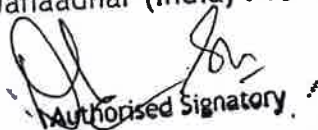


Construction of 90 Dwelling Units of Affordable Housing in GIFT City

Section-4

Technical Specification

For Janaadhar (India) Pvt. Ltd.


Authorised Signatory

CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS







Construction of 90 Dwelling Units of Affordable Housing in GIFT City

Section-4 Technical Specification

1. Broad Scope of Works

The Contractor shall be responsible for design (architectural and engineering including structural, parking, MEP, ICT etc.), obtaining necessary approvals, financing, procurement, and construction, installation of equipments, and operation and maintenance of the Project. The Contractor shall ensure adequacy, safety, constructability and maintainability of the Project while designing and implementing the Project.

2. The development of Project Components includes the following:

- **Affordable Housing buildings**

- The Contractor is required to develop the following Affordable Housing buildings component:

2	Floors in each Affordable Housing building	Ground + 3
3	Total number of Dwelling Units	90
4	Minimum Carpet Area per Dwelling Unit	32 sq.m.

1. The broad minimum technical specifications and standards for development of the Project are provided in the table below.

S. No.	Broad Minimum Technical Specifications
A	Steel Reinforcement for RCC works
	Reinforcement to be of High Yield Strength Deformed bars of grade Fe 500 confirming to IS 1786, including tying with 16 gauge galvanised binding wire, tested steel reinforcement for all reinforced concrete works (make SAIL / TATA / VIZAG or equivalent). For Janaadhar (India) Pvt. Ltd.

CONTRACTOR **Authorised Signatory**

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



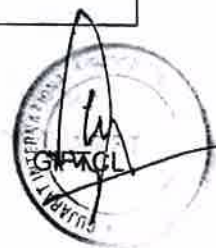
Construction of 90 Dwelling Units of Affordable Housing in GIFT City

B	Masonry and Internal & External Plastering
	All external walls to be 230 mm thick with First Class Brick masonry with conventional/ I.S. type bricks
	All internal walls to be 115 mm thick with First Class Brick masonry with conventional/ I.S. type bricks
	20 mm thick external sand faced plaster in cement mortar in two coats (first layer of 12 - 14mm thickness in 1:4 and the second layer of 6 - 8mm thickness in 1:5) on all types of external surfaces at all leads and lifts
	12mm thick Plaster on internal surfaces in cement mortar 1:5, finished smooth on all surfaces including ceiling
C	Paving
	60mm thick factory made hydraulically pressed with strong vibratory compaction Cement Concrete interlocking paver blocks of M-40 grade of approved size, shape, required colour and pattern over 50 mm thk. Sand bedding properly compacted with mechanical compactor, including filling the joints with fine sand, etc. complete
D	Flooring
	Polished Kota Stone flooring 25 mm to 30 mm thick in passages, staircases and wash areas of approved colour, shade and finish.
	Polished Kota Stone skirting 75 mm high 10mm to 12mm thick in passages, staircases and wash areas of approved colour, shade and finish.
	Vitrified tile flooring (of size 600 mm by 600 mm / 605 mm by 605 mm) 10 mm thk. of approved colour, design, shade, pattern and finish over 35 to 40 mm thk. Cement mortar bedding (1 : 4) in all rooms and kitchen, including pointing, curing, cleaning, etc. (make Asian or equivalent)

for Janaadhar (India) Pvt. Ltd.


Authorised Signatory
CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

	Vitrified tile skirting 75 mm high in 1 : 3 cement mortar backing and Ceramic tile Dado of 10 mm thick up to lintel level in bathrooms and kitchen in 1 : 4 cement mortar backing of approved colour, shade, design, finish and pattern, including pointing, curing, cleaning, etc. (make Asian or equivalent)
E	Doors and windows
	35 mm thick flush door shutters having solid core of block board construction (waterproof quality), in single or multiple shutters with Door Frame of First class Red Meranti wood of approved quality, including all SS hardware like but not limited to hinges, tower bolts, handles, aldrops, etc., with two coats of approved Synthetic Enamel Paint over a coat of wood primer on both the faces of the door shutters and all around the door frames. (Hardware make Enox / Godrej or equivalent)
	Aluminium windows, ventilators, glazing with extruded aluminium sections and profiles; of minimum section of 20 mm size, including mullions, transoms, shutter frames, architraves, beading, wool pile, EPDM gaskets, heavy duty stainless steel friction hinges and heavy duty sliding gear, including cleats, screws, corner stiffening pieces, extra members for increasing wall thickness for fixing screws, including anodising of 15 to 20 micron thk. (make Jindal or equivalent)
	Sliding / openable windows with 5 mm thick clear float glass
	Ventilators with 4 mm thick milky opaque glass
	MS Safety grill for windows and ventilators ; of approved design, in 10 mm square MS bars at a spacing of not more than 150 mm centre to centre, with a coat of zinc chromate primer and two coats of Synthetic Enamel paint of approved amke, colour, finish, etc.
	RCC pardi in staircases
F	Kitchen

For Janaadhar (India) Pvt. Ltd.


 Authorised Signatory
 CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

	Providing and fixing in position straight / L / U shaped platform up to 600 mm deep and 800 mm high consisting of 50 mm thick sandwiched cudappah verticals spaced at maximum 1200 mm c/c, jet black granite top with Stainless Steel sink (make Nirali or equivalent) of minimum overall size of 410 mm x 410 mm and bowl size of 14"x 14"x 8".
G	Paint
	Two coats of Water proof Cement Paint over one coat of cement primer on all exterior surfaces (make Asian, Snowcem or equivalent)
	Two coats of oil bound distemper to internal walls and ceiling (make Asian / Nerolac / ICI or equivalent)
H	Sanitary fixtures and fittings
	White Vitreous Anglo-Indian pattern W.C. pan (make Cera or equivalent) with plastic seat and cover , with jet spray , 3 / 6 litres dual type flushing cistern with push button , etc. complete .
	White vitreous china Wash Basin (make Cera or equivalent) with 15 mm C.P. brass pillar cock , angular cock, flexible pipe for water supply, waste coupling , bottle trap, CI bracket for fixing to wall, etc. complete
	All sanitary fixtures of ESS-ESS make or equivalent
	uPVC soil, waste and vent pipes (SWR) Type B with cement solvent jointing system for internal drainage and fittings. All pipes in the plumbing ducts to be installed on projected clamps , including testing and commissioning the system .
	Chlorinated Polyvinyl Chloride pipes (CPVC) up to 50mm dia SDR.11, ASTM CTS, and above 50mm dia CPVC schedule 40 ASTM IPS. Fittings up to 50mm dia SDR.11, ASTM CTS and above 50mm dia CPVC CORZON schedule 40 fittings, including all fittings and specials such as tees, elbows, couplers, bends, enlargers etc., with CPVC brass threaded combination / transition specials such as male adapters, brass threaded female adapters, brass FPT Tee, Brass FPT elbow etc., where connection with metal is to be made including necessary drilling

or Janaschar (India) Pvt. Ltd.

Authorised Signatory

CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

	holes, chasing walls and making the same good in cement mortar 1:1 restore the same original condition neatly as directed by the Engineer . Joints to be made with CPVC solvent cement up to 50mm dia as per ASTM D-2846 and above 50mm dia primer P-70, and solvent conforming to ASTM F-4931 / 724 , testing and commissioning the system .
	Heavy quality (Class C) GI pipes with screwed joints using Teflon tapes including fittings confirming to IS1239 PI & II, Malleable Specials such as tees, elbows, check nuts, unions, flanges, nipples, etc including cutting, threading, fixing in / on walls, ceiling, underfloor, and hessian cloth etc., as per drawing for external water supply and downtakes in the plumbing ducts , including necessary excavation in any type of soil and back filling, etc. if needed , painting the pipes with two coats of approved primer and finishing coat all as per specifications, testing and commissioning the system .
	C.P. Brass heavy quality gratings (3mm thick) for floor drains
	All Provisions for fixtures and fittings to be as per ECBC requirements
I	Electrical
	Concealed copper wiring for electrification (make Finolex or equivalent) with FRLS cables and conduits (make Precision or equivalent)
	Provision of lighting and other electrical equipments to be compliant to applicable codes and BEE ratings
	Switches and electrical fittings make : Anchor or equivalent
	Each Dwelling Unit to have following minimum provisions:
	Living / Dining : TV, telephone, lights, fans, sockets .
	Kitchen: refrigerator, microwave oven, exhaust fan, fan, lights , sockets .
	Bedroom: TV, lights, fan, AC , sockets .
	Bathroom: Geyser, light, exhaust fan , sockets .

For **Janaadhar (India) Pvt. Ltd.**

CONTRACTOR'S SIGNATURE SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

	W.C. : light, exhaust fan
	Balcony: light , sockets .
	Wash Area: washing machine, light , sockets .
	The building common area to have sufficient light points.
	The building external side and common area between buildings to have sufficient light points.
	Provisions for fixtures and fittings as per ECBC requirements
J	ICT
	ICT cables shall be provided in ducts
	OFC/CAT cables for providing ICT connectivity
	Each Dwelling Unit to have following minimum provisions for ICT connectivity – TV, Landline, Internet.
K	Miscellaneous items
	Providing and laying Water Proofing Treatment of terrace slab or chajjas including Brick Bat Coba in all position with an average thickness of 115 mm consisting specialised materials including but not limited to water proofing compound as per the manufacturers' specifications, including all base preparation, lead, lift etc. complete. All as per specifications, design drawings and as directed by Engineer.
	Providing and laying in required positions flooring of broken China Mosaic of approved colour, size and pattern on a bedding of at least 20mm thick 1:4 cement mortar with water proofing compound including neat cement float, giving proper slopes, making of vatas, compacting, curing and finishing the surface, etc. complete for all leads and lifts and as directed by Engineer .

For Janaadhar (India) Pvt. Ltd.


Authorised Signatory
CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

	Providing and filling of sunken portion of bath / WC / kitchen / pantry with 1:3:6 light concrete, using brick bat coba, including base preparation, cement rendering on the prepared RCC / water proofed surface, vata, etc. complete with levelling and dressing the surface after fixing of drainage pipes, fittings, etc by the plumber, roughening the finished surface for taking flooring tiles, etc. complete and as per specification and as directed by Engineer
	Providing water proofing in base slab and side walls of Bathroom and WC including base preparation, filling of joints in masonry or gaps around the concealed plumbing / drainage pipes or fittings, including water proofing compound as per the manufacturers' specifications, levelling, curing, roughening the levelled surface for cladding, etc. complete and as directed by Engineer.
	Providing and laying pre-constructional Anti- Termite treatment as per IS 6313 (Part-II) in foundation and in plinth .

2. The Structural Design requirements to be considered by the Contractor are provided below:

- i. RCC Structures
- ii. The Bidder shall design as per the applicable IS Codes. The design should be adequate, safe, constructable and maintainable.
- iii. Following assumptions shall be considered for the design of the buildings:
 - a) The seismic zone shall be considered as one zone higher than that prescribed in NBC.
 - b) Soil Bearing Capacity – The Bidder / Contractor needs to undertake the soil test independently.
 - c) The structural design shall be in accordance with all applicable IS codes along with NBC including but not limited to the following:

IS: 1893 :2002	IS: 4326:1993	IS: 456 (Part 1):2000	IS:432 (Part 1):1982
IS:432 (Part 2) :1982	IS:13920:1993	IS: 1904: 1986	IS: 2950:1981
IS: 2911: 1979	IS: 10262	SP 16	IS: 800 :2007
IS: 456 (India) Pvt. Ltd	IS 875 part (1 to 6)	IS 3370	IS 2991

For Janaadhar

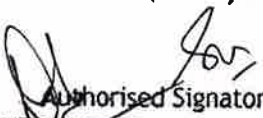
CONTRACTOR AUTHORIZED SIGNATURE SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS



Construction of 90 Dwelling Units of Affordable Housing in GIFT City

3. All items of work shall be executed as per the latest applicable relevant IS Codes and specifications and NBC. Wherever, IS codes are not applicable, the relevant international codes shall be considered.
4. Fly ash as per directives of the Central / State Government to be used wherever applicable.
5. The various codes and specifications shall deem to be bound in this document.
6. When an Amended/Modified/Added clause supersedes a clause or part thereof in the said codes and specifications, then any reference to the superseded clause shall be deemed to refer to the Amended/Modified clause or part thereof.
7. In so far as any Amended/Modified/Added clause may come in conflict or be inconsistent with any of the provisions of the said specifications under reference, the Amended/Modified/Added clause shall always prevail.
8. While carrying out any work the Bidder shall ensure that any requirements specific to the site and similar factors are kept in view.

For Janaadhar (India) Pvt. Ltd.


Authorised Signatory
CONTRACTOR

SECTION 4 SCOPE & TECHNICAL SPECIFICATIONS







