Client : NRK Boitech pvt. ltd. Architect : Arena Consultant Project :23171

					Project .23171	
					REVISEI Date : 01.08.29	
.No	NEXTOPOLIS, HYDERABAD - TENDER STAGE FAÇADE BO Description	OQ Unit	Total Area	Unit Rate	Total Amount	
	Structural Glazed Semi Unitized Glazing / Stick Curtainwall Facade:	Oilit	Total Alea	Offic Rate	Total Amount	
	Structural Glazed Semi Unitized Curtain wall Facade System: Design, Engineer, fabricate, package, deliver (to Job site) and install Semi Unitized Curtain Wall Structural glazed system with Brackets [Curtainwall system only without glass, refer BOQ item A.2,A.3,A4 & A5 for Vision & Spandrel glasses quoted separately].				SCAFFOLDING TO BE PROVIDED TO US FOR OUR WORKS AT SITE	
	The Main Frame and Sub Frame to Designed for Kpa Normal 1.12 and 1.49 Kpa Critical wind loads provide adequate toggle cleats to the subframe based on Glass Panel size as per Structural Adequacy. The glass panels comprising of 24mm DGU with 8mm Vision and 6 \ 8mm for SGU Spandrel Glass are to be glazed to Subframe frame with Double side adhesive foam Spacer tape (Norton / Approved Equivalent) and structural silicone of Dow corning / GE make, wherever applicable with all approved standard accessories and hardwares. The main frame to be designed as Rainscreen with provision of EPDM gaskets having 3 barrier gaskets against air and water leakage.				SHERA BOARD PLANK SUPPLY & INSTALLATION BY OTHERS ONY FRAME WORK BY US	
	The Bracketing at Floor and Ceiling levels to be with Sleeve to accommodate building movements, thermal expansions and the seismic movements. All facade envelope and Interface closures with FR Class A Grade ACP or 2mm Thick SDP Coated Aluminium Sheet No extra claims shall be entertained at any stage for aluminiumIl profile wall thickness / size dimensions / Seals / Trims / Flashing / Smoke & Fire Seal etc once approved by the Architect. The Contractor shall be responsible for the detailed engineering design development and the provision of all plant, labour, material, fabrication, assembly, transportation, installation, coordination with adjacent and abutting construction, and any other endeavour necessary to provide complete curtain wall.				ANY MS WORKS AT SITE SHALL BE EXTRA @ Rs. 75I-l/kg. (All ms, paint & anchors by client)	
	The Scope includes provision of the following in the Semi Unitized Curtainwall System 1. Fixing & Sealing the Curtainwall at the top / sill with Hard primary & Flexi-secondary Seal wherever required. 2. The Semi Unitized Curtainwall to have provision of Expansion Joint at Locations as per drawings - Refer Tender Drawings				All Dead Walls to be painted with Glass Matching color by client	
	(Where applicable) 3. Curtainwall profiles to be designed with edgeguards for the glazed panels perimeter 4. Semi Unitized system to integrate Doors within the system 5. All curtainwall Transom section sizes shall be same as the Mullion section depth. 6. The Aluminium flashing seals at the Building expansion joints interfacing the Curtainwall facade.				All Glasses except visior line including staircase is considered with 8mm Thl Glass	
	7. Operable Vent to have main frame and subframe without aluminium profile being seen from outside. 8. Make provision in the Curtainwall system for the fixation of Facade Lighting. 9. Fixing of vertical/ horizontal flashings/ sealing side wall closure, above Spandrel transom at False ceiling level and wherever required facade envelope closures with FR Grade Class A2 Grade ACP or 1mm Thick SDP Coated Aluminium path electric along the international state of the				Horizontal & Vertical Fir Cap size considered is 62mm X 20mm Acp Band depth to be	
	Smoke & Fire Seal etc once approved by the Architect / Client. The Contractor shall be responsible for the detailed engineering design development and the provision of all plant, labour, material, fabrication, assembly, transportation, installation, coordination with adjacent and abutting construction, and any other endeavour necessary to provide complete curtain wall.				maintained is of 400mm Approx as per site ACP Considered vis of	
	Aluminium: All aluminum extruded profiles shall be confirming to alloy 6063 T6. Where Extruded Aluminium brackets and other Structural elements are proposed they shall be confirming to alloy 6005 T6. Finish: All exposed visible aluminum profiles external and internal areas of the Facade shall be Super Durable powder Coated to 50-60 Microns as per approved shade.				Aludecor / VIVA make	
A.1	Vision Glass - Semi Unitized glazing system shall be designed to accomodate 24mm thick DGU Performance Heat Strengthened glass. Wind Load: The System and glass shall be designed to 1.12 Kpa for Normal areas and 1.49 Kpa Critical areas as per structural adequacy as per IS 875 part 3.	SqM	1500	5,535	8,302,500.0	
	Anchorage: Design to allow absorption of 3 dimensional construction tolerances to maintain set out as per arch dwgs and approved shop drawings. The anchoring / bracing of the curtain wall glazing to the RCC slab / beams / columns shall be done with hot dip galvanized brackets(Galvanizing to be done confirming to IS:4759-1996 up to 610 gms. per sqm. (100-110 micron thickness). of approved design.					
	Brackets: Provided system to be designed to accomodate Floor / Face mounted Brackets to support the Curtainwall Mullion. Bracketing system with MS Hot Dipped Galvanized or Aluminium alloy of alloy 600 5 Te with buit-in Serrations for Fin & Base plates to accommodate the 2-dimensional movements with Serrated plate washers and locking screws with Gl shims and SS 316 grade fasteners / Anchor botts of Hitli / Fischer / Mechanical Bolts Approved equivalent make, nylon separators to prevent bimetallic contacts. Finishes: MS Brackets to be Hot Dip Galvanized Aluminum Brackets to be Chromatized. Gaskets: All the gaskets shall be EPDM or Silicon material, hardness 60-70 from approved extruders. Co-ordination: MEP, civil works for layout marking, facade access & Lighting Provide Gl shims of various thickness to adjust the level / line variations fixed with Anchor fasteners Hiltli/Fischer make as per structural requirement / approval and to withstand the dead load of the curtain walls as well as stresses due to wind pressure and loads due to Facade cleaning/ maintenance. Allow for Diagnostic check for water leakage & Quality Assurance as per AAMA 501.2-03 at 10%, 25%, 50%,75% of installed area in two locations during installation and 2 more locations during Handover. Location: For all the Elevations (GF & 3rd floor)					
A.2	Vision DGU Glass: (Extra Over item: A.1) Type - GL1: - 24mm thick Insulated glass unit comprising of 6mm Thick Heat Strengthned Performance Glass (Approved High performance glass from Saint Gobain) +12mm Airspace + 6mm Clear Toughened glass (Provided Vision DGU glass to match the Technical properties as specified: VLT -35-45%, IR-10-16%, ER-12-20%, SF-0.21 to 0.24, U-value 1.8 to 2.1) Please note that the Glass thickness of the proposed vision glass shall be as per the Structural adequacy. Glass Shade as per Client Slection Locations: North, West & South elevation	SqM	470	3,600	1,692,000.00	
A.3	Vision & Spandrel SGU Glass: (Extra Over item: A.1) Type - GL2: - 8mm thick Monolithic SGU Heat Strengthened Glass - shade to match with the Outerlite of GL1 Vision glass. Please note that the Glass thickness of the proposed vision glass shall be as per the Structural adequacy. Glass Shade as per Client Slection Locations: West & East elevation (Staircase area)	SqM		2,690	-	
A.4	Spandrel SGU Glass: (Extra Over item: A.1) For Chemical Block Only Type - GL2: - 6mm thick Monolithic SGU Heat Strengthened Glass - shade to match with the Outerlite of GL1 Vision glass. Please note that the Glass thickness of the proposed Spandrel glass shall be as per the Structural adequacy. Locations: All Elevations	SqM	70	2,150	150,500.00	
A.5	Vision Spandrel SGU Glass: (Extra Over Item: A.1) Type - GL2: - 8mm thick Monolithic SGU Heat Strengthened Glass - shade to match with the Outerlite of GL1 Vision glass. Please note that the Glass thickness of the proposed Spandrel glass shall be as per the Structural adequacy. Locations: All Elevations	SqM	960	2,645	2,539,200.00	
A.6	Spandrel Insulation and Backpan: Providing & fixing Rock wool insulation of 50mm Thk. (Density: 48 Kg. / M3) insulation of approved sample / make with Double side foam tape on the periphery of GI Backpan & alum, surface of mullion & transom. Backpan of 1.2mm thk. Powder Coated G.I. sheet (One Side PC behind the Glass Face) with stiffeners towards inside of building to control any distortion with all necessary Vent & Drain holes, Insulation holding pins and Bi-metallic separators between GI backpan and Aluminium profile and to provide weather seal to the perimeter of the Spandrel panel backpan.refer Tender drawing	SqM		3,275	DELETED	
A.7	Smoke Seal with compressed Rockwool Insulation: (Extra Over item: A.1) Smoke Seal: Provide & fix rock wool 100mm depth with Intumescent spray/ seal of HILTI / 3M or Approved Equivalent of minimum 3mm thick with Rockwool / Mineral wool compressed to 30-40% compression (Achieving Density: 96 Kg. / M3) Rockwool insulation at the Gap between RCC slab beam and Facade backpan of approved sample / make with 2mm thk. G.I. Z-clips fixed intermittently holding the rockwool in place. The Upperside of the compressed rockwool insulation has to be sealed with 2 hour fire rated Intumescent spray to the structure / rockwool, as specified. Refer concept drawings for details. Quote to include Smoke seal / Firestop width range of 75mm - 125mm	Rmt		2,980	DETELED	
	Galvanized sheet shall be 1.5mm thick with sealed overlaps and interfaces and 2mm below screeding.					

Shamirpet - Hyderabad

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Top Hung Operable Vents: (Extra Over item: A.1)
Design,supply, fabricate, package, deliver (to Job site), install & testing the with all the Top hung operable panel with Heavy duty
Stainless Steel Friction hinges and restricted opening arms and all necessary Multi-point Locking handle based on Windload,
connecting device, Corner transmission locking points, etc., all complete weather tight panel Make Provision & fixed for Anti Fall Connecting device, Corner transmission locking points, etc., all complete weather tight pariel make Provision & fixed for Anti Fail Device.

Note: Alum. Hand Rail to be provided, Shape & Finish will be approved by Architect / Client.

Extra over Item A.1 for Top hung operable panels with concealed extruded aluminium profile frames and shutter panels integrated in the Curtainwall opening with all necessary Glazing and Seal gaskets providing weather tight Vent with Water drain slot holes, Multi-point locking and Approved handles of tested cycles. Provision to be made for Detachable handles and break-operable glass panel shutter as per Fire Safety Norms.

Aluminium: All aluminum extruded profiles shall be confirming to alloy 6063 T6.

Where Extruded Aluminium brackets and other Structural elements are proposed they shall be confirming to alloy 6005 T6.

Finish: All exposed visible aluminium profiles external and internal areas of the Facade shall be Super Durable powder Coated to 50-60 Microns as per approved shade. All invisible aluminium profiles to be Chromatized finish.

Glass Type: (price to be excluded; has considered in BOQ item A.2) profile system to be designed to accomodate 24mm thick Insulated Glass unit structural glazed to the operable shutters with Double side adhesive foam Spacer tape (Norton) and structural silicone of Dow coming / GE make
Hardwares: Friction hinge, 6 / 8 point locking arrangement(Based on Wind Load Calculation) with handle from GIESSE/
Securistyle or approved equivalent make.

All the cost estimation & work execution should be done in accordance with specification manual. 9.450 340,200.00 A.8 Nos 36 Overall size 1200mm (width) X 1440mm (height) - 36 Nos. Horizontal \ Vertical Fins - Extruded Aluminium Pointed Cappings: (Extra Over Item: A.1)

Design, fabricate, package, deliver (to Job site) and install 62mm X 20mm size built-up Extruded Aluminium integrated to the Semi-Unitized glazed panels fixed Horizontally as shown in drawings. Size and thickness of the Capping as specified in the drawings and structurally adequate to withstand the Design wind pressure. The Fins are to be fixed post installation of the Curtainwall glazed facade with pre-installed with supporting plate bracket with all necessary fixing fasteners, gaskets and weather seals complete and fixation to withstand the designed wind pressure and as per structural requirement. Fin Depth: 65mm face Height x 75mm depth seals complete and fixation to wintstand the designed wind pressure and as per structural requirement.

Fin Depth: 65mm face Height x 75mm depth

Note: The Fins to have provision of accomodating any Facade lighting if required.

Location: Refer Typical Curtainwall Facade part elevation Drawings

Aluminium: All aluminum extruded profiles shall be confirming to alloy 6063 T6.

Where Extruded Aluminium brackets and other Structural elements are proposed they shall be confirming to alloy 6005 T6.

Finish: All exposed visible aluminum profiles external and internal areas of the Facade shall be Super Durable powder Coated to 50.60 Micros as net approved shade. Rmt 1352 1.080 1 460 160 00 50-60 Microns as per approved shade Location: All Elevations (1st - Terrace Floors) Frameless Double Leaf Swing Door : Frametess Double Leaf Swing Door: Fabricate, package, deliver (to Job site) and install with 12mm thk. FT Clear Glass Double Leaf Swing Door with Heavy Duty Floor Spring, Pivot Patches, Patching fittings, Handles and Seals from Dorma / Approved Equivalent Mechanism as per Facade drawings. & detailed specifications including erection & removal of scaffolding, cleaning the Facade. The contractor must design the system as per the prevalent site conditions and building elevation profiles. The design to have provision for water drainage. Overall opening size: 2000 x 2400 mm - 01

Glass Type: 12mm Clear Heat Soaked Glass DELETED 1,27,575 Location: North Elevation at Entrance ACP Cladded Projected Band At Typical Floors:

Design, engineer, furnish, fabricate, package, deliver (to Job site) and install in tray form with face sealed sealant 4mm thick Composite Aluminium Cladding Non FR Grade Mineral based polymer core with Aluminium sheet alloy AA 3000 or 5000 series fabricated panels of Approved shade of Metal Cladding with Face sealed joint system with sealants DC 789 grade from Dow corning make or approved equivalent.

The aluminium composite panel cladding sheet shall be coil coated with Kynar 500 based/ hylar 5000 PVDF / Lumiflon / Exterior grade compliance to AAMA2605 based flouropolymer based resin lead free coating of Approved color and shade on face # 1 and polymer (service) coating on face # 2 with overall weight of not less than 5.08 Kg/m². The ACP panels will be mechanically fixed by necessary hardware to Aluminium Vertical & Horizontal secondary framling members.

The cladding system shall be supported by Primary structural steel horizontal & vertical members in accordance with Tender Drawings and Details.

The Facade Contractor to make provision for Integerating any Facade Lighting into the metal cladding system. Cladding sheet: 4mm thick Composite Aluminium Panel Comprising of two skins of 0.50mm thick coil cored aluminium sheets sandwiched with Mineral Filled polymer core of 3mm thick and exterior grade coating of PVDF coil coated aluminium with Exterior Grade compliance to AAMA2605 based fluoropolymer resin lead free coating Paint.

ACP approved manufacturer - Alucobond or Approved equivalent. ACP Sheet Non FR Finish For Aluminium: All concealed aluminum framing profiles shall be clear chromatized. Finish For Structural Steel - Primer with 1(one) coat of Zinc Rich Epoxy 50 Microns, Intermediate: Epoxy Micaceous Iron Oxide 125microns and finished with 1 (one) coat Polyurethane 50microns

Wind Load: The cladding System shall be designed for 1.12Kpa Normal and 1.49 Kpa Critical wind load as per structural adequacy as per IS 875 part 3.

Anchorage: The anchoring / Pracing ACP Cladded Projected Band At Typical Floors: galvanized brackets(calvanizing to be done confirming to IS:4759-1996 up to 610 gms. per sqm. (80-90 micron thickness), or approved design.

Co-ordination: MEP, civil works for layout marking, facade access & Lighting.

Secondary Steel Structure: Where applicable Quote to Include for Secondary steel supports for framing of metal cladding where ever required

Design the system to absorb +/- 50mm host structure tolerances. The anchoring / bracing of the Metal cladding to the RCC slab / beams / columns shall be done with providing non powdering pvc / GI shims. Shims of various thickness to adjust the beam level / line variations fixed with SS fasteners in the concrete and to withstand the dead load of the cladding as well as stresses due to wind pressure etc. All screws used shall be only stainless steel 304 grade. All bolts, nuts and washers used shall be only stainless steel of 316 ACP Cladded Projected Band At Typical Floors:

Design, engineer, furnish, fabricate, package, deliver (to Job site) and install in tray form with face sealed sealant 4mm thick

Composite Aluminium Cladding Non FR Grade Mineral based polymer core with Aluminium sheet alloy AA 3000 or 5000 serie
fabricated panels of Approved shade of Metal Cladding with Face sealed joint system with sealants DC 789 grade from Dow SqM 4,428 4,428,000.00 corning make or approved equivalent. Location: All Elevation at Typical floor (Horizontally & Vertically). Aluminium Vertical Box Louver @ PHE Shaft area fixed in a Staggered pattern with 450 mm open for access DELETED Design, fabricate, package, deliver (to Job site) and install Extruded aluminium louvers fixed to the Building structure as specified in the drawings. The system to have concealed fixing fasteners and brackets to the external elevation. The Vertical box of Extruded aluminium section to support the Louvers of size 100x50x2mm placed at equal spacing of 125mm Centre to centre (as specified in the drawings) centres fixed with concealed brackets at the Ledge slab floor levels. Extruded aluminium Box shape louvers with louver carrier fixed in the aluminium fixed frame window.Refer Louvers part elevation detail drawings. Aluminium: All aluminum extruded profiles shall be confirming to alloy 6063 T6.

Where Extruded Aluminium brackets and other Structural elements are proposed they shall be confirming to alloy 6005 T6. Louver Size: 100mm Depth X 50mm Width and 2mm Thick Spacing as per MEP requirement.

Finish: All exposed visible aluminum profiles external and internal areas of the Facade shall be Super Durable powder Coated to 50.60 Microsy as per approved shade. Rmt. 1120 1,280 50-60 Microns as per approved shade Locations: West & East elevation Typical floors. Box Frame work for Shera Board Planks D Design, fabricate, package, deliver (to Job site) and installation of Aluminium Box frame works of size 25x50x2mm vertically @ grey 500mm Centre to centre to hold the Shera planks of size 160mm x 3050mm fixed by others with all necessary Anchors, U Brackets & Screws. 3,025 SqM 1250 FI ASHINGS Powder coated GI Flashing of upto 150mm L Bend as per site condition around facade perimeter with all necessary screws & E.1 Rmt. 500 325 162.500.00 Powder coated Aluminium Flashing of upto 350mm L Bend as per site condition around Staircase perimeter with all necessary E.2 Rmt. 80 995 79.600.00 screws & fixtures Basic C Total Façade Areas and Total Amount for Aluminium, Glazing & Cladding works Sqm 4,972 19154660.00 INR 3447838.80 GST 18% 22602498.80 Name, Sign & Seal of the Contractor :