475 sq. ft. + Porch 120 sq feet)

1. C/C length of walls in office = $40.75 \times 3 + 35 \times 3 + 12.75 \times 1 + 11.5 \times 3 + 6.75 \times 1$ running feet
= 281.25 running feet
= 85.73 running meter
2. No. of columns in office = 26
3. No. of columns in porch = 2
4. Size of each column = 9 inches x 9 inches
5. Plinth = 0.5 meter above ground level
6. Beam at plinth level = 9 inches x 9 inches
7. Beam at door level = 9 inches x 6 inches
8. Beam at roof level = 9 inches x 9 inches
9. Thickness of slab = 4 inches

Estimate of different works

1. Excavation:

- (i) For columns = $(26 + 2) \times 1.0 \times 1.0 \times 1.2$ meter
= 33.600 cubic meter
- (ii) For walls = $(85.73 - 64 \times 0.5) \times 0.3 \times 0.5$
= 8.060 cubic meter
- (iii) Total excavation = 41.660 cubic meter

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

- (i) For columns = $(26 + 2) \times 1.0 \times 1.0 \times 0.1$
= 2.800 cubic meter
- (ii) For walls = $85.73 \times 0.3 \times 0.1$
= 2.572 cubic meter
- (iii) For flooring in rooms = $12.59 \times 10.90 \times 0.1$
= 13.723 cubic meter
- (iv) Total CC = 19.095 cubic meter

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

- (i) Columns footing = $28 \times (1 \times 1 + 0.22 \times 0.22) / 2 \times 0.3$
= 4.403 cubic meter
- (ii) Columns up to plinth level = $28 \times 1.2 \times 0.22 \times 0.22$
= 1.626 cubic meter
- (iii) Column up to roof level = $28 \times 0.22 \times 0.22 \times 3.1$
= 4.201 cubic meter
- (iv) Beam at plinth level = $(85.73 + 9.753) \times 0.22 \times 0.22$
= 4.621 cubic meter
- (v) Beam at door level = $(85.73 + 9.753) \times 0.22 \times 0.15$
= 3.151 cubic meter
- (vi) Beam at roof level = $85.73 \times 0.22 \times 0.22$
= 4.149 cubic meter
- (vii) Chajjas = $4 \times 0.6 \times 1.5 \times 0.1$
= 0.36 cubic meter
- (viii) Slab = $(12.59 \times 10.90 + 3.60 \times 3.0) \times 0.1$
= 14.803 cubic meter
- (ix) Total RCC = 37.314 cubic meter

4. **Steel required in RCC** = 1.25 % of volume of RCC
= 3660 kg

5. **Masonry in foundation/plinth** = $(85.73 - 24 \times 0.22) \times 0.22 \times 0.9$
= 15.929 cubic meter

6. **Masonry in superstructure:**

- (i) In main building = $85.73 \times 0.22 \times 2.85$
= 53.752 cubic meter
- (ii) Deduction for doors/windows = $(5 \times 1.07 \times 2.1 + 6 \times 0.838 \times 2.1 + 4 \times 1.5 \times 1.35 + 2 \times 1.2 \times 1.35 + 9 \times 0.6 \times 0.45) \times 0.22$
= 7.824 cubic meter
- (iii) Total Masonary = 45.928 cubic meter

7. Plaster in 1:6 cement mortar

- (i) In main building = $2 \times 85.73 \times 3.2$
= 548.672 square meter
- (ii) In roof = $12.59 \times 10.90 + 3.60 \times 3.00$
= 148.031 square meter
- (iii) Deduction for doors/windows = $2 \times (5 \times 1.07 \times 2.1 + 6 \times 0.838 \times 2.1 + 4 \times 1.5 \times 1.35 + 2 \times 1.2 \times 1.35 + 9 \times 0.6 \times 0.45)$
= 71.128 square meter
- (iv) Total plaster = 625.575 square meter

8. Centering and shuttering:

- (i) For Columns in main building = $28 \times 4 \times 0.22 \times 4.6$
= 113.344 square meter
- (ii) For beam at plinth level = $(85.73 + 9.753) \times 0.3$
= 28.645 square meter
- (iii) For beam at door level = 85.73×0.525
= 45.009 square meter
- (iv) For beam at roof level = $(85.73 + 9.753) \times 0.66$
= 63.019 square meter
- (v) For chajjas = $4 \times 0.6 \times 1.5$
= 3.600 square meter
- (vi) For slab = $12.59 \times 10.90 + 3.60 \times 3.00$
= 148.031 square meter
- (vii) Total shuttering = 401.648 square meter

9. Filling foundation with moorum

$$= 12.59 \times 10.90 \times 0.5$$
$$= 68.616 \text{ cubic meter}$$

10. Wood required for frames

$$= 0.0635 \times 0.127 \times (5 \times 5.334 + 4 \times 5.105 + 4 \times 8.534 + 2 \times 5.4 + 9 \times 2.1)$$

$$= 0.895 \text{ cubic meter}$$

11. Frame work for doors/window

$$= (5 \times 1.07 \times 2.1 + 6 \times 0.838 \times 2.1 + 4 \times 1.5 \times 1.35 + 2 \times 1.2 \times 1.35 + 9 \times 0.6 \times 0.45)$$

$$= 35.564 \text{ square meter}$$

12 Flooring

$$= 12.59 \times 10.90 + 3.60 \times 3.00$$

$$= 148.031 \text{ square meter}$$