

ESTIMATE OF DIVISION OFFICE

(Total Area = 3066 sq. ft. + Gallery 1040 sq.ft + Porch 300 sq.ft)

1. C/C length of walls = $22.5 \times 2 + 15.75 \times 2 + 54.25 \times 1 + 23.5 \times 4 + 21.5 \times 6 + 33.25 \times 1 + 19.75 \times 1 + 17.75 \times 1 + 11.5 \times 1 + 7.0 \times 1 + 16.5 \times 4 + 8.5 \times 1$ running feet
= 517.5 running feet
= 157.734 running meter
2. No. of columns in main building = 52
3. No. of columns in gallery = 8
4. Size of each column = 12 inches x 9 inches
5. Plinth = 0.5 meter above ground level
6. Beam at plinth level = 9 inches x 12 inches
7. Beam at door level = 9 inches x 6 inches
8. Beam at slab level = 9 inches x 15 inches
9. Thickness of slab = 5 inches

Estimate of different works

1. Excavation:

- (i) For columns = $60 \times 1.0 \times 1.0 \times 1.2$ meter
= 72.000 cubic meter
- (ii) For walls = $(157.734 - 104 \times 0.5) \times 0.3 \times 0.5 + (19.50 - 8 \times 0.5) \times 0.3 \times 0.5$
= 18.075 cubic meter
- (iii) Total excavation = 90.075 cubic meter

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

- (i) For columns = $60 \times 1.0 \times 1.0 \times 0.1$
= 6.000 cubic meter
- (ii) For walls = $157.734 \times 0.3 \times 0.1 + 19.5 \times 0.3 \times 0.1$
= 5.317 cubic meter
- (iii) For flooring in rooms = 381.95×0.1
= 38.195 cubic meter
- (iv) For flooring in porch = 27.90×0.1
= 2.790 cubic meter
- (v) Total CC = 52.302 cubic meter

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

- (i) Columns footing = $60 \times (1 \times 1 + 0.30 \times 0.22) / 2 \times 0.3$
= 9.594 cubic meter
- (ii) Columns up to plinth level = $60 \times 1.2 \times 0.30 \times 0.22$
= 4.752 cubic meter
- (iii) Column up to roof level = $60 \times 3.1 \times 0.30 \times 0.22$
= 12.275 cubic meter
- (iv) Beam at plinth level = $(157.734 + 19.5) \times 0.22 \times 0.22$
= 8.578 cubic meter
- (v) Beam at door level = $(157.734 + 19.5) \times 0.22 \times 0.15$
= 5.848 cubic meter
- (vi) Beam at slab level = $(157.734 + 19.5) \times 0.22 \times 0.37$
= 14.426 cubic meter
- (vii) Chajjas = $13 \times 0.6 \times 1.5 \times 0.1$
= 1.170 cubic meter
- (viii) Slab = 409.85×0.125
= 51.231 cubic meter
- (ix) In stair case = $10 \times 1.20 \times 0.1$
= 1.200 cubic meter
- Total RCC = 103.226 cubic meter

4. **Steel required in RCC** = 1.75 % of volume of RCC
= 14180 kg
5. **Masonry in foundation/plinth** = $(157.734 + 19.5 - 52 \times 0.22) \times 0.22 \times 0.9$
= 32.827 cubic meter
6. **Masonry in superstructure:**
- (i) In main building = $157.734 \times 0.22 \times 2.80$
= 97.164 cubic meter
- (ii) Deduction for doors/windows = $(8 \times 1.07 \times 2.1 + 4 \times 0.883 \times 2.1 + 20 \times 1.5 \times 1.35 + 6 \times 0.6 \times 0.45) \times 0.22$
= 16.076 cubic meter
- (iii) Masonry in staircase tower = $2 \times (6.3 + 2.25) \times 2.1 \times 0.22$
= 7.900 cubic meter
- (iv) Masonry in parapet wall = $68.58 \times 0.75 \times 0.22$
= 11.315
- (v) Total Masonary = 100.303 cubic meter
7. **Plaster in 1:6 cement mortar**
- (i) In main building/courtyard = $2 \times 157.734 \times 3.3$
= 1041.044 square meter
- (ii) In parapet wall = $2 \times 68.58 \times 0.75$
= 102.87 square meter
- (iii) In roof = 409.85 sq. m
- (iii) Deduction for doors/windows = $2 \times (8 \times 1.07 \times 2.1 + 4 \times 0.883 \times 2.1 + 20 \times 1.5 \times 1.35 + 6 \times 0.6 \times 0.45)$
= 146.145 square meter
- (iv) Total plaster = 1407.619 square meter

8. Centering and shuttering:

- (i) For Columns = $60 \times 1.07 \times 4.6$
= 295.320 square meter
- (ii) For beam at plinth level = $(157.734 + 19.5) \times 0.45$
= 79.755 square meter
- (iii) For beam at door level = $(157.734 + 19.5) \times 0.686$
= 121.582 square meter
- (v) For beam at roof level = $(157.734 + 19.5) \times 0.99$
= 175.461 square meter
- (vi) For chajjas = $8 \times 0.6 \times 1.5$
= 7.200 square meter
- (vii) For slab = 409.850 sq. m
- (viii) Total shuttering = 1089.168 square meter

9. Filling foundation with moorum = 381.95×0.5

$$= 190.975 \text{ cubic meter}$$

10. Wood required for frames

$$= 0.0635 \times 0.127 \times (8 \times 5.334 + 4 \times 5.105 + 20 \times 8.534 + 6 \times 2.1)$$
$$= 1.987 \text{ cubic meter}$$

11. Frame work for doors/window

$$= (8 \times 1.07 \times 2.1 + 4 \times 0.883 \times 2.1 + 20 \times 1.5 \times 1.35 + 6 \times 0.6 \times 0.45)$$
$$= 67.513 \text{ square meter}$$

12 Flooring

$$= 409.850 \text{ square meter}$$