

ଓଡ଼ିଶା ସେତୁ ଓ ନିର୍ମାଣ ନିଗମଳି

(ଓଡ଼ିଶା ସରକାରଙ୍କ ଏକ ଉଦ୍ୟୋଗ)

ODISHA BRIDGE & CONSTRUCTION CORPORATION LIMITED

(A Government of Odisha Undertaking under Works Department)

CAPITAL RE-DEVELOPMENT PROJECT (CRDP)

(Government Housing Phase-II)

Construction of 300 Quarters in MLA colony & G.A. land at
Unit-IV, Bhubaneswar under Capital Re-Development Project
(CRDP)

REPORT

Name of the Work: Construction of 300 Quarters in MLA colony & G.A. land at Unit-IV, Bhubaneswar under Capital Re-Development Project (CRDP)

1. Introduction

This is an estimate for re-construction of Government quarters at Unit-IV, Bhubaneswar under the Capital Re-Development Project (CRDP)

As per the estimates of GA & PG Department, there is a shortfall of around 1500 nos. of Government quarters in capital city of Bhubaneswar. Further, Govt. quarters built about 60 years ago have started deteriorating demanding major maintenance. Hence there is a need for creation of new accommodation for Government employees in Bhubaneswar. In this regard, a meeting was held under the Chairmanship of the Chief Secretary, Government of Odisha on 5.11.2019 to discuss this issue. In the meeting, the following action points were decided to be taken up.

- a. *There are three patches of land: Part A- 6.40 Acre (Existing MLA flats), Part B- 12.64 Acre (Existing single storey MLA Colony), Part C- 5.02 Acre (Existing single storey G.A. quarters (IV N & type II quarters)). Out of these, in the first phase Part- B & Part- C comprising 17.66 Acre are available for construction of Type- VII (105 numbers) & Type- VI (195 numbers) for accommodation of MLAs and Government Officers respectively.*
- b. *Quarters shall be built in multi storey apartments as per the plinth area norms of the CPWD, 2012 for various categories of employees. These norms and specifications have been approved by the Ministry of Urban Development, Govt. of India duly considering the change in lifestyle in the present context and accommodate modern household gadgets like refrigerator, washing machine, AC and parking provisions.*
- c. *Type- VI and VII quarters shall be built over 17.66 acres at Unit- IV.*

Accordingly, Department of Works was directed to re-plan and redevelop government quarters in the above locations through the Odisha Bridge Construction Corporation.

2. Estimated Cost

The estimate amounting to **₹548.62 crore** has been framed for the above work: *Construction of 300 Quarters in MLA colony & G.A. land at Unit-IV, Bhubaneswar under Capital Re-Development Project (CRDP)* on the basis of CPWD Plinth Area Rates, 2020. The CPWD rates have been considered, as the Plinth Area Rates published by the Chief Engineer, Buildings, Odisha does not cover floor-wise civil works in multi-storey buildings above seventh floor, nor rates are available for specialized services as required in such buildings. The provisions for services have been limited so that they meet the bare minimum need of the occupant. Besides, Landscaping of the entire area, Driveway all around, Boundary wall, Community spaces, Playgrounds, Gymnasium, Police outpost, Ayurvedic & Homeopathic Hospital, Railway reservation counter have also been considered.

The above plinth area rates have been considered excluding 12% GST and 8% Supervision Charges have been added in the estimate. The work will be taken up on turnkey basis (EPC). Standard specifications of CPWD, NBC-2016 will be followed for all items of works and a minimum of GRIHA Rating-3 has been proposed to be achieved.

The building shall be constructed using new technology of Monolithic Concrete Construction System using aluminium formwork following guidelines of Ministry of Housing and Urban Affairs vide its OM no. 18012/7/2016W-3 dated 20.03.2018

A. Construction of Multi storey Type VI & VII quarters proposed at Unit-IV:

The total area of Unit IV is 17.66 acre. It has been proposed to construct five blocks of Type-VI and three blocks of Type- VII flats on this piece of land. The plan for standard Type VI and Type VII quarter of CPWD has been adopted. Four dwelling units have been accommodated in each floor duly considering all the provisions. As per the NO Objection Certificate Application System (NOCAS, Airport Authority of India), the approximate Permissible Top Elevation is 87.31m and the site is being 48.87m above MSL, each block has been proposed with 3.3m floor height & 0.75m plinth height for 10 storeys and a basement floor. There will be 5 blocks of Type- VI and 3 blocks of Type- VII with 39 nos. & 35 nos. of flats in each block respectively and the total flats will be 300 in 8 blocks.

Each block has a basement floor for parking. Provision of internal & external water supply, CCTV, Fire and life safety provisions as per NBC- 2016 guidelines, DG backup for lift and common area lighting, modular kitchen, UPS & Grid-interactive roof top solar photo voltaic power generation system including space frame for 5% load, Lightning conductor have been incorporated in the estimate. Other miscellaneous works such as Rainwater harvesting and recharging, installation of Sewerage Treatment Plant, Strom water drain have been taken into consideration during preparation of estimate. Two numbers of three storey Club House with total built-up area 4500 sqm has been proposed. The buildings shall have GRIHA 3 Star compliance.

General Facilities:

- i. Passenger elevators
- ii. Fire Exit staircase
- iii. Basement floor parking
- iv. Fire & Life Safety provision
- v. DG Backup for lift and common area lighting
- vi. CC TV surveillance
- vii. Rainwater harvesting and recharging
- viii. Sewerage Treatment Plant
- ix. Roof top Solar Panel
- x. Storm water drain
- xi. Three story Club House
- xii. Gymnasium
- xiii. Police outpost
- xiv. Ayurveda & Homeopathic Hospital
- xv. Railway reservation counter
- xvi. Basket Ball, Lawn tennis and badminton courts.
- xvii. Total built-up area of houses & facilities to be provided= 1,42,871 sqm

Project features of type- VI:

- i. Types of quarters: Type VI
- ii. No. of Towers: 5
- iii. No. of floor: B+G+9
- iv. No. of flats in each floor: 4 (3 in ground floor)
- v. Total nos. of proposed flats/quarters: 195
- vi. Floor area of each quarter: 254.50 Sqm

Project features of type- VII:

- i. Types of quarters: Type VII
- ii. No. of Towers: 3
- iii. No. of floor: B+G+8
- iv. No. of flats in each floor: 4
- v. Total nos. of proposed flats/quarters: 105
- vi. Floor area of each quarter: 356.50 Sqm



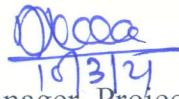
16/3/21

Project Manager (Tender)



16/3/21

Senior Manager (Tender)



16/3/21

General Manager, Projects-II

General Abstract

1 PART-A (Estimate for Type-VI Quarters)

(A) Civil Works.	=	Rs	1,60,21,30,850.00
(B) Water Supply & Sanitary Installation Services.	=	Rs	18,13,62,512.00
(C) Electrical Services.	=	Rs	56,42,01,153.00
	Total	=	2,34,76,94,515.00

2 PART-B (Estimate for Type-VII Quarters)

(A) Civil Works.	=	Rs	1,18,57,04,199.00
(B) Water Supply & Sanitary Installation Services.	=	Rs	12,15,34,680.00
(C) Electrical Services.	=	Rs	41,77,19,875.00
	Total	=	1,72,49,58,754.00

3 PART-C (Estimate for Club House/Auxiliary

(A) Civil Works.	=	Rs	9,25,44,660.00
(B) Water Supply & Sanitary Installation Services.	=	Rs	95,21,548.00
(C) Electrical Services.	=	Rs	3,20,45,202.00
(D) Miscellaneous Works	=	Rs	27,50,99,782.64
	=	Rs	40,92,11,192.64
	Total (1+2+3)	=	4,48,18,64,461.64

(E.) Preconstruction activities (Lump sum)	=	Rs	1,50,00,000.00
	Total	=	4,49,68,64,461.64
	or Say	=	4,49,68,64,000.00

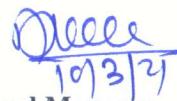
GST	@	12%	=	Rs	53,96,23,680.00
Add 8% Corporation Supervision charge and 2% incentives for timely completion of project	@	10%	=	Rs	44,96,86,400.00
		G.Total:	=	Rs	5,48,61,74,080.00
		Or Say	=	Rs	548.62 Crore



Project Manager



Senior Manager



General Manager

Technically approved for Rs. 548.62 Crore (Rupees Five Hundred Forty-Eight Crore Sixty-Two Lakh only)



E.I.G.-com-Managing Director
Q.B. & C.C. Ltd.
Bhubaneswar

**Parametric estimate for construction of 300 Quarters in MLA colony & G.A. land at Unit-IV,
Bhubaneswar under Capital Re-development Project.**

(1). General Provision:

Group of Occupancy = Group A - Residential (As Per Cl No.7, Part-III of NBC, 2016)
 Occupant Load = 12.5 m²/person

Total Builtup area = 1,42,871 Sqm
 (Type-VI + Type-VII + Club House)

Type-VI houses = 5463 persons

(2). Plot Area at Unit-IV = 17.66 Acre 71,468 Sqm
 Front road width (South side) = 15 m
 Road width (East side) = 10 m
 Road width (West side) = 30 m

PART-A (Estimate for Type-VI Quarters):

A. General

Total No of Blocks = 5 Nos
 No of Type-VI quarter per Floor = 4 Nos
 No of floors = B+G+9
 Total No of Dwelling units = 195 Nos (One dwelling unit in ground floor designed to provide access & supervisor's room.)

B. Area as per CPWD norms, 2012

(Main dwelling units =	203.50	Sqm
Servant Unit =	21.50	Sqm
Balcony for main units =	21.50	Sqm
Balcony for servant unit =	3.50	Sqm
Utility area =	4.50	Sqm
Total =	254.50	Sqm)

Area provided in each floor = 254.50

Staircase area for four units as per CPWD norms, 2012 = 28.00 Sqm

Numbers of staircases provided in each floor = 2

Area in plan for two staircases = 35.50 Sqm

Circulation area for four units as per CPWD norms, 2012 = 28.00 Sqm

Lobby and corridor area provided for four units = 133.27 Sqm

Lifts

Three lifts in each Block

Two passenger Lift @ 13 Pax = 24.83 Sqm

One stretcher Lift @ 20 Pax

(Circulation area such as lift lobby, connecting corridor to four blocks, extra space for entry to the individual units considered over and above the above norms as per the CPWD norms 2012.

Total area of one block = 1,212.00 Sqm

(4). Compliance to Bylaw requirements

(i) Parking for Type-VI Quarters

Requirement @30% of Built-up area = 18,180 Sqm

Parking in Basement floor in two blocks = 18,425 Sqm

Total parking space provided = 18,425 Sqm

Total ECS provided = 575 for 195 dwelling units

AREA STATEMENT

1 Basement	=	18,425	sqm
2 Ground	=	6,060	sqm
3 1st Floor	=	6060	sqm
4 2nd Floor	=	6060	sqm
5 3rd Floor	=	6060	sqm
6 4th Floor	=	6060	sqm
7 5th Floor	=	6060	sqm
8 6th Floor	=	6060	sqm
9 7th Floor	=	6060	sqm
10 8th Floor	=	6060	sqm
11 9th Floor	=	6060	sqm
Total Built-up area = 79,025			sqm

Rough Cost Estimate

Sl No.	Item	Quantity	Unit	Rate		Amount		Remarks
A.	Civil Works RCC Framed structure residential Building floor height 3.3 m. Providing and fixing of customized Aluminium formwork for monolithic construction RCC members with a repetitive usage of 100 times using grade 5052 aluminium for panel sheets of minimum 4 mm thick and grade 6061 (Type-6) aluminium for extruded sections.							
	The form work includes of beam components i.e. beam side panel, prop head for soffit beam, beams soffit panel, beam soffit bulk head and deck components i.e. deck panel, deck prop, prop length, deck mid, soffit length, deck beam bar and wall components i.e. wall panel, rocker, kiker and internal soffit corner, external soffit corner, external corner, internal corner etc., The panels are held in position by a simple pin and wedge system that passes through holes in the out side rib of each panel. The tolerance of finished panels to be (-1 mm), and shall conform to IS 14687-1999. Pins and wedges to be made of high grade mild steel, all complete as per direction of Engineer-in-charge.							
	Basement height up to 3.6 m	18425.00	Sqm @	27,678.57	=	Rs	50,99,77,652.25	
	Ground Floor, Plinth height of 0.75m (3.3 m floor Height)	6060.00	Sqm @	18,214.29	=	Rs	11,03,78,597.40	
	First Floor (3.3m floor Height)	6060.00	Sqm @	17,901.79	=	Rs	10,84,84,847.40	As per CPWD Plinth Area Rate- 2020. (Rs.89.28/- extra for every additional storey over Six storey.)
	Second Floor (3.3m floor Height)	6060.00	Sqm @	17,901.79	=	Rs	10,84,84,847.40	
	Third Floor (3.3m floor Height)	6060.00	Sqm @	17,901.79	=	Rs	10,84,84,847.40	
	Fourth Floor (3.3m floor Height)	6060.00	Sqm @	17,901.79	=	Rs	10,84,84,847.40	
	Fifth Floor (3.3m floor Height)	6060.00	Sqm @	17,901.79	=	Rs	10,84,84,847.40	
	Sixth Floor (3.3m floor Height)	6060.00	Sqm @	17,991.08	=	Rs	10,90,25,944.80	
	Seventh Floor (3.3m floor Height)	6060.00	Sqm @	18,080.37	=	Rs	10,95,67,042.20	
	Eighth Floor (3.3m floor Height)	6060.00	Sqm @	18,169.66	=	Rs	11,01,08,139.60	
	Nineth Floor (3.3m floor Height)	6060.00	Sqm @	18,258.95	=	Rs	11,06,49,237.00	
		79025.00	Sqm	Sub-Total-A:		A	1,60,21,30,850.00	
B.	WS & SI Services							
1	Internal and External Water supply	@	10.25%	On 'A'	=	Rs	16,42,18,412.00	Internal WS & SI 9%+ External WS & SI 1.25%. (As per CPWD Plinth Area Rate- 2020)
2	S.T.P	150000.00	LPD	44.64	per litre	Rs	66,96,000.00	As per CPWD- 2020
3	O.H. Water tank	195000.00	LPD	17.86	do	Rs	34,82,700.00	
4	U/G sump	390000.00	LPD	17.86	do	Rs	69,65,400.00	
				Sub-Total-B:			18,13,62,512.00	

C.	Electrical Services						
1	Internal electric installations in all floors	@	12.5%	On 'A'	=	Rs	20,02,66,356.25
2	External electric installation	@	3.75%	On 'A'	=	Rs	6,00,79,906.88
3	Solar photo voltaic power generation system (50% of Floor Area i.e 3030 Sqm)	303.00	kwp	58035.72	=	Rs	1,75,84,823.16
4	CCTV	36605.00	Sqm @	178.57	=	Rs	65,36,554.85
5	LAN	30300.00	Sqm @	446.43	=	Rs	1,35,26,829.00
6	Lightning Conductor	@	0.25%	On 'A'	=	Rs	40,05,327.13
7	Power wiring and installation in all dwelling units in all floors.	@	4.0%	On 'A'	=	Rs	6,40,85,234.00
8	Centralized intercom system	@	1.0%	On 'A'	=	Rs	1,60,21,308.50
9	Passenger Elevators 13 pax.	10.00	Nos @	21,07,142.86	=	Rs	2,10,71,428.57
10	Passenger Elevators 20 pax (Bed Lift)	5.00	Nos @	26,33,928.57	=	Rs	1,31,69,642.86
11	Fire fighting without wet riser and manual fire alarm as per N.B.C.guidelines	60600.00	Sqm @	937.50	=	Rs	5,68,12,500.00
12	Fire fighting with wet riser and sprinkler and fire alarm in Basement as per N.B.C.guidelines	18425.00	Sqm @	1,294.64	=	Rs	2,38,53,742.00
13	33kV/0.433kV or 11kV/0.433 kV substation for Unit IV	3750.00	KVA @	8,035.71	=	Rs	3,01,33,928.57
14	Supplying, installation, testing and commissioning of Silent Type DG Sets,AMF Panel, Bus Ducting/Cables from DG Sets to Essential Panel, Synchronizing Panel where required, DG Set enclosure room sound insulation/ ventilation /smoke exhaust as required, Earthing of DG Set system, control cabling, Fuel tank/piping, DG set Exhaust piping/ Exhaust Chimney as per CPCB norms, Civil works connected with DG Sets including Foundation as required.	1500.00	KVA @	9,821.43	=	Rs	1,47,32,142.86
15	Supplying, installation, testing and commissioning of online 3 phase UPS System with 30 minutes back up including batteries, interconnecting cables, battery racks etc.	600.00	KVA @	17,857.14	=	Rs	1,07,14,285.71
16	Supplying, installation, testing and commissioning of Grid interactive roof top solar photo voltaic power generation system including space frame	200.00	kWp @	58035.71	=	Rs	1,16,07,143.00
				Sub-Total-C:			56,42,01,153.00
				Total (A+B+C)			2,34,76,94,515.00

As per CPWD
Plinth Area Rates
2020
&
Guidelines for
Substation &
Power
Distribution
Systems of
Buildings 2020.

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PART-B (Estimate for Type-VII Quarters):

A. General

Total No of Blocks	=	3	Nos
No of Type-VII quarter per Floor	=	4	Nos
No of floors	=	B+G+8	
Total No of Dwelling units			
Type-VII houses	=	105	Nos persons
(3 blocks x 4 per floor x 9 floors)			(One dwelling unit in ground floor designed to
Total nos of Persons		4123	Persons

B. Area as per CPWD norms, 2012

(Main dwelling units	=	287.00	Sqm
One Servant Unit	=	21.50	Sqm
Balcony for main units	=	35.00	Sqm
Balcony for servant unit	=	4.00	Sqm
Utility area	=	9.00	Sqm
Total	=	356.50	Sqm)
Area provided in each floor	=	356.50	Sqm

Staircase area for four units as per CPWD norms, 2012 = 28 Sqm

Numbers of staircases provided in each floor = 2

Area in plan for two staircases = 54.44 Sqm

Circulation area for four units as per CPWD norms, 2012 = 28 Sqm

Lobby and corridor area provided for four units = 189.00 Sqm

Lifts

Three lifts in each Block	=		
Two passenger Lift @ 13 Pax	=	21.75	Sqm
One fire Lift @ 20 Pax	=	10.875	Sqm

(Circulation area such aslift & lift lobby, connecting corridor to four blocks, extra space for entry to the individual units considered over and above the above norms as per the CPWD norms 2012.

Total area of one block = 1,702.00 Sqm

(4). Compliance to Bylaw requirements

(i) Parking for Type-VI Quarters

Requirement @30% of Built-up area	=	13,786	Sqm
Parking in Basement floor in two blocks	=	13,392	Sqm
Total parking space provided	=	13,392	Sqm
Total ECS provided	=	418	for 105 dwelling units

AREA STATEMENT

1 Basement	=	13,392	sqm
2 Ground Floor	=	5106	sqm
3 1st Floor	=	5106	sqm
4 2nd Floor	=	5106	sqm
5 3rd Floor	=	5106	sqm
6 4th Floor	=	5106	sqm
7 5th Floor	=	5106	sqm
8 6th Floor	=	5106	sqm
9 7th Floor	=	5106	sqm
10 8th Floor	=	5106	sqm
Total Built-up area = 59,346			sqm

Rough Cost Estimate							
Sl No.	Item	Quantity	Unit	Rate		Amount	Remarks
A.	<u>Civil Works</u> RCC Framed structure residential Building floor height 3.3 m. Providing and fixing of customized Aluminium formwork for monolithic construction RCC members with a repetitive usage of 100 times using grade 5052 aluminium for panel sheets of minimum 4 mm thick and grade 6061 (Type-6) aluminium for extruded sections.						
	The form work includes of beam components i.e. beam side panel, prop head for soffit beam, beams soffit panel, beam soffit bulk head and deck components i.e. deck panel, deck prop, prop length, deck mid, soffit length, deck beam bar and wall components i.e. wall panel, rocker, kiker and internal soffit corner, external soffit corner, external corner, internal corner etc., The panels are held in position by a simple pin and wedge system that passes through holes in the out side rib of each panel. The tolerance of finished panels to be (-1 mm), and shall conform to IS 14687-1999. Pins and wedges to be made of high grade mild steel, all complete as per direction of Engineer-in-charge.						
	Basement height up to 3.6 m	13392.00	Sqm @	26,785.71	=	Rs 35,87,14,228.32	As per CPWD Plinth Area Rate-2020. (Rs.89.28/- extra for every additional storey over Six storey.)
	Ground Floor, Plinth height of 0.75m (3.3m floor Height)	5106.00	Sqm @	18,214.29	=	Rs 9,30,02,164.74	
	First Floor (3.3m floor Height)	5106.00	Sqm @	17,901.79	=	Rs 9,14,06,539.74	
	Second Floor (3.3m floor Height)	5106.00	Sqm @	17,901.79	=	Rs 9,14,06,539.74	
	Third Floor (3.3m floor Height)	5106.00	Sqm @	17,901.79	=	Rs 9,14,06,539.74	
	Fourth Floor (3.3m floor Height)	5106.00	Sqm @	17,901.79	=	Rs 9,14,06,539.74	
	Fifth Floor (3.3m floor Height)	5106.00	Sqm @	17,901.79	=	Rs 9,14,06,539.74	
	Sixth Floor (3.3m floor Height)	5106.00	Sqm @	17,991.08	=	Rs 9,18,62,454.48	
	Seventh Floor (3.3m floor Height)	5106.00	Sqm @	18,080.37	=	Rs 9,23,18,369.22	
	Eighth Floor (3.3m floor Height)	5106.00	Sqm @	18,169.66	=	Rs 9,27,74,283.96	
		59346.00	Sqm	Sub-Total-A: A		1,18,57,04,199.00	
B.	<u>WS & SI Services</u>						
1	Internal and External Water supply	@	10.25%	On 'A'	=	Rs 12,15,34,680.00	Internal WS & SI 9%+ External WS & SI 1.25%. (As per CPWD Plinth Area Rate-2020)
2	S.T.P	80000.00	LPD	44.64	per litre	Rs 35,71,200.00	As per CPWD-2020
3	O.H. Water tank	105000.00	LPD	17.86	do	Rs 18,75,300.00	
4	U/G sump	210000.00	LPD	17.86	do	Rs 37,50,600.00	
				Sub-Total-B:		12,15,34,680.00	
C.	<u>Electrical Services</u>						
1	Internal electric installations all floors	@	12.5%	On 'A'	=	Rs 14,82,13,024.88	
2	External electric installation	@	3.75%	On 'A'	=	Rs 4,44,63,907.46	
3	Solar photo voltaic power generation system (50% of Floor Area i.e 2553 Sqm)	255.30	kwp	58035.71	=	Rs 1,48,16,516.76	
4	CCTV	27178.20	Sqm @	178.57	=	Rs 48,53,211.17	
5	LAN	22977.00	Sqm @	446.43	=	Rs 1,02,57,622.11	

6	Lightning Conductor	@	0.25%	On 'A'	=	Rs	29,64,260.50	As per CPWD Plinth Area Rates 2020 & Guidelines for Substation & Power Distribution Systems of Buildings 2020.
7	Power wiring and installation in all dwelling units in all floors.	@	4.0%	On 'A'	=	Rs	4,74,28,167.96	
8	Centralized intercom system	@	1.0%	On 'A'	=	Rs	1,18,57,041.99	
9	Passenger Elevators 13 pax.	6	Nos @	20,26,785.71	=	Rs	1,21,60,714.29	
10	Passenger Elevators 20 pax (Bed Lift)	3	Nos @	25,35,714.29	=	Rs	76,07,142.86	
11	Fire fighting without wet riser and manual fire alarm as per N.B.C.guidelines	45954.00	Sqm @	937.50	=	Rs	4,30,81,875.00	
12	Fire fighting with wet riser and sprinkler and fire alarm in Basement as per N.B.C.guidelines	13392.00	Sqm @	1,294.64	=	Rs	1,73,37,818.88	
13	33kV/0.433kV or 11kV/0.433 kV substation for Unit IV	3000.00	KVA @	8,035.71	=	Rs	2,41,07,142.86	
14	Supplying, installation, testing and commissioning of Silent Type DG Sets,AMF Panel, Bus Ducting/ Cables from DG Sets to Essential Panel, Synchronizing Panel where required, DG Set enclosure room sound insulation/ ventilation/smoke exhaust as required, Earthing of DG Set system, control cabling, Fuel tank/piping, DG set Exhaust piping/ Exhaust Chimney as per CPCB norms, Civil works connected with DG Sets including Foundation as required.	1000.00	KVA @	9,821.43	=	Rs	98,21,428.57	
15	Supplying, installation, testing and commissioning of online 3 phase UPS System with 30 minutes back up including batteries, interconnecting cables, battery racks etc.	400.00	KVA @	17,857.14	=	Rs	71,42,857.14	
16	Supplying, installation, testing and commissioning of Grid interactive roof top solar photo voltaic power generation system including space frame	200.00	kWp @	58035.71	=	Rs	1,16,07,143.00	
Sub-Total-C:							41,77,19,875.00	
Total (A+B+C)							1,72,49,58,754.00	

10/3

10/3/21

PART-C (Estimate for Club House/Auxiliary buildings)

(1). General Provision:

Total Occupant Load	=	360	persons
Total No of Blocks	=	2	Nos
No of floors	=	3	
Area of auxiliary building	=	4,500	Sqm

(2). Details:

Stair Case

Numbers of staircase in each floor = 1

(i) Size (3.450mx 2.550m)	=	8.80	Sqm
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Circulation area

(i) Circulation Area per house	=	18.06	Sqm
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Balcony

Total auxiliary building area	=	4,500.00	Sqm
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Lift

One passenger Lift @ 13 Pax	=	9.20	Sqm
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Shaft area for two lifts	=	4.00	Sqm
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Total Builtup area of block 'E'	=	4,500	Sqm
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Total Builtup area	=	1,42,871	Sqm
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(A+B+C)	=	1,42,871	Sqm
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1 Ground Floor	=	1500	sqm
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2 1st Floor	=	1500	sqm
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4 2nd Floor	=	1500	sqm
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Total Built-up area =	4500	sqm
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Rough Cost Estimate

Sl No.	Item	Quantity	Unit	Rate		Amount		Remarks
A.	<u>Civil Works</u> RCC Framed structure residential Building floor height 3 m.							
	Foundation & Plinth	1500.00	Sqm @	8,928.57	=	Rs	1,33,92,855.00	
	Ground Floor (3.0 m Height)	1500.00	Sqm @	17,589.29	=	Rs	2,63,83,935.00	As per CPWD Plinth Area Rate-
	First Floor (3.0 m Height)	1500.00	Sqm @	17,589.29	=	Rs	2,63,83,935.00	2020
	Second Floor (3.0 m Height)	1500.00	Sqm @	17,589.29	=	Rs	2,63,83,935.00	
		4500.00	Sqm	Sub-Total-A:		A	9,25,44,660.00	
B.	<u>WS & SI Services</u>							
1	Internal and External Water supply	@	10.25%	On 'A'	=	Rs	94,85,828.00	Internal WS & SI 9%+ External WS & SI 1.25%. (As per CPWD Plinth Area Rate-2020)
3	O.H. Water tank	2000.00	LPD	17.86	=	Rs	35,720.00	As per CPWD Plinth Area Rate-2020
				Sub-Total-B:			95,21,548.00	

C.	<u>Electrical Services</u>							
1	Internal electric installations all floors	@	12.5%	On 'A'	=	Rs	1,15,68,083.00	
2	External electric installation	@	3.75%	On 'A'	=	Rs	34,70,424.75	
3	CCTV	2700.00	Sqm @	178.57	=	Rs	4,82,139.00	
4	Power wiring and installation in all dwelling units in all floors.	@	4.0%	On 'A'	=	Rs	37,01,786.40	
5	Centralized intercom system	@	1.0%	On 'A'	=	Rs	9,25,446.60	
6	Passenger Elevators (2 No.) 13 pax.	2.00	Nos @	16,07,142.86	=	Rs	32,14,286.00	
7	Fire fighting without wet riser and manual fire alarm as per N.B.C.guidelines	4500.00	Sqm @	937.50	=	Rs	42,18,750.00	As per CPWD Plinth Area Rates 2020 &
8	33kV/0.433kV or 11kV/0.433 kV substation for Unit IV	250.00	KVA @	8,035.71	=	Rs	20,08,929.00	Guidelines for Substation & Power Distribution Systems of Buildings 2020.
9	Supplying, installation, testing and commissioning of Silent Type DG Sets,AMF Panel, Bus Ducting/ Cables from DG Sets to Essential Panel, Synchronizing Panel where required, DG Set enclosure room sound insulation/ventilation/smoke exhaust as required, Earthing of DG Set system, control cabling, Fuel tank/piping, DG set Exhaust piping/ Exhaust Chimney as per CPCB norms, Civil works connected with DG Sets including Foundation as required.	100.00	KVA @	9,821.43	=	Rs	9,82,143.00	
10	Supplying, installation, testing and commissioning of online 3 phase UPS System with 30 minutes back up including batteries, interconnecting cables, battery racks etc.	50.00	KVA @	17,857.14	=	Rs	8,92,857.00	
11	Supplying, installation, testing and commissioning of Grid interactive roof top solar photo voltaic power generation system including space frame	10.00	kWp @	58035.71	=	Rs	5,80,357.00	As per CPWD Plinth Area Rate-2020
					Sub-Total-C:		3,20,45,202.00	
				Total(A+B+C)	=	Rs	13,41,11,410.00	

D. Miscellaneous Works							
1	Internal roads & paths with cement concrete pavement with vacume dewatered concrete	71467.55	Sqm @	1,964.29	=	Rs	14,03,82,989.00
2	Trenches for services	927.00	Rm @	5,535.71	=	Rs	51,31,603.00
3	Storm water drain	3000.00	Rm @	7,678.57	=	Rs	2,30,35,714.00
4	Rainwater Harvesting(Equivalent length)	9499.50	Rm @	2,946.43	=	Rs	2,79,89,598.00
5	Footpath with PCC base, 60 mm thick paver blocks and kerb stone edging on one side	6000.00	Sqm @	2,321.43	=	Rs	1,39,28,571.00
6	Boundary wall with 1.5 m, normal height from GL & 6.0m high MS grill, and required no of steel gates/wicket gates etc with load bearing brick wall and plastering on either side and with/without intermediate columns and plinth beams.	1663.94	Rm @	7,678.57	=	Rs	1,27,76,680.00
7	Horticulture operations including 30 cm earth filling, grassing, tree plantations/shrubs and potted plants etc.	71467.55	Sqm @	223.21	=	Rs	1,59,52,578.00
8	Providing and fixing of customized Aluminium formwork for monolithic construction RCC members with a repetitive usage of 100 times using grade 5052 aluminium for panel sheets of minimum 4 mm thick and grade 6061 (Type-6) aluminium for extruded sections. The form work includes of beam components i.e. beam side panel, prop head for soffit beam, beams soffit panel, beam soffit bulk head and deck components i.e. deck panel, deck prop, prop length, deck mid, soffit length, deck beam bar and wall components i.e. wall panel, rocker, kiker and internal soffit corner, external soffit corner, external corner, internal corner etc., The panels are held in position by a simple	138371.00	Sqm @	133.44	=	Rs	1,84,63,880.00
9	Street Light	130205.00	Sqm @	133.93	=	Rs	1,74,38,169.64
					Sub-Total-D:		27,50,99,782.64
					Total(A+B+C+D)		40,92,11,192.64

As per CPWD
Plinth Area Rate-
2020

E.	<u>Pre - Construction activities</u>							
1	(a) Survey & Geotechnical Investigation		L.S	2000000.00	=	Rs	20,00,000.00	
2	(b) Preparation of Concept plan,design and wide publication		L.S	4000000.00	=	Rs	40,00,000.00	
3	(c) Ceremonial Expences (Foundation stone/ Inauguration)		L.S	4000000.00	=	Rs	40,00,000.00	
4	(d) Utility shifting		L.S	5000000.00	=	Rs	50,00,000.00	
						Sub Total -E:	1,50,00,000.00	

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~~10/3/21~~

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~~10/3/21~~

TYPE-VI TYPICAL FLOOR PLAN



TYPE-VII TYPICAL FLOOR PLAN

