ESTIMATE OF CF/DCF RESIDENCE

(Total Area = 2251 sq. ft. + Courtyard 600 sq.ft)

1. C/C length of walls = 46.25 x 2 + 42.25 x 1 + 12.75 x 4 +
    17.00 x 1 + 48.25 x 4 + 7.75 x 1 running feet
    = 403.51 running feet
    = 122.99 running meter

2. C/C length of court yard wall = 46.25 x 1 + 12.4 x 2
    = 71.05 running feet
    = 21.66 running meter

3. No. of columns = 38

4. Size of each column = 26 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 = 38 x 1.0 x 1.0 x 1.2 meter
    = 45.600 cubic meter

    (ii) For walls = (122.99 + 21.66 - 76 x 0.5) x 0.3 x 0.5
    = 15.997 cubic meter

    (iii) Total excavation = 61.597 cubic meter

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

(i)	For columns	= 38 x 1.0 x 1.0 x 0.1
		= 3.800 cubic meter
(ii)	For walls	= (122.99 + 21.66) x 0.3 x 0.1
		= 4.339 cubic meter
(iii)	For flooring in rooms	= 209.395 x 0.1
		= 20.939 cubic meter
(iv)	Total CC	= 29.078 cubic meter

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

(i)	Columns footing	= 26 x (1 x 1 + 0.30 x 0.22)/2 x 0.3
		+ 12 X (1 x 1 + 0.22 x 0.22)/2 x 0.3
		= 6.044 cubic meter
(ii)	Columns up to plinth level	= 26 x 1.2 x 0.30 x 0.22 +
		12 x 1.2 x 0.22 x 0.22
		= 2.756 cubic meter
(iii)	Column up to roof level	= 26 x 3.1 x 0.30 x 0.22 +
		6 x 3.1 x 0.22 x 0.22 +
		6 x 1.8 x 0.22 x 0.22
		= 6.742 cubic meter
(iv)	Beam at plinth level	= (122.99 + 21.66) x 0.22 x 0.15
		= 4.773 cubic meter
(v)	Beam at door level	= 122.99 x 0.22 x 0.15
		= 4.059 cubic meter
(vi)	Beam at slab level	= 122.99 x 0.22 x 0.37
		= 10.011 cubic meter
(vii)	Chajjas	= 8 x 0.6 x 1.5 x 0.1
		= 0.720 cubic meter
(viii)	Slab	= 209.395 x 0.1
		= 20.939 cubic meter
(ix)	In stair case	= 10 x 1.20 x 0.1

	= 1.200 cubic meter
Total RCC	= 57.244 cubic meter

4. **Steel required in RCC**   = 1.50 % of volume of RCC

                                               = 6740 kg

5. **Masonary in foundation/plinth**   = $(122.99 + 21.66 - 38 \times 0.22) \times 0.22 \times 0.9$

                                               = 26.985 cubic meter

6. **Masonary in superstructure**:

(i)   In main building/courtyard   = $122.99 \times 0.22 \times 2.80 + 21.66 \times 0.22 \times 1.8$

                                               = 84.339 cubic meter

(ii)   Deduction for doors/windows   = $(6 \times 1.07 \times 2.1 + 7 \times 0.838 \times 2.1 +$

                                                    $3 \times 1.5 \times 1.35 + 4 \times 1.2 \times 1.35 +$

                                                    $1 \times 2.1 \times 2.1 + 6 \times 0.6 \times 0.45) \times 0.22$

                                               = 9.765 cubic meter

(iii)   Masonary in parapet   = $57.30 \times 0.75 \times 0.22$

                                               = 9.454 cubic meter

(iv)   Masonary in staircase tower   = $2 \times (5.03 + 2.59) \times 2.1 \times 0.22$

                                               = 7.041

(v)   Total Masonary   = 91.069 cubic meter

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

(i)   In main building/courtyard   = $2 \times 122.99 \times 3.3 + 2 \times 21.66 \times 1.8$

                                               = 889.71 square meter

(ii)   In parapet wall   = $2 \times 57.30 \times 0.75$

                                               = 85.95 square meter

(iii)   In roof   = 209.395 sq. m

(iii) Deduction for doors/windows   = $2 \times (6 \times 1.07 \times 2.1 + 7 \times 0.838 \times 2.1 +$

                                                    $3 \times 1.5 \times 1.35 + 4 \times 1.2 \times 1.35 +$

                                                    $1 \times 2.1 \times 2.1 + 6 \times 0.6 \times 0.45)$

| | | = 88.770 square meter |

| (iv) | Total plaster | = 1096.285 square meter |

8. **Centering and shuttering**:

(i) For Columns	= 26 x 1.07 x 4.6 + 6 x 0.88 x 4.6
	6 x 4 x 0.22 x 3.3
	= 169.684 square meter

| (ii) For beam at plinth level | = (122.99 + 21.66) x 0.3 |
| | = 43.395 square meter |

| (iii) For beam at door level | = 122.99 x 0.525 |
| | = 64.569 square meter |

(v)	For beam at roof level	= 122.99 x 0.96
		= 118.070 square meter
(vi)	For chajjas	= 8 x 0.6 x 1.5
		= 7.200 square meter
(vii)	For slab	= 209.395 sq. m
(viii)	Total shuttering	= 612.313 square meter

| 9. **Filling foundation with moorum** | = 209.395 x 0.5 |
| | = 104.697 cubic meter |

| 10. **Wood required for frames** | = 0.0635 x 0.127 x (6 x 5.334 + 7 x 5.105 + 3 x 8.534 + 4 x 5.4 + 1 x 8.4 + 6 x 2.1) |
| | = 1.096 cubic meter |

| **11. Frame work for doors/window** | = (6 x 1.07 x 2.1 + 7 x 0.838 x 2.1 + 3 x 1.5 x 1.35 + 4 x 1.2 x 1.35 + 1 x 2.1 x 2.1 + 6 x 0.6 x 0.45) |
| | = 44.385 square meter |

| 12 **Flooring** | = 209.395 square meter |