

## 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 6 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 =  $(85.73 + 9.753) \times 0.22 \times 0.15$   
= 3.151 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 = 35.844 cubic meter

4. **Steel required in RCC** = 1.25 % of volume of RCC  
= 3517 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 =  $85.73 \times 0.525$   
= 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 =  $12.59 \times 10.90 + 3.60 \times 3.00$

(vii) Total shuttering = 148.031 square meter  
=401.648 square meter

9. Filling foundation with moorum = 12.59 x 10.90 x 0.5  
= 68.616 cubic meter

10. Wood required for frames = 0.0635 x 0.127 x (5 x 5.334 +  
4 x 5.105 + 4 x 8.534 + 2 x 5.4 +  
9 x 2.1)  
= 0.895 cubic meter

11. Frame work for doors/window = (5 x 1.07 x 2.1 + 6 x 0.838 x 2.1 +  
4 x 1.5 x 1.35 + 2 x 1.2 x 1.35 +  
9 x 0.6 x 0.45)  
= 35.564 square meter

12 Flooring = 12.59 x 10.90 + 3.60 x 3.00  
= 148.031 square meter