

ESTIMATE OF REST HOUSE

(Total Area = 1962 sq. ft. + Courtyard 278 sq.ft)

1. C/C length of walls = $55.25 \times 1 + 39.75 \times 1 + 46.50 \times 1 + 31.00 \times 1 + 6.75 \times 3 + 39.25 \times 2 + 14.75 \times 5$ running feet
= 345 running feet
= 105.16 running meter
2. C/C length of court yard wall = $26.75 \times 1 + 8.75 \times 1$
= 35.50 running feet
= 10.82 running meter
3. No. of columns = 34
4. Size of each column = 22 nos. of size 12 inches x 9 inches
= 12 nos. of size 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 slab level = 9 inches x 15 inches
9. Thickness of slab = 4 inches

Estimate of different works

1. Excavation:

- (i) For columns = $34 \times 1.0 \times 1.0 \times 1.2$ meter
= 40.800 cubic meter
- (ii) For walls = $(105.16 + 10.82 - 64 \times 0.5) \times 0.3 \times 0.5$
= 12.597 cubic meter
- (iii) Total excavation = 53.397 cubic meter

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

- (i) For columns = $34 \times 1.0 \times 1.0 \times 0.1$
= 3.400 cubic meter
- (ii) For walls = $(105.16 + 10.82) \times 0.3 \times 0.1$
= 3.479 cubic meter
- (iii) For flooring in rooms = 182.51×0.1
= 18.251 cubic meter

- (iv) Total CC = 25.13 cubic meter

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

- (i) Columns footing = $34 \times (1 \times 1 + 0.22 \times 0.22) / 2 \times 0.3$
= 5.346 cubic meter
- (ii) Columns up to plinth level = $34 \times 1.2 \times 0.22 \times 0.22$
= 1.974 cubic meter
- (iii) Column up to roof level = $34 \times 0.22 \times 0.22 \times 3.1$
= 5.101 cubic meter
- (iv) Beam at plinth level = $(105.16 + 10.82) \times 0.22 \times 0.15$
= 3.827 cubic meter
- (v) Beam at door level = $105.16 \times 0.22 \times 0.15$
= 3.470 cubic meter
- (vi) Beam at slab level = $105.16 \times 0.22 \times 0.37$
= 8.560
- (vii) Chajjas = $6 \times 0.6 \times 1.5 \times 0.1$
= 0.540 cubic meter
- (viii) Slab = 182.51×0.1
= 18.251 cubic meter
- (ix) Total RCC = 47.069 cubic meter

- 4. Steel required in RCC = 2.00 % of volume of RCC
= 7389 kg

5. **Masonry in foundation/plinth** = $(105.16 + 10.82 - 34 \times 0.22) \times 0.22 \times 0.9$
= 21.483 cubic meter

6. **Masonry in superstructure:**

(i) In main building = $(105.16 + 10.82) \times 0.22 \times 2.90$
= 73.995 cubic meter

(ii) Deduction for doors/windows = $(4 \times 1.07 \times 2.1 + 7 \times 0.838 \times 2.1 + 3 \times 1.5 \times 1.35 + 9 \times 1.2 \times 1.35 + 4 \times 0.6 \times 0.45) \times 0.22$
= 9.663 cubic meter

(iii) Deduction for masonry in verandah = $(19.812 \times 2.1 \times 0.22)$
= 9.153

(iv) Total Masonary = 55.179 cubic meter

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

(i) In main building = $2 \times (105.16 + 10.82) \times 3.4$
= 788.664 square meter

(ii) In roof = 182.51 sq. m

(iii) Deduction for doors/windows = $2 \times (4 \times 1.07 \times 2.1 + 7 \times 0.838 \times 2.1 + 3 \times 1.5 \times 1.35 + 9 \times 1.2 \times 1.35 + 4 \times 0.6 \times 0.45)$
= 87.845 square meter

(iv) Total plaster = 883.329 square meter

8. **Centering and shuttering:**

(i) For Columns in main building = $34 \times 4 \times 0.22 \times 4.6$
= 137.632 square meter

(ii) For beam at plinth level = $(105.16 + 10.82) \times 0.3$
= 34.794 square meter

- (iii) For beam at door level = 105.16 x 0.525
= 55.209 square meter
- (iii) For beam at roof level = 105.16 x 0.96
= 100.954 square meter
- (iv) For chajjas = 6 x 0.6 x 1.5
= 5.400 square meter
- (v) For slab = 182.51 sq. m
- (vi) Total shuttering = 516.499 square meter

9. Filling foundation with moorum = 182.51 x 0.5
= 91.26 cubic meter

10. Wood required for frames = 0.0635 x 0.127 x (4 x 5.334 +
7 x 5.105 + 3 x 8.534 + 9 x 5.4 +
4 x 2.1)
= 1.126 cubic meter

11. Frame work for doors/window = (4 x 1.07 x 2.1 + 7 x 0.838 x 2.1 +
3 x 1.5 x 1.35 + 9 x 1.2 x 1.35 +
4 x 0.6 x 0.45)
= 43.922 square meter

12 Flooring = 182.51 square meter