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 x 2 + 15.75 x 2 + 54.25 x 1 +
   23.5 x 4 + 21.5 x 6 + 33.25 x 1 + 19.75 x 1 + 8.5 x 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 x 1.0 x 1.0 x 1.2 meter
       = 72.000 cubic meter
   (ii) For walls = (157.734 - 104 x 0.5) x 0.3 x 0.5 +
                  (19.50 – 8 x 0.5 ) x 0.3 x 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 \times 0.1
        = 38.195 cubic meter

   (iv) For flooring in porch = 27.90 \times 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 = $409.85 \times 0.125$
            = 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**
   
   \[= 1.75 \text{% of volume of RCC}\]
   
   \[= 14180 \text{ kg}\]

5. **Masonry in foundation/plinth**
   
   \[= (157.734 + 19.5 - 52 \times 0.22) \times 0.22 \times 0.9\]
   
   \[= 32.827 \text{ cubic meter}\]

6. **Masonry in superstructure:**
   
   (i) **In main building**
   
   \[= 157.734 \times 0.22 \times 2.80\]
   
   \[= 97.164 \text{ cubic meter}\]

   (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\]
   
   \[= 16.076 \text{ cubic meter}\]

   (iii) **Masonry in staircase tower**
   
   \[= 2 \times (6.3 + 2.25) \times 2.1 \times 0.22\]
   
   \[= 7.900 \text{ cubic meter}\]

   (iv) **Masonry in parapet wall**
   
   \[= 68.58 \times 0.75 \times 0.22\]
   
   \[= 11.315\]

   (v) **Total Masonary**
   
   \[= 100.303 \text{ cubic meter}\]

7. **Plaster in 1:6 cement mortar**
   
   (i) **In main building/courtyard**
   
   \[= 2 \times 157.734 \times 3.3\]
   
   \[= 1041.044 \text{ square meter}\]

   (ii) **In parapet wall**
   
   \[= 2 \times 68.58 \times 0.75\]
   
   \[= 102.87 \text{ square meter}\]

   (iii) **In roof**
   
   \[= 409.85 \text{ sq. m}\]

   (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)\]
   
   \[= 146.145 \text{ square meter}\]

   (iv) **Total plaster**
   
   \[= 1407.619 \text{ square meter}\]
8. **Centering and shuttering:**

(i) For Columns  
= 60 x 1.07 x 4.6  
= 295.320 square meter

(ii) For beam at plinth level  
= (157.734 + 19.5) x 0.45  
= 79.755 square meter

(iii) For beam at door level  
= (157.734 + 19.5) x 0.686  
= 121.582 square meter

(v) For beam at roof level  
= (157.734 + 19.5) x 0.99  
= 175.461 square meter

(vi) For chajjas  
= 8 x 0.6 x 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 x 0.5  
= 190.975 cubic meter

10. **Wood required for frames**  
= 0.0635 x 0.127 x (8 x 5.334 + 4 x 5.105 + 20 x 8.534 + 6 x 2.1)  
= 1.987 cubic meter

11. **Frame work for doors/window**  
= (8 x 1.07 x 2.1 + 4 x 0.883 x 2.1 + 20 x 1.5 x 1.35 + 6 x 0.6 x 0.45)  
= 67.513 square meter

12. **Flooring**  
= 409.850 square meter