1 GENERAL

1.1 SECTION INCLUDES

1.1.1. Manufactured Terracotta panel cladding system.

1.1.2. Engineering by Sub-Contractor.

1.2 RELATED REQUIREMENTS

1.2.1. Division 01 - General Requirements

1.2.2. Section 05 40 00 - Cold-Formed Metal Framing: Panel support framing.

1.2.3. Section 07 05 42 - Thermally Improved Cladding Support System

1.2.4. Section 07 21 00 - Thermal Insulation

1.2.5. Section 07 25 00 - Weather Barriers: Weather barrier behind wall panel system.

1.2.6. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashing components integrated with this wall system.

1.2.7. Section 07 92 00 - Exterior Joint Sealants

1.3 REFERENCE STANDARDS

1.3.1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2018.

1.3.2. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile 2021.

1.4 ADMINISTRATIVE REQUIREMENTS

1.4.1 Pre-Installation Meeting: Convene two weeks before starting work of this section to verify project requirements, co-ordinate with installers of other work, establish condition and completeness of building substrate, and review manufacturers' installation instructions and warranty requirements.

1.4.1.1 Require attendance by the installer and relevant sub-contractors.

1.4.1.2. Include Terracotta manufacturer’s representative and wall system manufacturer’s representative to review storage and handling procedures.

1.4.1.3. Review in detail truck transportation, parking, vertical transportation, schedule, personnel, installation of adjacent materials and substrate.

1.4.1.4. Review procedures for protection of work and other construction.

1.5 SUBMITTALS

1.5.1. Submittals in accordance with Section 01 33 00.

1.5.2. LEED submittals in accordance with Section 01 33 29.

1.5.3. LEED Product documentation: submit completed Schedule S1 - Material Information Data Sheet and supporting documentation to verify compliance with LEED objectives and requirements.

1.5.4. Product Data - Terracotta: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:

1.5.4.1. Finish manufacturer's data sheet showing physical and performance characteristics.

1.5.4.2. Storage and handling requirements and recommendations.

1.5.4.3. Fabrication instructions and recommendations.

1.5.5. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:

1.5.5.1. Physical characteristics of components shown on Shop Drawings.

1.5.5.2. Storage and handling requirements and recommendations.

1.5.5.3. Installation instructions and recommendations.

1.5.5.4. Specimen warranty for wall system, as specified.

1.5.6. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, support clips, method of anchorage, exposed fasteners, number of anchors, supports, reinforcement, trim, flashing, and accessories.

1.5.6.1. Differentiate between shop and site fabrication.

1.5.6.2. Indicate substrates and adjacent work with which the wall system must be coordinated.

1.5.6.3. Include large-scale details of anchorages and connecting elements.

1.5.6.4. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1:10.

1.5.6.5. Include design engineer's stamp or seal on Shop Drawings for attachments and anchors.

1.5.7. Verification Samples: For each finish product specified, submit at least three samples, minimum size 305 mm square, and representing actual product in colour and texture.

1.5.8. Testing Agency's Qualification Statement.

1.5.9. Maintenance Data: Care of finishes and warranty requirements.

1.5.10. Schedules from trade contractor’s Engineer:

1.5.10.1. Provide Schedules S-B and S-C to Consultant (CRP –Coordinating Registered Professional)

1.6 QUALITY ASSURANCE

1.6.1. Site Measurements: Verify actual dimensions by site measurement before fabrication; show recorded measurements on Shop Drawings.

1.6.2. Design Engineer's Qualifications: Design structural supports and anchorages under direct supervision of a Structural Engineer experienced in design of this type of work and licensed in the Province in which the Project is located.

1.6.3. Installer Qualifications: Company specializing in performing work of the type specified in this section.

1.6.3.1. With minimum five years of documented experience.

1.6.3.2. Approved Installers:

1.6.3.3. Keith Panel Systems Co. Ltd (www.keithpanel.com)

1.6.3.4. Parker Johnston Industries Ltd (www.parkerjohnston.com)

1.7 MOCK-UP

1.7.1. At commencement of work on site, provide an in-situ mock-up of wall cladding for review.

1.7.1.1. Attendees include: installer, representative of membrane manufacturer, Design-Builder, Consultant, Owner, Building Envelope Consultant and other representatives concerned performance of Work of this Section.

1.7.1.2. Locations:

1.7.1.2.1. Where in conjunction with window openings.

1.7.1.2.2. Parapet conditions.

1.7.1.2.3. Intermediate exterior vertical and horizontal joints for dissimilar cladding or material interface.

1.7.1.2.4. Inside and outside corner conditions.

1.7.1.3. Mock-up may remain as part of completed work..

1.8 DELIVERY, STORAGE, AND HANDLING

1.8.1. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.

1.8.1.1. Package for protection against transportation damage.

1.8.1.2. Provide markings to identify components consistently with Drawings.

1.8.1.3. Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.

1.8.2. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

1.8.2.1. Store in well ventilated space out of direct sunlight.

1.8.2.2. Protect from moisture and condensation with tarpaulins or other suitable weather tight covering installed to provide ventilation.

1.8.2.3. Store at a slope to ensure positive drainage of any accumulated water.

1.8.2.4. Do not store in any enclosed space where ambient temperature can exceed 49 degrees C.

1.8.2.5. Avoid contact with any other materials that might cause staining, denting, or other surface damage.

1.9 WARRANTY

1.9.1. Terracotta Manufacturer’s Material Warranty: 10 years from Date of Substantial Completion.

1.9.2 Installer’s Workmanship Warranty: 2 years from Date of Substantial Completion.

2 PRODUCTS

2.1 LEED REQUIREMENTS

2.1.1. Comply with requirements of Section 01 33 29.

2.2 MANUFACTURERS

2.2.1. CN Terracotta Exterior Cladding, North America.

2.2.1.1.1. Large format Terracotta tiles.

2.2.1.1.1.1 Profile: [see www.cnTerracotta.com]

2.2.1.1.2. Colour: [see www.cnTerracotta.com]

2.2.1.1.3. Size: [see www.cnTerracotta.com]

2.2.1.1.4. Finish: [see www.cnTerracotta.com]

2.2.2. Approved Substitution.

2.3 SYSTEM DESCRIPTION

2.3.1. Manufactured large format Terracotta tiles mechanically fixed with manufacturer's proprietary fastening and mounting system anchored back to base wall system. Building components must be designed to accommodate imposed loads from support system and Terracotta tile, so their deflection under imposed loading will not cause deflection of support system exceeding specified tolerances.

2.3.2. Secondary aluminum support system to include aluminum girt system, carrier tracks with gaskets, and tile clips to support Terracotta clay tiles and drain rainwater.

2.3.3. Provide pressure-equalized rainscreen design.

2.4 PERFORMANCE/DESIGN CRITERIA

2.4.1. Maximum deflection not to exceed L/175 under system’s own weight plus wind load (positive and negative) loads acting normal to the plane; resist 1/30 return wind loading.

2.4.2. Provide for movement of components without causing buckling, failure of joint seals, undue stress on fasteners when subject to seasonal temperature range of 60 degree ambient temperature fluctuations, and wind loads noted above.

2.4.3. Cladding is to be integrated with all components of the building enclosure such as window and door frames, roof, foundation, and service penetrations to provide a weather tight system.

2.4.4. Include expansion joints to accommodate movement in wall system and between wall system and building structure, where these movements are caused by deflection of building structure, and accommodate these movements, without permanent distortion, damage to infills, racking of joints, breakage of seals, or water penetration.

2.4.5. Provide for positive drainage to the exterior of all water entering or condensation occurring within the system.

2.4.6. At connection points of aluminum support framing members to anchors, combined movement of anchor relative to building, and framing member relative to anchor, shall not exceed 0.063 inch in any direction.

2.4.7. Design, fabricate and install system to withstand seismic movements including deflection, temperature change without buckling, distortion, joint failure, or undue stress on system components, anchors, or permanent deformation of any kind.

2.4.8. Terracotta finish to inherently graffiti resistant

2.4.9. Water absorption, freezing and thawing, breaking load, efflorescence: testing to ASTM C67/C67M

2.5 SYSTEM SUPPORT MATERIALS

2.5.1. Extruded aluminum components; mill finish.

2.5.2. Girts and sub-girts: custom manufactured z-girts, galvanized steel to ASTM A653/A653M 18 ga. thickness with minimum G90/Z275 coating.

2.5.3. Cladding support clips: Section 07 05 42 - Thermally Improved Cladding Support System.

2.5.4. Insulation: as specified in Section 07 21 00 - Thermal Insulation.

2.5.5. Air/Vapour Barrier: as specified in Section 07 25 00 - Weather Barrier.

2.6 ACCESSORIES

2.6.1. System Sealants: Sealants within the panel system, as recommended by manufacturer, colour to be selected by Consultant.

2.6.2. Flashing: as specified in Section 07 62 00.

2.6.3. Fasteners: as recommended by manufacturer.

2.6.4. Attachment of panel system to primary panel structural supports: manufacturer’s recommended fasteners.

2.6.5. Typical joinery: concealed, non-corrosive fasteners. When exposed fasteners are required in isolated conditions, fastener shall be obscured in the panel joinery, exposed fasteners shall be ruspert coated corrosion resistant.

3 EXECUTION

3.1 EXAMINATION

3.1.1. Examine dimensions, tolerances, and interfaces with other work.

3.1.2. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturers written instructions.

3.1.3. If substrate preparation is the responsibility of another installer, notify Consultant of unsatisfactory preparation before proceeding.

3.1.4. Notify Consultant in writing of conditions detrimental to proper and timely completion of work, and do not proceed with erection until unsatisfactory conditions have been corrected.

3.2 PREPARATION

3.2.1. Protect adjacent work areas and finish surfaces from damage during installation.

3.2.2. Obtain all dimensions from job site.

3.2.3. Ensure structural support is aligned and condition is acceptable.

3.2.4. Inspect wall system and components before installation and verify that there is no shipping damage.

3.2.5. Do not install damaged panels; repair or replace as required for smooth and consistent finished appearance.

3.3 INSTALLATION

3.3.1. Comply with manufacturer's written instructions and reviewed Shop Drawings

3.3.2. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.

3.3.3. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

3.4 ERECTION TOLERANCES

3.4.1. Installation Tolerances: Align Terracotta clay tile elements within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) at location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.4.2. Ensure assembly is plumb, level and free of warp or twist; maintain dimensional tolerance and alignment with adjacent Work.

3.5 CLEANING

3.5.1. Remove temporary coverings and protection of adjacent work areas.

3.5.2. Clean installed products in accordance with manufacturer's instructions.

3.6 PROTECTION

3.6.1. Protect installed panel system from damage prior to Service Commencement for turnover.

END OF SECTION