Sanitary Plumbing, Firefighting and Security Services

S.NO.	ITEM DESCRIPTION	CHECK LIST	Provisions made in the project
A) Sanitary/Plumbing details			
1.0	**Water Supply Arrangemnts**		
		a) Source of Water Supply	Municipal Water & Recycled water from STP
		b) Details of Water Storage Tanks	
		• Under Ground Tank Details	Raw 40KL, Fire 300KL, Filtered water 40KL, Recycled water 60KL, Soft water 60KL
		• Over Head Tank Details	Fire 20KL, Filtered water 12.5KL, Soft water 15KL, Flushing water 10KL
		c) Configurations of Water Storage Tanks	Fire+Raw+Filtered water, Recycled+Soft water
		d) Water Supply Pipe Material	uPVC & cPVC
		e) Water consumption charges to the tenants	Charges on per liter basis
2.0	Plumbing Plant Room	a) Details of Water Transfer Pumps:	**Make - Xylem**
		i) for Domestic Water Supply	Capacity-20 cum/hr Head-75M, Qty-02 Nos. (1W + 1Standby), Dual electrical supply
		ii) for Flushing Water Supply	Capacity-20 cum/hr Head-75M, Qty-02 Nos. (1W + 1Standby), Dual electrical supply
		iii) for Soft Water Supply	Capacity-20 cum/hr Head-75M, Qty-02 Nos. (1W + 1Standby), Dual electrical supply
		iv) for R.O Water Supply	Capacity - 9000 LPH - 01 set (for HVAC purpose)
		b) Details of Automation of Water Transfer pumps for Tank filling at terrace level and Water Supply to Under Ground Tanks	At terrace - Water level controller & motorised valve UG tank - No automation (For municipal water)
		c) Details and Capacity of Water Treatment Plant i) Details of Filter Feed Pumps i) Filter Size and Nos Ii) Softner Size and Nos	 Capacity: 20 cum/hr x 1 Nos Filter size-Dia-1200mm Softner size-Dia.-1200mm
		d) R.O Plant details existing in pump room	**Make-(Thermax)** Capacity - 9000 LPH - 01 set(for HVAC purpose)
3.0	SEWAGE TREATMENT PLANT	a) Make & Capacity of STP	**Make – Purlieus** Capacity - 90 KLD
		b) Details of Technology of STP	MBBR
		c) Details of STP components	Air blower, Filter, Filter press
		d) Details of Recycled Water Storage Tanks	60 KL

		e) Details of Recycled Water Supply System from STP	Through Pump
4	Plumbing details	a) Dual Plumbing System	Dual plumbing system for toilets and irrigation
		b) Internal Plumbing/Drainage/Water Supply Details	Internal plumbing drawings /details available
		c) Pipe Material Details	Cold water – uPVC SCH-40, Hot water- cPVC & drainage- Hubless CI pipes
		d) Additional wet area (like pantry/toilet) in the Tenant Area	Provision for additional wet areas has been earmarked on the drawing. Maintenance of the same shall be in the scope of the tenant
5	Passenger Lift Specifications and Make	No. of Elevators Capacity of the elevator Speed Floors & Opening Door Opening Size & type Car Internal Size	**Make - Mitsubishi** 4 (with Emergency Landing Device/ARD) 15 persons 1.75m/s 11 900 mm x 2100 mm height W - 1600mm, D – 1500 mm, H -2300 mm
6	Service Lift Specifications and Make	No. of Elevators Capacity of the elevator Speed Floors & Opening Door Opening Size & type Car Internal Size	1 (with Emergency Landing Device/ARD) 13 persons 1.75 m/s 12 900 mm x 2100 mm height W - 1100mm, D -2000 mm, H- 2300 mm
B) Fire Fighting System:			
1.0	Sprinkler System	a) Details of sprinkler system	Single layer inside the Tenant's premises shall be provided as per NBC 2016
		b) Details of Sprinkler Zoning?	Available
		c) Details of Fire Alarm System in case of Fire?	**Make – Honeywell/Siemens** Addressable System
		d) Provision of one layer of sprinkler	Provisioned
		e) Details of Sprinkler Tap offs for Tenant	Tap Off is provisioned
		f) Details of Sprinkler System draining arrangement	Available through the Fire shaft
		g) Availability of control valve & flow switch provided at tap off point.	Provisioned inside the shaft
2.0	Hydrant System		

		a) Spacing for Internal Hydrant and numbers each floor	As per NBC 2016
		b) FHC will be equipped with the following.	
		i) MS Drum with 30 m long emergency hose reel with nozzle	Provisioned
		ii) Landing Valve	Provisioned
		iii) RRL hoses	Provisioned
		iv) Branch Pipe	Provisioned
		v) Pressure Gauge	Provisioned
3.0	Fire Fighting Pump Room	a) Under Ground & Overhead	300KL (U.G.TANK) & 20KL (OHT)
		b) Fire Fighting Pump details	**Make – Mather & platt**
		• Hydrant Pumps details	One number Hydrant & One number Sprinkler Pump 2850 LPM, 105M head
		• Diesel Standby Pump details	One number 2850LPM, 105M head
		• Water Curtain Pump details	One number 1620LPM, 50M Head
		• Jockey pump details	Two numbers 180LPM, 105M head
		c) Fire Pumps - Electric Panel Details	Main Incomer will be 600Amp
		d) Maximum Height of Building?	41.5M
C) Security Services			
1.0	Electronic Security System	a) Electronic physical access control	Turnstilles & Boom Barriers
		b) Video surveillance (CCTV, CCVS) (cameras, control and monitoring equipment, video footage recording equipment	CCTV Cameras in the common areas at appropriate locations
		c) Monitoring of Security Systems	Video surveillance systems are being monitored by Facility/Security Staff on site in real-time.
		d) Back up support for security and life safety systems	Yes, all security systems are powered by UPS with sufficient battery backup & DG

HVAC System

S. No.	Description	Provisions
1	Type of Airconditioning	**Chiller Make - TRANE** Centralised Air conditioning with Water Cooled Chillers (With part standby). 310 TR Screw Chillers with VFD x 2 Nos
2	Quality of chilled water at Air Handling Units	Pressure- to Suit Temperature- 44 F to 50 F (based on ambient conditions)
3	Provision of Winter heating	Provision for Hot water generator
4	Indooor design conditions	Summer Temperature: 24 degrees C ± 1 RH not exceeding 65% in all areas Winter Temperature: 20 degrees C ± 1 RH not applicable
	a.Air Handling Capacity in CFM	**Make – System Air,** Configuration G4+F7 merve filter, 6 row cooling coil, Plug Fan with VFD. Typical floor: 12000 cfm X 2 Nos
	b. Whether AHUs are in Single skin or double skin construction.	Double skin
	c. Refrigeration load associated with each air handler.	As per design
	d. Static pressure provisions in mm WG.	Maximum TSP 60mm WG.
	e. Motor rating in KW	7.5 KW for 12000 cfm
	f. Fan model and outlet velocity in MPS.	Plug Fan
	g. Cooling coil rows deep.	6 rows
	h. Provisions in terms of inclusion of VFDs	VFD installed on all Floor mounted AHUS
	i. Provisions in terms of inclusion of Fire dampers	Yes
	j. Acoustic Lining of AHU Rooms Provided?	Yes
5	Type of provisions made for fresh air intake in each AHU Room. Whether HRW or TFA units have been provided or not.	Filterered Fresh air fan will be installed and fresh air distributed through duct in each AHU room.
6	Whether chilled water shall be	Yes

	made available on 24x7 basis	
7	BMS/IBMS system	IBMS
8	Details of LEED certification along with the rating.	**The Building is " IGBC Pre-certified Gold"**
9	• Glazing details on external Facade	
	a. Double or Single	DGU on all sides
	b. 'U' value in Watts	1.114 W/sq mtK
	c. Solar Factor	0.1781
10	Details of overdeck thermal insulation provided for exposed roof:	
	i. Type of material.	XPS 50 mm
	ii. "K" Value.	U value-0.07 BTU/hr sqft deg F
	iii. Thickness.	50mm
11	Cooling Tower	**Make – Bell,** Induced draught CTI Certified Cooling Tower 5 degree F approach X 3 Nos

Electrical System

S. No.	Description	Provisions
1	Electrical load for the complete complex.	2000 KVA (Total building sanctioned load is 2500 Kva) on 11 KV through independent feeder. Dual supply circuit from substation to the premises.
2	DG Supply Backup deatails	**Make – Cummins,** 100% power back up with N+1 redundancy. DG Sets 1500 KVA -1 Nos & 1010KVA- 1 Nos
	Capacity of the underground Diesel Storage Tank and for how many hours can it runs the building on full load.	20,000 ltr – can run for 48 hours
3	Rating of tap off on each floor and the Electrical load available on the tap off	400A + 125A (Two Nos for each floor)
4	Location for the Earth pits	Stilt floor green area
5	Location of Electrical Room/Shafts	In basement

6	Location of LV Shaft	2 separate physical routes available
7	AHUs power supply	AHU power will be drawn from the Tenant premises
8	Power factor correction	Will maintain upto 0.99
9	Lightning protection in the building	Lightning protection as per IEC 62305
10	Transformers and Voltage Stabilisation of the Grid supply and its range	Make – Kanohar Electrical Ltd. 2 MVA x 2 Nos with +10% to -22% voltage stabilization through OLTC and RTCC
11	Protection against Transient Voltages, surges, spikes, phase reversal and Lightning surges in the Main Power Panel and the scheme to take care of the same.	As a part of the Electric design, available
12	Redundancy in the Rising Mains supply	Two separate rising mains for redundancy
13	Energy billing	Based on dual reading meter
14	Location of the HT, Transformers, DG sets and the Main Power Panel	Ground floor (in Set back area)
16	Emergency lighting in all the common areas.	Available
17	Scheme for the Fire Alarm and Detection system.	Addressable Fire Alarm System in the Common Areas
18	Scheme for the Public Address and Voice Evacuation system.	PA system with Microphone available.
19	DG exhaust pipes	As per the Pollution norms. Above the terrace

Structural details

S NO	Description	Provisions
1	Grid Size	8.1 M * 8.1 M
2	Floor finish available	Maximum 75mm
3	Floor loading allowed Kgs / Sqm	500 Kg/Sq.m Strengthening for UPS/server area- 750 Kg/Sq.m as indicated in the floor plan
4	Usage of LED lights in all common space?	LED lights proposed
5	Earth quake Seismic zone compliant structure	Seismic Zone-IV,Earthquake resistant design
6	Floor to ceiling height in the building	3975 mm (floor to bottom of slab) 3775 mm (floor to bottom of beam)
7	Fire staircases in the building	2 staircases in the tower as per NBC 2016 norm

8	Details of the refuge areas in the building	6th floor
9	Green Building Certification.	Platinum precertified Green building. Energy savings to the range of 30 - 40%,Water savings to the range 20 - 30% Enhanced indoor air quality, Good day lighting,Health & wellbeing of the occupants
10	Approvals obtained	• Environmental Clearance from State Level Impact Assesment Authority,UP • Consent to Establish from UP Pollution Control Board,Lucknow • NOC from Dy.Director,Fire Service,Meerut • NOC for height clearance from Airport Authority of India,Northern Region,New Delhi • Building Plan Approval from Noida Authority