ESTIMATE OF FOREST BARRIER

1. C/C length of walls in quarter = 29.75 x 3 + 24.25 x 2 + 12.0 x 4
   + 12.75 X 3 + 5 X 4 running feet
   = 244 running feet
   = 73.20 running meter
2. No. of columns in quarter = 18
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 6 inches
6. Beam on door/windows = 9 inches x 6 inches
7. Beam at roof level = 9 inches x 6 inches
8. Thickness of slab = 4 inches

Estimate of different works

1. Excavation:

(i) For columns = 18 x 1.0 x 1.0 x 1.2 meter
= 21.600 cubic meter

(ii) For walls =[73.2 - 18 x 0.5] x 0.3 x 0.5
= 9.63 cubic meter

(iii) Total excavation = 31.23 cubic meter

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

(i) For columns = 18 x 1.0 x 1.0 x 0.1
= 1.8 cubic meter

(ii) For walls = 73.2 x 0.3 x 0.1
= 2.196 cubic meter

(iii) For flooring in rooms = 90.00 X 0.1
= 9.000 cubic meter

(iv) Total CC = 12.996 cubic meter

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

(i)	Columns footing	= 18 x (1 x 1 + 0.22 x 0.22)/2 x 0.3 = 2.830 cubic meter
(ii)	Columns up to plinth level	= 18 x 1.2 x 0.22 x 0.22 = 1.045 cubic meter
(iii)	Column up to roof level	= 18 x 0.22 x 0.22 x 3.1 = 2.700 cubic meter
(iv)	Beam at plinth level	= 73.2 x 0.22 x 0.15 = 2.415 cubic meter
(v)	Beam at door level	= 73.2 x 0.22 x 0.15 = 2.415 cubic meter
(vi)	Beam at roof level	= 73.2 x 0.22 x 0.15 = 2.415 cubic meter
(vii)	Chajjas	= 9 x 0.6 x 1.5 x 0.1 = 0.810 cubic meter
(viii)	Slab	= 90.00 x 0.1 = 9.000 cubic meter
(ix)	Total RCC	= 23.630 cubic meter

4. **Steel required in RCC** = 1.25 % of volume of RCC
= 2318 kg

5. **Masonary in foundation/plinth** = 73.2 x 0.22 x 0.9
= 14.493 cubic meter

6. **Masonary in superstructure:**

(i)	In main building	= 73.2 x 0.22 x 2.85 = 45.896 cubic meter
(ii)	In bath/toilet	= 4.0 x 0.22 x 1.5 X 3.1 = 4.092 cubic meter
(iii)	Deduction for doors/windows	= (4 x 1.07 x 2.1 + 4 x 0.90 x 2.1 9 x 1.2 x 1.5 + 4 x 0.45 x 0.60) x 0.22 = 7.442 cubic meter
(iv)	Total Masonary	= 42.546 cubic meter

7. **Plaster in 1:6 cement mortar**

(i) In main building	= 2 x 73.2 x 3.0
	= 439.200 square meter
(ii) In bath/toilet	= 4 X 2 x 3.1 x 1.5
	= 37.2 square meter
(iii) In roof	= 90.00 square meter
(v) Deduction for doors/windows	=2 x (4 x 1.07 x 2.1 + 4 x 0.90 x 2.1
	9 x 1.2 x 1.5 + 4 x 0.45 x 0.60)
	= 67.652 square meter
(vi) Total plaster	= 498.748 square meter

8. **Centering and shuttering:**

(i)For Columns in main building	= 18 x 4 x 0.22 x 4.6
	= 72.864 square meter
(ii)For beam at plinth level	= 73.2 x 0.3
	= 21.96 square meter
(iii) For beam at door level	= 73.2 x 0.3
	= 21.96 square meter
(iv) For beam at slab level	= 73.2 x 0.3
	= 21.96 square meter
(v) For chajjas	= 9 x 0.6 x 1.5
	= 8.10 square meter
(iv) For slab	= 90.00 square meter
Total shuttering	=236.844 square meter

9. **Filling foundation with moorum**	= 90 x 0.5
	= 45.00 cubic meter.
Wood required for frames	= 0.0635 x 0.127 x (4 x 1.07 x 2.1 +
	4 x 0.90 x 2.1
	9 x 1.2 x 1.5 + 4 x 0.45 x 0.60)
	= 0.272 cubic meter
Frame work for doors/window	= (4 x 1.07 x 2.1 +
	4 x 0.90 x 2.1
	9 x 1.2 x 1.5 + 4 x 0.45 x 0.60)
	= 33.828 square meter
10. **Flooring**	= 90.00 square meter