

ESTIMATE OF SDO cum RANGE OFFICE

(Total Area = 1931 sq. ft.)

1. C/C length of walls in office = $53.25 \times 3 + 35 \times 4 + 12.75 \times 2 + 11.5 \times 3 + 6.75 \times 2$ running feet
= 373.25 running feet
= 113.77 running meter
2. No. of columns in office = 32
3. Size of each column = 9 inches x 9 inches
4. Plinth = 0.5 meter above ground level
5. Beam at plinth level = 9 inches x 9 inches
6. Beam at door level = 9 inches x 6 inches
7. Beam at slab level = 9 inches x 9 inches
8. Thickness of slab = 4 inches

Estimate of different works

1. Excavation:

- (i) For columns = $32 \times 1.0 \times 1.0 \times 1.2$ meter
= 38.400 cubic meter
- (ii) For walls = $(113.77 - 82 \times 0.5) \times 0.3 \times 0.5$
= 10.916 cubic meter
- (iii) Total excavation = 49.316 cubic meter

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

- (i) For columns = $32 \times 1.0 \times 1.0 \times 0.1$
= 3.200 cubic meter
- (ii) For walls = $113.77 \times 0.3 \times 0.1$
= 3.413 cubic meter
- (iii) For flooring in rooms = $16.46 \times 10.90 \times 0.1$
= 17.941 cubic meter
- (iv) Total CC = 24.554 cubic meter

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

(i)	Columns footing	= $32 \times (1 \times 1 + 0.22 \times 0.22) / 2 \times 0.3$ = 5.032 cubic meter
(ii)	Columns up to plinth level	= $32 \times 1.2 \times 0.22 \times 0.22$ = 1.858 cubic meter
(iii)	Column up to roof level	= $32 \times 0.22 \times 0.22 \times 3.1$ = 4.801 cubic meter
(iv)	Beam at plinth level	= $113.77 \times 0.22 \times 0.22$ = 5.506 cubic meter
(v)	Beam at door level	= $113.77 \times 0.22 \times 0.15$ = 3.754 cubic meter
(vi)	Beam at slab level	= $113.77 \times 0.22 \times 0.22$ = 5.506
(vii)	Chajjas	= $6 \times 0.6 \times 1.5 \times 0.1$ = 0.540 cubic meter
(viii)	Slab	= $16.46 \times 10.90 \times 0.1$ = 17.941 cubic meter
(ix)	Total RCC	= 44.938 cubic meter

4. **Steel required in RCC** = 1.25 % of volume of RCC
= 4410 kg

5. **Masonry in foundation/plinth** = $(113.77 - 32 \times 0.22) \times 0.22 \times 0.9$
= 21.132 cubic meter

6. **Masonry in superstructure:**

(i)	In main building	= $113.77 \times 0.22 \times 2.85$ = 71.333 cubic meter
(ii)	Deduction for doors/windows	= $(8 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 5 \times 1.5 \times 1.35 + 9 \times 1.2 \times 1.35 + 8 \times 0.6 \times 0.45) \times 0.22$ = 12.962 cubic meter
(iii)	Total Masonary	= 58.405 cubic meter

7. Plaster in 1:6 cement mortar

- (i) In main building = $2 \times 113.77 \times 3.2$
= 728.128 square meter
- (ii) In roof = 16.46×10.90
= 179.414 square meter
- (iii) Deduction for doors/windows = $2 \times (8 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 5 \times 1.5 \times 1.35 + 9 \times 1.2 \times 1.35 + 8 \times 0.6 \times 0.45)$
= 117.838 square meter
- (iv) Total plaster = 789.704 square meter

8. Centering and shuttering:

- (i) For Columns in main building = $32 \times 4 \times 0.22 \times 4.6$
= 129.536 square meter
- (ii) For beam at plinth level = 113.77×0.3
= 34.131 square meter
- (iii) For beam at door level = 113.77×0.525
= 59.729 square meter
- (iv) For beam at roof level = 113.77×0.66
= 75.088 square meter
- (v) For chajjas = $6 \times 0.6 \times 1.5$
= 5.400 square meter
- (vi) For slab = 16.46×10.90
= 179.414 square meter
- (vii) Total shuttering = 483.298 square meter

9. Filling foundation with moorum = $16.46 \times 10.90 \times 0.5$
= 89.707 cubic meter

10. Wood required for frames

$$= 0.0635 \times 0.127 \times (8 \times 5.334 + 8 \times 5.105 + 5 \times 8.534 + 9 \times 5.4 + 8 \times 2.1)$$

$$= 1.54 \text{ cubic meter}$$

11. Frame work for doors/window

$$= (8 \times 1.07 \times 2.1 + 8 \times 0.838 \times 2.1 + 5 \times 1.5 \times 1.35 + 9 \times 1.2 \times 1.35 + 8 \times 0.6 \times 0.45)$$

$$= 58.919 \text{ square meter}$$

12 Flooring

$$= 16.46 \times 10.90$$

$$= 179.414 \text{ square meter}$$