1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 UBC Campus Plan: Design Guidelines
.2 Section 03 33 00 Architectural Concrete – for exterior sealer type
.3 Section 04 05 23 Masonry Accessories – for exterior sealer type
.4 Section 07 00 10 Building Envelope – General Requirements
.5 Section 07 21 00 Thermal Insulation
.6 Section 07 40 00 Cladding
.7 Section 08 00 10 Openings - General Requirements
.8 UBC LEED Implementation Guide
.9 UBC Energy Modelling Guidelines
.10 Owner's Project Requirements
.11 UBC Vancouver Campus Plan Design Guidelines
.12 UBC Resilience-Based Design Guide for Nonstructural Systems

1.2 Related External Documents

.1 Latest edition of the British Columbia Building Code (BCBC).

1.3 Description

1. Section includes exterior cladding and all structural support systems.

1.4 Coordination

1. The Guidelines apply to all work completed within buildings on both UBC Vancouver and UBC Okanagan campuses unless stated otherwise.
2. In instances where conflicts are found between these guidelines and provincial regulations or codes, please notify the UBCV Technical Review Team Architect or UBCO Facilities Management.
3. These guidelines are intended to be read by design consultants and their content integrated into construction drawings and specifications. Construction documents are not to reference the technical guidelines directly.

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures

.2 O&M Submittals
  .1 Product specifications, type and colour.
  .2 Environmental Product Declaration (EPD).
  .3 Final reviewed shop drawings (including anchoring system for cladding and all enclosure interface details) sealed and signed by a professional engineer registered in the Province of BC.
  .4 Maintenance data and instructions.
  .5 Warranty information.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 Construct mock-ups of assemblies where necessary to review constructability and architectural finish. Mockups can be undertaken on the building and remain in place if design and performance meet project performance and and design requirements. .
  .2 Submit cladding assembly test results for AAMA 508 Pressure Equalized Rainscreen test.
  .3 Undertake Performance Mock-up Testing, AAMA 501, on custom built cladding assemblies where performance evaluation has not been previously undertaken.
  .4 For renovation projects, a stand-alone mock-up may be desirable to confirm compatibility with existing cladding or exterior finishes.

.2 Quality Control
  .1 Construct mock-ups of all assemblies to check contractor's procedures.
  .2 Manufacturer's representative to undertake field reviews upon request by the Consultant or UBCV Facilities or UBCO Facilities Management. Reviews shall be accompanied by a field report.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 The 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. The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines such as the building envelope, structural, mechanical consultants and energy modeler.
.2 CRP to coordinate with the building envelope, structural, mechanical and electrical consultants and energy modeler on the following:
  .1 Coordinate details of air tightness, drainage, venting, insulation, and cladding of enclosure assemblies.
  .2 Integrate design with design of windows, doors, flashing and other penetrations.
.3 Choice of cladding materials to be reviewed in accordance with the UBC Campus Plan Design Guidelines.
.4 Masonry veneer is one of the recommended cladding types on campus as per the UBC Campus Plan Design Guidelines. Stone or thin brick (20 mm or thinner tile) adhesively bonded to stucco or sheet materials are not to be substituted for masonry
.5 Window and door installations should be designed to allow replacement of the units without dismantling masonry wall assemblies
.6 Provide vented rainscreen systems with minimum 1/2", and preferably 3/4" capillary break and cross-cavity flashings at every second floor minimum.
.7 Provide compartmentalized cavities at least every second floor level, beneath the parapet, and at the outside corners of the building.
.8 Exterior insulated rainscreen cavities should be drained and ventilated to the exterior. Provide insect screen/bug mesh in ventilated cavities.
.9 Exposed wood structures such as glulam elements are to be sufficiently protected with adequate overhead protection and other mitigation measures.
.10 Cladding shall be designed to conform to structural and seismic design requirements

2.2 Performance Requirements

.1 Design service life of claddings to be minimum 75-years as per CSA S478 Section 6.3.5. Design service life of cladding attachment and accessories to match cladding service life.
.2 Cladding shall be designed to resist lateral and vertical deformations of the primary structure without loss of attachment to the building.
.3 Energy targets for new projects and major renovations are developed to reduce UBC's energy use over time and support UBC's Climate Action Plan (CAP 2030). For maximum overall effective thermal transmittance of building assemblies – refer to section 07 21 00, 2.2.
.4 Thermal bridging effects shall be accounted for, evaluated and provided identifying how thermal bridging will be mitigated to meet overall effective thermal performance requirements. Refer to Section 07 21 00, 2.2.4 for techniques to be used.
.5 Cladding shall be designed to be weather tight under sustained conditions of combined wetting and 500 Pa wind pressure.

3.0 MATERIALS

3.1 Product Selection

.1 Identify all materials that form the cladding assembly and closures to adjacent systems.

.2 Cladding material choices should be coordinated with the UBC Campus Plan Design Guidelines that apply to each campus. The following exterior cladding types are considered to have a sufficient design service life and acceptable for use:

- .1 Masonry coated with clear penetrating sealer as per Section 04 05 23.
- .2 Concrete, precast - the recommended approach is to use exterior insulated precast concrete or precast sandwich panels
- .3 Architectural concrete, coated with clear, penetrating sealer as per as per Section 03 00 00 or elastomeric paint with interior insulation under 1:4 overhang ratio.
- .4 Anodized aluminum composite panels, class I or thicker anodizing
- .5 Stainless steel, terne-coated stainless steel or zinc
- .6 Exterior porcelain /ceramic-faced panels
- .7 Terracotta panels
- .8 High density fiber cement boards Grade II, Type A conforming to ASTM C1186.
- .9 Wood siding/cladding but with the following limitations:
  1. Exterior vertical applications of cedar or Accoya wood. All exterior wood cladding applications are to be protected with an adequate-sized canopy or building overhang.
  2. Wood in exterior soffit applications are acceptable.
  3. Specify institutional grade coatings for all wood cladding types.

.3 Wall systems allowed:

- .1 Vented rain screen systems with min 3/4" capillary break and cross cavity flashings at every second floor minimum.
- .2 Unvented mass wall systems with insulation separating exterior wythe and interior moisture barrier or mass wall and vented rain screen joints.
- .3 Coated architectural concrete with interior spray foam insulation, complete with crack control reveals.
- .4 Uncoated architectural concrete with interior cementitious waterproofing (such as a Xypex) and interior spray foam insulation, complete with crack control reveals. Precast concrete panels are preferred instead.

.4 Cladding types not permitted:

- .1 Exposed architectural concrete with interior insulation.
- .2 Exterior Insulation and Finish System (EIFS)
- .3 Stucco

*****END OF SECTION*****