SECTION B2000tg – TECHNICAL GUIDE

EXTERIOR ENCLOSURE SYSTEMS

06/02

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION

Provide a masonry, masonry and steel, or reinforced concrete exterior closure systems. Pre-engineered metal building systems are prohibited, unless specifically required in the Request for Proposals.

1.2 SYSTEM REQUIREMENTS

a. Prevention of moisture intrusion and blending with base architecture are prime considerations. Comply with the Base Exterior Architecture Plan (BEAP), a copy of which may be secured from the Contracting Officer.

b. Exterior enclosure system design shall be both compatible with and complementary to the existing facilities located near or adjacent to the project site.

c. Parapets and copings are prohibited; therefore, no portion of the facade shall penetrate or project above the roof surface.

d. The design and construction of the project shall optimize natural daylighting of occupied spaces to the maximum extent possible.

1.3 CRITERIA

a. Design non-load bearing or light gage steel framing systems in accordance with AISI SG-673.

b. Windows and doors shall conform to ANSI/AAMA standards and to the design criteria of ASCE 7-98, "Minimum Design Loads for Building and Other Structures" and/or MIL-HDBK-1002/2, "Loads".

c. Door hardware shall be products meeting the standards of the Builders Hardware Manufacturers Association (BHMA) as approved by the American National Standards Institute (ANSI). Governing standards shall be ANSI/BHMA A156.1 through ANSI/BHMA A156.21.

d. Comply with Uniform Building Code, 1997 edition.

f. Comply with ASCE 7-95, "Minimum Design Loads for Building and Other Structures".

PART 2 - PRODUCTS

2.1 EXTERIOR WALLS (B2010)

2.1.1 Exterior Wall Construction

a. Provide methods of expansion control, reinforcing, and joint sealers installed in accordance with the manufacturer's recommendations. Set finish floor level at least 10 inches (150mm) above adjacent finish grade or impervious surfaces.

1) Acceptable construction includes:

a) Exterior skin, cavity wall, and CMU backup.

b) Exterior skin, air space and sheathing/steel stud/wallboard backup.

c) Other alternative systems that may be described in the Request for Proposals.

2) Exterior bearing walls consisting of metal studs as the primary floor or roof supporting structural element are not permitted.

b. Provide control joints and installation techniques recommended by the manufacturer of the materials and systems utilized in the project.

2.1.2 Exterior Wall Exterior Skin

a. Skin material shall be face brick or concrete masonry units or precast architectural concrete with accents to blend with the existing base architecture and to comply with the Base Exterior Architecture Plan (BEAP). Special patterns, coursing, and/or materials may be used to create a distinctive ground floor facade and residential scale. Where moisture intrusion and moisture damage may occur, use proven techniques for control of moisture intrusion and efflorescence.]

b. Metal panels.

c. Steel wall panels; maximum deflection due to wind on wall panels and girts shall be limited to 1/120 of their respective spans except that when interior finishes are used the maximum allowable deflection shall be limited to 1/180 of their respective spans.

2.1.3 Brick and/or Split Face Brick

Provide nominal standard grade SW, type FBS face brick conforming to ASTM C216. Holes shall not exceed 38mm in diameter and no part of any hole shall be less than 19mm from any edge of the brick. Method C67 test rating shall be "Not effloresced" and rate of absorption shall be a minimum of 6 grams and maximum 20 per minute per 1.9m^2. Use running bond, tooled concave joints and provide full head joint weeps at 61cm o.c. along the base course. Slope rowlocks and project not less than 13mm beyond the face of the wall to form a wash and drip. Provide type S mortar conforming to ASTM C270. Seal expansion/control joints with polyurethane sealant to match color of mortar. Conform to ACI 530.1 for cold weather construction. Clean the brick in accordance with manufacturer's instructions.

Submit at least 4 samples of bricks to match the nearest other adjacent buildings for approval by the ROICC.

2.1.4 Concrete Masonry Units

Provide hollow load-bearing units per ASTM C90, non-load bearing-units per ASTM C129, Type I or II. Provide load-bearing units for exterior walls, foundation walls, load-bearing walls, and shear walls. Seal expansion and control joints with elastomeric sealant to match color of mortar. Clean the block in accordance with manufacturer's instructions.

Submit at least 4 samples of concrete masonry units to match the nearest other adjacent buildings for approval by the ROICC.

2.1.5 Portland Cement Stucco

a. ASTM C 150, gray Portland cement Type II with 1/2 inch (13 mm) chopped alkali resistant fiberglass strands, minimum 1.5 percent by weight to cement; 1 1/2 pounds per sack of cement.

b. Provide acrylic admixture or coating to give additional moisture suppression to control fungus growth.

c. Sand for Portland Cement Stucco ASTM C 144, except gradation of sand shall conform to the following requirements:

Sand Gradation for Basecoats:

Percentage Retained by weight (plus or minus 2 percent) on each sieve

Sieve Size	Min.	Max.
No. 4	0	0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

d. Sand for Finish Coats: Natural color and graded within the limits shown above for basecoats, except that the sand shall pass the No. 8 sieve, and for smooth finish the sand shall pass the No. 30 sieve.

e. Mix scratch coat in proportion of one part by volume Portland cement, 3/4 to 1 1/2 parts by volume hydrated lime and 2 1/2 to 4 parts sand (volume of sand per sum of cement and lime). Mix brown coat in proportion of one part by volume Portland cement, 3/4 to 1 1/2 parts by volume hydrated lime and 3 to 5 parts sand (volume of sand per sum of cement and lime).

f. Mix Portland Cement Stucco Finish Coat 3 to 5 parts sand (volume of sand per sum of cement and lime).

2.1.5 Exterior Railings

Provide non-corrosive metal with factory finish with top and intermediate rails or other features configured to comply with the Building Code.

2.1.6 Exterior Wall Moisture Barrier, Air Space, And Insulation

Use a dew point analysis to show adequate performance of this system. Provide vertical and horizontal perimeter insulation per ASTM C578 or ASTM C591 for rigid board wall insulating products. Wall insulating product shall have a minimum R-value as specified in the Request for Proposals.

2.1.7 Exterior Wall Interior Skin

Use surfacing as described in the Request for Proposals.

2.1.8 Exterior Louvers And Grilles

Provide rainguard and stormproof 2mm thick extruded aluminum in a factory-finished color to match the building façade and trim.

2.1.9 Exterior Soffits, Fascia, And Other Trimwork

Provide coil coated sheet aluminum or primed and painted cementitious hardboard on a metal or wood framing system. Installation shall be crisp, fit and trim with tight joinery. Use adequate backing

material to assure snug joints and even face planes. (Soffit overhangs shall be a minimum of 400mm deep and gable end or rake soffits shall be a minimum of 30mm deep.)

2.2 EXTERIOR EXTRUDED ALUMINUM WINDOWS (B2020)

Provide in compliance with ANSI/AAMA 101 for the glazed windows to meet applicable Building Code. Use double-glazing, insulating frames and low E as required for energy target. Provide jamb support for larger windows where recommended by manufacturer. Exposed aluminum surfaces shall be factory finished with an anodic coating conforming to AA 45 or organic coating conforming to AMMA 603.8/AAMA 605.2. Provide exterior window cleaning bolts.

2.3 EXTERIOR DOORS (B2030)

2.3.1 Personnel Doors

a. Provide extruded aluminum frame full glass doors and frames for pedestrian use and heavy duty insulated steel doors and frames for service access. "Knock down" frames are not permitted. Provide insulating double pane glazing.

b. Hardware shall be compatible with other buildings on base. Use heavy-duty door stop feature to protect doors from wind damage.

c. Weather-protect doors with low infiltration weather stripping and sealants.

d. All exterior door locksets, other than storefront type entrance doors shall be Grade 1, Series 1000, mortise type.

e. Provide a recessed key box approximately 7 inches x 7 inches (18cm x 18cm) with 4 ¾ inch (12mm) solid steel door at primary exterior entry for storage of keys and/or access cards accessible by the fire department.

2.3.2 Overhead Doors

Provide coiling overhead doors with thermal insulated slats, electric operators with 3-button switches, weather-stripping and windlocks. Doors shall be capable of withstanding the design wind loading of ASCE 7-95.

PART 3

Not Used.

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