1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Division 03 and relevant TG sections therein
.2 Division 04 and relevant TG sections therein
.3 Division 05 and relevant TG sections therein
.4 Division 06 and relevant TG sections therein
.5 Division 07 and relevant TG sections therein
.6 Division 08 and relevant TG sections therein
.7 Division 09 and relevant sections therein
.8 Section 10 00 10 Special Room Requirements
.9 Section 20 00 05 Mechanical General Requirements
.10 Section 26 05 00 Electrical - General Requirements
.11 Section 27 05 05 Communication Rooms Design Guidelines
.12 Section 27 41 52 Listening Assist Systems
.13 UBC Campus Plan Design Guidelines
.14 Learning Space Design Guidelines
.15 UBC LEED Implementation Guide
.16 UBC Resilience-Based Design Guide for Nonstructural Systems

1.2 Related External Documents

1. Latest edition of the British Columbia Building Code (BCBC).
2. Latest edition of the MPI Architectural Painting Specification Manual.
3. Latest edition of the Tile Installation Manual by the Terrazzo Tile and Marble Association of Canada.

1.3 Description

1. The Guidelines apply to all work completed within buildings on both UBC Vancouver and UBC Okanagan campuses unless stated otherwise.

1.4 Coordination

1. 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.
2. 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.
3. The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

These are requirements specific to UBC that may not exist in codes or other jurisdictions. Any deviations from these guidelines requires a variance to be granted.

2.1 Design Requirements – General

.1 Acoustic Requirements:
  .1 An Acoustical Report is required to be prepared for all core facilities.
  .2 Acoustical Report to coordinate acoustic requirements for learning spaces as per Section 10 00 10 Special Room requirements.

.3 Coordinate wall, floor and ceiling assemblies and finishes with the Acoustical Report for the project.

.2 Environmental Requirements
- .1 Always consider the use of recyclable, recycled, non-toxic, low maintenance and durable finishes.
- .2 Wherever possible utilize water-based, low or non-volatile organic compound (VOC) type adhesives.

.3 Electrical Requirements
- .1 No electrical equipment shall be concealed by architectural finishes, furniture, artwork, bulletin boards or other similar items that would delay identifying their location in an emergency.
- .2 Coordinate with 2.1.11, Section 26 51 00 Interior Building Lighting for decorative lighting requirements.

2.2 Design Requirements - Floors

.1 Wherever possible use low toxicity and/or sustainable materials.
.2 Linoleum flooring to be excluded from washrooms, baths, showers and labs.
.3 Epoxy coatings to be excluded from showers, use slip-resistant tiles (non-glazed finish).
.4 Hardwood Floors - refer to Section 09 64 00 Wood Flooring for finishing standards.
.5 Low Maintenance (non-wax preferred) Commercial Resilient Flooring: to be used in high traffic areas such as building entrances, corridors, hallways, laboratories, classrooms, coffee areas and lunch rooms. Only slip resistant materials should be used in wet areas, especially building entrances.
.6 Ceramic Flooring: Slip-resistant ceramic tiles are to be used in washrooms.
.7 Carpet, (preferably carpet tile), is to be specified for enclosed administration offices, open administration areas, staff conference and meeting rooms.
.8 Carpet, (preferably carpet tile), may be used in lounge areas where food services are not available; otherwise use linoleum flooring wherever possible.
.9 For ease of cleaning linoleum flooring is preferred in undergraduate areas.
.10 In large lecture theatres or other areas where fixed seating occurs, use resilient flooring for ease of maintenance. Consideration must be given to acoustic treatment – refer to the Learning Space Design Guidelines and Section 10 00 10 Special Room Requirements for appropriate material choices.
.11 Exposed concrete in stairs and floors to have a stain resistant sealer.
.12 Seal mechanical, electrical and other service room floors with membrane flooring per Section 09 67 00 Fluid Applied Flooring.
.13 Laboratory Flooring: Heat welded sheet low-maintenance (no-wax) vinyl flooring to be used. Rubber flooring can be used, however the UBC project manager and design team to ensure the user group is made aware that maintenance of this flooring type will be customer-funded. Choice of flooring must reflect slip resistance required for the installation. Confirm with UBC Risk Management Services for any special requirements for laboratories using radioisotopes.

2.3 Floor Cleaning Requirements at Handover

1. Prior to commencing the floor care process, a detailed construction cleanup of the immediate surrounding area must be completed. This includes wiping down of all vertical and horizontal surfaces ensuring all soil and dust is removed. This will help prevent contamination of the finish when applied.
2. If the project is a renovation, the entire room should be emptied of all furniture and other objects. This will allow the service workers the ability to complete the floor care procedures efficiently and safely.

3. The floor surface must be vacuumed thoroughly to ensure all loose soil has been removed.
4. IMPORTANT: These floor cleaning procedures must be followed according to UBC's standards. Nothing less than this standard will be accepted or approved.

2.4 Design Requirements – Walls

.1 For protection of the lower 3' of walls in high traffic areas, chair rails, wall bumpers and corner guards are acceptable in coordination with user group requirements.
.2 Use cement board behind showers or bath tubs.
.3 Common Public Spaces:
  .1 It is recommended that interior colour selections for public space wall areas be neutral colours. This minimizes wastage and storage costs for different colours.Where wood finishes on walls require fire retardant, use only pressure-treated fire retardant, not surface-applied.

2.5 Design Requirements - Ceilings

.1 Ceiling finishes used should be easily accessible and should be such that they can be removed and replaced by service trades and Building Operations crews without damage and without requiring other trades or crews to provide access with special equipment. It should be noted that drop-down tiles with reveal edges are weaker than standard tiles.
.2 Equipment that requires regular servicing or maintenance (i.e. anything with filters such as fancoils) shall not be located above wood ceilings (or other integrated ceiling systems). For example - a vav box with reheat coil can be located above a wood slat ceiling provided that access panels are provided. However, fancoils, terminal heat pumps, etc. shall be located above acoustical tile ceilings or within exposed ceilings only.
.3 Coordinate the provision of access hatches during the design phase for wood ceilings and gypsum wall board ceilings.
.4 Concealed-spline ceilings are not acceptable.
.5 Fire-resistant ceilings that require the use of hold down clips must not be used.

2.6 Performance Requirements – General

.1 Seismic Restraint
  .1 Provide seismic restraint for suspended ceiling finishes and associated light fixtures. Refer to the UBC Resilience-based Design Guide for Nonstructural Components.
  .2 Coordinate structural attachment and seismic restraints for finishes with the specialty structural engineer. Provide signed and sealed shop drawings by a Professional Structural Engineer registered in the province of BC.

3.0 MATERIALS

.1 Refer to individual sections in Division 7.

4.0 LESSONS LEARNED AND COMMON MISSES ON UBC PROJECTS

Items in this section are lessons learned or misses from past projects. These may also include code or industry best practices. If not applicable to a project, a variance is not required.

.1 One major problem with wood ceilings is access for maintenance and repair due to panel size and weight. As the ceiling systems become more complicated, sometimes removing the ceiling is more work than the maintenance itself (especially if the work is just investigation/trouble shooting), especially when multiple BOps trades are required to remove the ceiling for any mechanical/electrical work above the ceiling. With approximate panel dimensions of 2' x 4' or 2' x 6', weight of these panel sizes also needs to be

considered for easy removal. It is strongly recommended to ensure access hatches are provided for and designed into the ceiling system.

.2 Another issue noted from past projects is the effect of temperature and humidity changes on wood wall and ceiling panels. Experience has shown that wood ceilings in particular are sensitive to temperature and humidity changes thereby leading to warping and shrinkage. This has caused serious safety issues with ceiling panels coming loose and falling. Extensive interior wood wall and ceiling finish installations should be reviewed and coordinated with the mechanical consultant.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 03 33 00 Architectural Concrete
.2 Section 06 10 00 Rough Carpentry
.3 Section 07 21 00 Thermal Insulation
.4 Section 07 25 00 Weather Barriers
.5 Section 09 00 10 Finishes – General Requirements
.6 Section 09 22 16 Non-Structural Metal Framing
.7 Section 09 30 00 Tiling
.8 Section 09 90 00 Painting and Coating
.9 UBC Resilience-Based Design Guide for Nonstructural Systems

1.2 Related External Documents

1. Association of Wall and Ceiling Contractors of British Columbia (AWCC) Specifications Standards Manual.
2. Gypsum Association publications - GA-214, latest edition for recommended levels of finish.

1.3 Description

1. All gypsum wallboard work including provision of related accessories.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

2.0 DESIGN & PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Gypsum board shall be with a high percentage of recycled gypsum.
.2 Joint compound shall be low VOC.
.3 Joint tape shall be paper, fiberglass only where recommended by the board or surface treatment manufacturer.
.4 Use water resistant board and other specialty boards only where absolutely necessary as these products are not easily recycled.

2.2 Performance Requirements

.1 Use finishing techniques that reduce the amount of sanding required (i.e. finishing with a wet sponge).
.2 Heat and ventilate area when curing to quickly remove VOC's. Avoid propane heaters due to high moisture generation.

.3 To avoid the absorption of VOC's from other material, store gypsum in a well-ventilated area and apply paint or other surface treatment as soon as possible after installation.

3.0 MATERIALS

3.1 Product Selection

.1 The use of exterior "gypsum board" is not permitted in any long-term installation except at protected locations. Instead, utilize reinforced cement board or gypsum sheathing with a silicone treated gypsum core bonded to inorganic fiberglass mat both sides or, where possible, use plywood.

.2 In wet areas use reinforced cement boards or boards with a silicone treated gypsum core bonded to inorganic fiberglass mat on both sides.

.3 Components

- .1 Gypsum wallboard, ASTM C36 or CSA A82.27-M, standards per AWCC Manual, and as follows:
  - .1 Type shall be regular for vertical surfaces.
  - .2 Typical thickness shall be 5/8" for public areas, 1/2" elsewhere.
  - .3 Type shall be 'X' type where required for fire-resistance-rated assemblies, or 'C' where this type is noted at ULC Designs.
  - .4 Type shall be sag-resistant type for ceiling surfaces.
  - .5 Edges shall be tapered.
- .2 Acoustical sealant for exposed joints shall be manufacturer's standard non-sag, paintable, non-staining latex sealant to ASTM C 834.

.4 Finishes

- .1 As per GA-214 Manual for level of gypsum wallboard finishing.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 07 21 00 Thermal Insulation
.2 Section 09 00 10 Finishes – General Requirements
.3 Section 09 21 16 Gypsum Board Assemblies
.4 UBC Resilience-Based Design Guide for Nonstructural Systems

1.2 Related External Documents

1. AWCC / WCI (Association of Wall and Ceiling Contractors / Wall and Ceiling Institute) Specification Standards Manual 2012 (Fifth Edition).
2. Seismic requirements where stipulated by the latest edition of the British Columbia Building Code (BCBC).

1.3 Description

1. Non-structural steel stud framing.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Quality Control and Assurance

.1 Quality Assurance
  .1 All seismic restraint work including provision of anchoring devices is to be designed and certified by a professional structural engineer registered in the Province of BC.

.2 Submittals
  .1 Shop drawings in O&M manual: required for all seismically restrained engineered studwork, bracing, and suspension systems, including where such systems act as support for work requiring seismic restraints (i.e. laboratory and other cabinets, fume hoods, vending machines, etc.).

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Maximum stud spacing: 16" oc.
.2 Provide allowance for deflection of structure minimum 1".

2.2 Performance Requirements

.1 Life Cycle - 25-Year

3.0 MATERIALS

3.1 Product Selection

.1 Acceptable to UBC:
- .1 Metal channel carriers and stiffeners: thick cold rolled steel, galvanized.
- .2 Acoustical Sealant: meeting CGSB 19-GP-21M.
- .3 Apply a double bead of acoustic sealant 3/8" (10 mm) from each edge, to all partition tracks prior to securing.
- .4 Minimum Metal Stud Gauge:
  - .1 0.46 mm (25 gauge) except as otherwise required.
  - .2 0.88 mm (light duty 20 gauge) at the following locations:
    - .1 Double studs on either side of door frames and header.
    - .2 Studs supporting ceramic tile finishes.
    - .3 Ceiling deflection track.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 09 00 10 Finishes – General Requirements
.2 Section 09 21 16 Gypsum Board Assemblies
.3 Section 09 22 16 Non-Structural Metal Framing

1.2 Related External Documents

1. Latest edition of the Tile Installation Manual produced by the Terrazzo Tile and Marble Association of Canada (TTMAC).

1.3 Description

1. Wall and floor tiling work including related accessories.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures
.2 Provide samples for colour selection only if it is a Construction Office project.
.3 O&M Submittals
  .1 Provide list of tile types and colours used, complete with manufacturer/distributor name for all products used.
  .2 Environmental Product Declaration (EPD)
  .3 Maintenance data for all tile selections.
  .4 Warranties.
  .5 Material Data and Safety Sheets (MSDS).
  .6 Maintenance data including source for replacement.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 Whenever possible, obtain manufacturer extended warranties (Five- Year plus), generally available for larger tiled areas when manufacturer of tile-setting materials and accessories supplies all such materials and carries out inspections of the tile work installation.
.2 Quality Control
  .1 Tile installation shall be in strict accordance with the written instructions and recommendations of the tile manufacturer and related product manufacturers.

2.0 DESIGN AND PERFORMANCE RQUIREMENTS

2.1 Design Requirements

.1 Wall tile shall be glazed finish. Typical dimensions used on UBC's campuses are no larger than 300 mm x 300 mm, no smaller than 100 mm x 100 mm. Consult with the UBCV Facilities Technical Review Team Architect or UBCO Facilities Management if large-format tiles or mosaic tiles are being considered.
.2 Floor tile shall be slip-resistant.
.3 Epoxy grouts introduce environmental risks and their use should be limited to areas that require the extra durability and ease of maintenance that these products offer.
.4 Due to the toxic fungicide additives in mildew resistant sealant, its use should be limited to areas of constant moisture.
.5 Products are to use non-toxic and non-specialized cleaning materials.

2.2 Performance Requirements

.1 All tiles used in wet areas or entry areas to be non-slip with a static coefficient of friction of .60 or higher in accordance with ASTM C1028.
.2 Ceramic tile must conform to the standards for stain resistance, crazing and thermal shock requirements when tested in accordance with CAN2-75.1-M77.
.3 Concrete curing compounds, form oils and sealers may prevent adhesion: ensure proper preparation for tile work.

3.0 MATERIALS

3.1 Product Selection

.1 Wall and Floor Tile:
  .1 Floor tile to be slip resistant, always non-glazed.
  .2 Wall tile shall be glazed finish.
  .3 Refer to 2.1.1 for tile dimensions preferred..
  .4

.2 Divider strips in tile flooring shall be at a sufficient depth, made of zinc alloy, with non-corrosive anchors. Applicable at termination of tile flooring to other flooring finish. Set divider strips at centre of doors with top surface to be flush with finished floor.

.3 Mortar shall be latex additive for thin-set mortar and latex grouts.

.4 Epoxy grouts are required in all shower/change rooms, high traffic, and pools areas generally - confirm with manufacturer for pool water conditions. Other grout types may be required in special installations such as in laboratories and food services areas.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 09 00 10 Finishes – General Requirements
.2 Section 09 21 16 Gypsum Board Assemblies
.3 Section 09 22 16 Non-Structural Metal Framing
.4 Section 09 90 00 Painting and Coating
.5 UBC LEED Implementation Guide
.6 UBC Resilience-Based Design Guide for Nonstructural Systems

1.2 Related External Documents

1. Ceiling installation shall be in accordance with ASTM-C636.
2. Latest edition of the AWCC / WCI (Association of Wall and Ceiling Contractors / Wall and Ceiling Institute) Specification Standards Manual.
3. Seismic requirements stipulated by the latest edition of the British Columbia Building Code (BCBC).
4. Coordination with seismic requirements of other ceiling components such as work in Divisions 20 to 28.
5. Ceiling suspension components shall be in accordance with ASTM-C635, “Intermediate Duty” for typical ceiling lighter weight panels such as mineral fiber panels.
6. Seismic design, components, and installation: in accordance with ASTM-E580, Clause 4 and subsequent clauses.

1.3 Description

1. Acoustical ceiling tiles (ACT) and associated 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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures
.2 Provide samples for colour selection only if it is a Construction Office project.
.3 O&M Submittals
  .1 Provide list of ACT types and colours used, complete with manufacturer/distributor name for all products used.
  .2 Environmental Product Declaration (EPD).
  .3 Maintenance data for all tile selections.
  .4 Warranties.
  .5 Material Data and Safety Sheets (MSDS).
  .6 Maintenance data including source for replacement.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 All seismic restraint work including anchoring systems shall be designed and certified by a Professional Engineer registered in BC and to submit a Letter of Assurance.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Specify ceiling systems that carry some assurance of a future supply of patterns and colours. Local suppliers are preferred.
.2 Fire-resistant ceilings that require the use of hold down clips, and concealed spline systems must not be used at UBC.
.3 T- bar ceilings are required to be seismically reinforced in all new construction and renovations – refer to 1.6.1.1 and the UBC Resilience-Based Design Guide for Nonstructural Components.
.4 Ceiling finishes to have a Flame Spread Rating (FSR) of 0-25 (Class A) and is required for all core facilities. For new buildings or major renewals, FSR to be as per code consultant report.
.5 Ceiling systems should have a high recyclable material content.

2.2 Performance Requirements

.1 Ceiling systems should be easily accessible for any mechanical or electrical servicing required. Ceiling components should be removable and easily replaced by the Building Operations crews or external service trades without damage and without requiring other crews, trades or special equipment.
.2 Ceiling systems shall be ISO 1400 Series Certified.
.3 Connect T-bar to edge molding using pop rivets, matching color of suspension system, as set out for seismic restraint by ASTM Standards and UBC Resilience-based Design Guide for Nonstructural Components. 25-year service life required for ceiling suspension system.

3.0 MATERIALS

3.1 Product Selection

.1 The following are preferred products for use as these are stocked for maintenance at UBC;
  .1 UBC Standard Tile: 24" x 48" x 5/8" Armstrong #769 “Cortega".
  .2 Suspension System: 15/16" exposed Tee, Armstrong "Prelude XL".

.2 For other ceiling systems proposed, criteria for selection should include the following: ease of accessibility for mechanical/ electrical services, availability of future stock for maintenance and repair, durability, high light reflectance where required, high recyclable material content, and acoustical performance criteria as recommended by Project Acoustical Consultant.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 01 74 00 Cleaning and Waste Management for final cleaning and waste management procedures.
.2 Section 03 33 00 Architectural Concrete
.3 Section 10 00 10 Special Room Requirements
.4 UBC LEED Implementation Guide

1.2 Related External Documents

.1 National Floor Covering Association of Canada (NFCA) - Floor Covering Reference Manual.
.2 Hardwood Sports Floor Systems - performance criteria standards and requirements to be coordinated with UBC Athletics and associated user/sports groups.

1.3 Description

.1 Work in this section includes wood flooring and related accessories, and hardwood sports floor 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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures.
.2 Confirm with UBC PM and user group that gym floor markings are to current regulations and meet UBC's requirements.
.3 Provide samples for colour selection only if it is a Construction Office project.
.4 O&M Submittals
    .1 Provide list of wood flooring types, colours and finishes, complete with manufacturer/distributor name for all products used.
    .2 Environmental Product Declaration (EPD)
    .3 Maintenance data for all tile selections.
    .4 Warranties as per 1.6.3.
    .5 Material Data and Safety Sheets (MSDS).
    .6 Maintenance data including source for replacement.
    .7 Material Data and Safety Sheets.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 Trade to have recognized specialized experience, and have successfully completed 5 similar wood floor and/or sports floor system installations, including sanding and finishing, for 5 years preceding minimum.
.2 Quality Control
  .1 The manufacturer's representative shall inspect the work when required during the contract, and at completion prior to submitting the manufacturer's warranty.
.3 Warranties
  .1 2-year warranty for wood flooring.
  .2 Warranty for sports flooring systems to be as provided by manufacturer.
.4 Handover
  .1 Contractor to conduct a walkthrough prior to handover to UBC Facilities with Facilities Custodial Services. Recommended maintenance procedures and products by manufacturer representative are to be provided in the presence of trade contractor.
  .2 Refer to the CPG-01 located here for additional guidance on setting up demonstrations for UBC Facilities personnel.
  .3 UBC Project Manager must contact the Facilities Custodial Operations Manager prior to occupancy to allow for general cleaning unless work will be carried out by the contractor to Facilities Custodial Services specifications.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 New wood floors (other than sport flooring systems) are to be factory pre-finished, complete with acrylic impregnation of the wood cells to improve indentation and wear resistance. Finish coat to be of extra-hard mineral crystals suspended in multiple coats of ultra-violet cured urethane with stain injected throughout the wear layer, to minimize maintenance requirements.
.2 Hardwood sports flooring systems to be specified as per user group requirements, manufacturer installation and finish requirements.

2.2 Performance Requirements

.1 Longest life finishes to be used. Sufficient ventilation to be provided as per manufacturer's recommendation, including to prevent absorption of off-gassing by other materials.

3.0 MATERIALS

3.1 Product Selection

.1 Finishes
  .1 Sports Floors:
    .1 Sealer shall be two (2) coats water-based or moisture-cured urethanes.
    .2 Line marking paint to be compatible with sealer and top coat.
    .3 Top coat shall be water-based or moisture-cured urethane.
.2 Refinishing of Sports Floors – for renovation projects:
    .1 Follow manufacturer's instructions for re-finishing of sports floors.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 01 74 00 Cleaning and Waste Management for final cleaning and waste management procedures.
.2 Section 03 33 00 Architectural Concrete
.3 Section 10 00 10 Special Room Requirements
.4 UBC LEED Implementation Guide
.5 UBC Learning Space Guidelines

1.2 Related External Documents

1. Latest edition of the British Columbia Building Code (BCBC) for provision of assistive listening devices in classrooms, auditoria and meeting rooms over 100sqm and where such devices are to be installed under new resilient flooring.
2. National Floor Covering Association of Canada (NFCA) - Floor Covering Reference Manual.
3. Applicable product standards including CSA, CGSB and ASTM.

1.3 Description

1. Work in this section includes resilient flooring and bases.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures
.2 Provide samples for colour selection only if it is a Construction Office project.
.3 O&M Submittals
  .1 Provide list of resilient flooring types and colours used, complete with manufacturer/distributor name for all products used.
  .2 Environmental Product Declaration (EPD)
  .3 Maintenance data for all tile selections.
  .4 Warranties as per 1.6.3.
  .5 Material Data and Safety Sheets (MSDS).
  .6 Maintenance data including source for replacement.

1.6 Quality Control and Assurance

.1 Quality Assurance
- .1 Flooring contractor to be a member in good standing with the National Floor Covering Association of Canada (NFCA).
- .2 For sheet material, installer to be a certified manufacturer-trained "Master Mechanic" (or similar term), completely familiar with the products, seam welding, and the manufacturer currently recommended methods and conditions of installation. Submit certificate of qualification. This requirement is for all resilient flooring types used on the project and when available.
- .3 Adhesives and accessories to be as recommended by each resilient flooring manufacturer.
- .4 Flooring contractor to complete a site inspection prior to installation of flooring material.

.2 Quality Control
- .1 Manufacturer preference shall be a registered ISO 9001 quality system.
- .2 Install resilient flooring only when moisture emission from concrete substrate is at or below the maximum permissible level of 8 lbs. of water per 1000 sq.ft., based on qualitative tests using calcium chloride test kits developed by the Resilient Flooring Institute, and to manufacturer's requirements.
- .3 The manufacturer's representative shall inspect the work when required during the contract, and at completion prior to submitting the manufacturer's warranty.

.3 Warranties
- .1 In addition to a 2-year warranty, submit a 5-year manufacturer limited warranty for sheet flooring work.

.4 Handover
- .1 Contractor to conduct a walkthrough prior to handover to UBC Facilities with Facilities Custodial Services. Recommended maintenance procedures and products by manufacturer representative are to be provided in the presence of trade contractor.
- .2 Refer to the CPG-01 located here for additional guidance on setting up demonstrations for UBC Facilities personnel.
- .3 Contractor to protect resilient flooring in doorways with undyed card board or treated paper until floor has been handed over to and accepted by Facilities Custodial Services. UBC Project Manager must contact the Facilities Custodial Operations Manager prior to occupancy to allow for burnishing and finishing plus general cleaning unless work will be carried out by the contractor to Facilities Custodial Services specifications.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Select materials with low-VOC content, including adhesives which preferably should be water-based.
.2 Select products with highest natural material content: Linoleum is the preferred product.
.3 Products should be recyclable.

2.2 Performance Requirements – Not Used

3.0 MATERIALS

3.1 Product Selection

.1 Linoleum with heat-welded seams
- .1 Linoleum is preferable for public corridors, and may be used in lecture theatres and classrooms.
- .2 Install linoleum in teaching labs, maker spaces wherever undergraduates work, (not carpet).
- .3 Do not install on concrete slabs below grade, slabs on grade without a vapor barrier, wet areas such as entrance lobbies, (walk-off mats on troweled concrete is used), in washrooms, and wet laboratory areas (where chemical staining and deterioration under prolonged water saturation will occur).
- .4 Large size linoleum tiles can be used. Their use allows Facilities to maintain the floors, which sheet goods do not.
- .5 All linoleum products to be installed using heat-welded seams.

.2 Sheet Vinyl with heat-welded seams
- .1 Use typically for wet laboratories and wet areas as discussed above; include flash-coved base where cleanliness is critical (toxic or radiation areas: discuss with UBC Risk Management Services).
- .2 Large size vinyl tiles. As with linoleum tiles this product allows Facilities to maintain the floor finish, where sheet goods do not.

.3 Slip-Resistant Sheet Vinyl with Heat-Welded Seams
- .1 Use (include flash-coved base).
- .2 Washrooms and wet areas (as option to ceramic or similar tile), food service areas, janitor rooms, and wet laboratories.

.4 Vinyl Composition Tile (VCT)
- .1 Can only be installed in less-used, low-traffic areas such as storage rooms, electrical rooms, , vaults etc.
- .2 Do not install VCT in well-used public areas, such as classrooms, lecture theatres, and corridors. VCT shrinks over time because the fillers dry the product out.
- .3 VCT does not have the reinforcement strength that the old asbestos filler used to have. This allows water or traffic to release edges causing delamination. In lab areas where hazardous and often heavy materials (gas cylinders) are constantly transported, VC tiles have proved to be potentially dangerous and have caused tipping and tripping hazards. VCT has not proved to be satisfactory under life-cycle analysis.

.5 Rubber Sheet Flooring with Heat-Welded Seams
- .1 Should be slip-resistant and include flash-coved base.
- .2 Acceptable for use in washrooms, exercise rooms and public corridors. In public corridors, ensure the rubber flooring type and colour is suitable for intended use and traffic.
- .3 Acceptable for use in wet laboratories. If using in wet laboratories, all maintenance and replacement will be customer-funded.

.6 Rubber Floor Tile
- .1 Acceptable for use in public corridors and should be slip-resistant. Ensure the rubber floor tile type and colour is suitable for intended use and traffic.
- .2 Can also be installed in less-used, low-traffic areas such as storage rooms. Do not install in custodial rooms or closets.
- .3 Do not install rubber floor tiles in wet laboratories.
- .4 Provide heat-welded seams.

.7 Rubber Cove Base shall typically be 102 mm (4") or 6” high and to match flooring colour as chosen by the architect.

4.0 LESSONS LEARNED AND COMMON MISSES ON UBC PROJECTS

Items in this section are lessons learned or misses from past projects. These may also include code or industry best practices. If not applicable to a project, a variance is not required.

.1 Rubber flooring is acceptable for use in wet labs after the following points have been taken into consideration:

- .1 Due to the nature of a wet lab environment, it should be noted that floor restoration when a chemical burn happens is a fairly intensive process that can take time. Rust stains around the cylinder storage areas or bio-stains have been noted to be easier to clean.
- .2 The installation of rubber flooring means that Custodial Services would need to take on maintenance programs that deviate from the maintenance materials used across the rest of campus already. If proceeding with the use of rubber flooring, any stains requiring cleaning above and beyond our regular maintenance would need to be customer-funded.
- .3 Any repairs resulting from chemical spills or floor cracking (due to liquid nitrogen falling on the floor and freezing the rubber resulting in cracks) will also need to be customer-funded.
- .4 A thicker (5mm) rubber flooring may be used where the use of chemicals such as liquid nitrogen is anticipated

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 01 74 00 Cleaning and Waste Management for final cleaning and waste management procedures.
.2 Section 03 33 00 Architectural Concrete
.3 Section 09 00 10 Finishes – General Requirements
.4 Section 10 00 10 Special Room Requirements
.5 UBC LEED Implementation Guide

1.2 Related External Documents

1. Applicable product standards including CSA, CGSB and ASTM.

1.3 Description

1. Work in this section includes the following:
   .1 Waterproof membrane flooring and seamless cove base in mechanical rooms (see 2.1.1), service penthouses, and similar locations where leaks in building systems may occur and cause water damage, such as to floors below. Chosen system to have been specifically designed for this purpose.
   .2 Epoxy floor coating in main electrical rooms.
   .3 Waterproof traffic coating as corrosion protection for all concrete parking slabs. Chosen system to have been specifically designed for this purpose.

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 UBC Technical Review Team Architect or UBCO Facilities.
.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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines

1.5 Submittals

.1 Submit required documents to consultants in accordance with Section 013300 Submittal Procedures
.2 Provide samples for colour selection only if it is a Construction Office project.
.3 O&M Submittals
   .1 Provide list of floor finish types and colours used, complete with manufacturer/distributor name for all products used.
   .2 Environmental Product Declaration (EPD)
   .3 Maintenance data for all tile selections.
   .4 Warranties.
   .5 Material Data and Safety Sheets (MSDS).
   .6 Maintenance data including source for replacement.

1.6 Quality Control and Assurance

.1 Quality Assurance
   .1 Manufacturer licensed applicator.

.2 Quality Control
.1 Strictly conform to Manufacturer written instructions, including preparation of substrates.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Membrane Flooring for Mechanical Room Floors
.1 Urethane elastomeric solvent-free liquid-applied seamless waterproof flexible flooring. System typically consists of a primer, primary coating, and colored top coat. Minimum 40 mil dry film thickness (DFT).
.2 Provide a seamless cove base trowelled in place, minimum 6" high. Ensure both cove material and flooring system are from the same supplier. Flooring and cove base to be installed as per manufacturer's recommendations.
.2 Membrane Flooring for Main Electrical Room Floors
.1 Water-based epoxy floor coating with slip resistance incorporated into the floor finish such as sand granules or the equivalent.
.3 Pedestrian Traffic Coating
.1 A waterproof traffic coating consisting of a flexible, liquid applied, elastomeric membrane topped with a liquid applied polyurethane wearing course containing hard aggregates and a urethane topcoat.
.2 The system to be totally water-proof, flexible and thermally compatible with the concrete substrate under applicable service conditions. The system to exhibit zero chloride permeability when tested in accordance with the test procedure developed by the Portland Cement Association.
.3 Finished surfaces to be skid resistant, wet or dry.
.4 Vehicular Traffic Coating
.1 Provide traffic coating at exterior concrete slabs at loading bays which are over occupied space below.
.2 A modified polyurethane three-coat traffic deck coating system to be used.
.3 Waterproofing system to have complete adhesion, extreme impact and abrasion resistance along with chemical stability. The elastomeric properties of the system components should enable the complete assembly to give and work with the concrete slab, bridging the shrinkage cracks. Additionally, the system should protect the concrete from the damaging effects of water, de-icing salts, chemicals, gasoline, oils and anti-freeze.

2.2 Performance Requirements

.1 Life Cycle for the flooring systems – 25 years.

3.0 MATERIALS

3.1 Product Selection

.1 Membrane Flooring for Mechanical Room Floors
.1 Acceptable manufacturers are Sika, BASF, and Tremco or approved equivalent.
.2 Membrane Flooring for Main Electrical Room Floors
.1 Acceptable product is Armorseal 8100, satin finish or approved equivalent.
.3 Provide a variance request for review and approval if an equivalent product is approved for use. Variance request to include a comparison of performance characteristics.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 01 74 00 Cleaning and Waste Management for final cleaning and waste management procedures.
.2 Section 03 33 00 Architectural Concrete
.3 Section 09 00 10 Finishes – General Requirements
.4 Section 10 00 10 Special Room Requirements
.5 UBC LEED Implementation Guide
.6 UBC Learning Space Guidelines

1.2 Related External Documents

1. Latest edition of the British Columbia Building Code (BCBC) for provision of assistive listening devices in classrooms, auditoria and meeting rooms over 100sqm and where such devices are to be installed under new carpet flooring.
2. Latest edition of the National Floor Covering Association of Canada (NFCA) - Floor Covering Reference Manual.
3. CCI Canadian Carpet Institute Supplement.
4. CAN/CGSB-4.155: Flammability of Soft Floor Coverings.
5. CAN/ULC-S102.2: Standard Method of Test for Surface Burning.

1.3 Description

.1 Work in this section includes carpet tile, direct glue-down carpet and related accessories.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Before Start of Work (only for Construction Office Projects)
  .1 Manufacturer's product data verifying compliance with specification requirements for carpet types and accessories specified.
  .2 Manufacturer's full range of carpet colors and patterns available for specified carpet types for review and selection.
  .3 Two 400 mm (16”) square samples of each type and of each color of carpet to be used. For carpet with pattern repeat, submit a minimum of three repeats of the pattern.
  .4 Manufacturer’s product data and material / color range of carpet accessories for review and selection.
.2 At Handover
  .1 Manufacturer's maintenance data and cleaning instructions for each type of carpet installed.

.2 Turn over to the UBC Project Manager all carpet pieces remaining at job completion. No carpet scraps shall be removed from the site without the UBC Project Manager's written approval.
.3 Contractor to ensure that carpet installations are protected from traffic damage with suitable covering (such as un-dyed untreated paper) until floor finish has been handed over and accepted by the Facilities Custodial Services Operations Manager. Typically, also provide two large sections of surplus carpet cuttings and place at entry doors so that they can be used as doormats by other trade personnel entering the carpeted area.
.4 Warranties as noted in 1.6.3.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 Conform to NFCA Specification Standards Manual requirements for all products and installation, and all manufacturers' written instructions.
  .2 Flooring contractors to be a member in good standing with the National Floor Covering Association of Canada (NFCA).
  .3 Site inspection required prior to installation of flooring material.
.2 Quality Control
  .1 Hygrometer moisture tests on concrete shall not exceed 65% per CCI Manual, or stricter manufacturer requirements.
  .2 Test new and suspect concrete floors for alkalinity and neutralize in accordance with NFCA/CCI recommendations. When installing carpet flooring on concrete, carpet manufacturer's representative to review carpet seaming and installation to ensure conformance with guarantee requirements and submit a written report to the Consultant and UBC Project Manager confirming same.
.3 Warranties
  .1 In addition to any other required warranties, provide the following written minimum guarantees or warranties to commence at Date of Substantial Performance, and details of guarantees or warranties that exceed noted minimum requirements.
  .2 By Fiber Manufacturer
    .1 Ten (10) year abrasive wear guarantee that carpet fiber will provide specified level of appearance, subject to proper care and maintenance.
    .2 Ten (10) year color fastness to light.
    .3 Ten (10) year color fastness to atmospheric contaminants.
  .3 By Carpet Manufacturer
    .1 Ten (10) year against unraveling, zippering, and delimitation / deterioration of backing not to exclude wet or steam cleaning methods.
  .4 By Carpet Installer
    .1 One (1) year that all seams will remain sound and tight and carpet will not break away from adhesive.
  .5 By Adhesive Manufacturer
    .1 Ten (10) year, including labor and material, against adhesive failure.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Carpet tiles are preferred for their ease of installation and ease of replacement.
.2 Carpet coloration to be such that it requires minimal maintenance and cleaning.
.3 Carpet specified shall be first quality commercial grade carpet for heavy traffic usage as manufactured by a nationally recognized manufacturer.
.4 Cross seams shall be avoided and will only be permitted where made unavoidable by carpet width or roll length. Avoid seams at doors and pivot points.

.5 Flammability as per CAN/ULC-S102.2 shall be Flame Spread Rating of 300; Smoke Developed Classification of 500.
.6 Environmental
  .1 Carpet to be 14001 certified or equal, for recycled content..
  .2 Source
    .1 ISO 9002 quality audit certified.

2.2 Performance Requirements

.1 Indoor Air Quality
  .1 Comply with the UBC LEED Implementation Guidelines for Indoor Air Quality requirements.
.2 Contractor to ensure that glued carpets are protected against damage from rolling loads for 48 hours after installation and protected by covering with plywood or hardboard where rolling traffic will occur (i.e. moving of equipment, etc.).
.3 Soil and stain protection:
  .1 Soil and stain protection shall be an integral lifelong stain proofing, i.e., inherent in or bonded to nylon fiber. Topical treatments are not acceptable.
.4 Static control shall be provided where needed.
.5 Anti-microbial protection shall be permanent treatment to prevent bacteria, fungi and bacteria growth lasting life of carpet. Do not provide topical treatment.
.6 Disposal
  .1 Carpet face must be 100% recyclable.
  .2 Submit manufacturer's recycling program for each carpet type including percentage of recycled content contained in each product.

3.0 MATERIALS

3.1 Product Selection

.1 Carpet construction shall meet the following minimum requirements:
  .1 Construction shall be level loop or textured level loop.
  .2 Dye Method :
    .1 Solution dyed or other method providing permanent stain resistance (i.e., inherent in or bonded to nylon fiber).
  .3 Plies shall be a minimum of 3.
  .4 Pile height shall be 5.0 mm (0.197") maximum; 4.0 mm (0.144") minimum.
  .5 Tuft Bind shall be a minimum12 pounds, wet or dry.
  .6 Gauge shall be minimum 39.4 col/10 cm (1/10") or better (a looser gauge may be allowed if Kilotex rating is sufficiently high).
  .7 Stitch count shall be a minimum 40 / 10 cm (10 per inch).
  .8 Carpet yarn shall be 100% first quality, type 6/6 or 6 bulk continuous filament (BCF) nylon.
  .9 Yarn face weight shall be a minimum 950 gm/m2 (28 oz/sq.yd), or better (a lesser weight may be allowed with a Type 2 or 3 backing system).
  .10 Pile density factor (ASTM D418) shall be a minimum 12 Kilotex/cm2.

.2 Adhesives
  .1 Premium grade, low VOC (solvent-free), waterproof type for direct glue down carpet application as recommended by carpet manufacturer for backing system and substrate / grade level and usage conditions, complete with guarantee against adhesive bond failure. Spread rates stipulated by the manufacturer are to be strictly adhered to.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Division 09 and related sections therein
.2 Related sections in Divisions 22, 23, 25, 26 and 27.

1.2 Related External Documents

.1 Latest edition of the British Columbia Building Code (BCBC).
.2 WorkSafeBC Regulations and Standards.

1.3 Description

.1 Work in this section includes raised access flooring or elevated flooring systems complete with ramps, steps, guardrails and handrails, structural support and lighting as needed.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.

1.5 Submittals

.1 Before Start of Work (only for Construction Office Projects)
  .1 Manufacturer's product data verifying compliance with specification requirements for finish types and accessories specified.
  .2 Manufacturer's full range of finish colors and patterns available and meeting specification requirements for review and selection.
  .3 Provide samples as requested by UBC.
  .4 Manufacturer’s product data and material / color range of carpet accessories for review and selection.

.2 O&M manuals:
  .1 Manufacturer's product data verifying compliance with specification requirements for finish types and accessories specified.
  .2 Finish colors and patterns specified.
  .3 Manufacturer's maintenance data and cleaning instructions for access floor system installed.
  .4 Final reviewed shop drawings signed and sealed by a professional engineer registered in the Province of BC.
  .5 Warranties as per 1.6.2.

1.6 Quality Control and Assurance

.1 Quality Assurance
  .1 Provide signed and sealed shop drawings by a registered professional structural engineer in the Province of British Columbia.
  .2 Contractor to provide demonstration and training of access floor system to UBC Facilities.
.2 Warranties
  .1 Access floor system warranty to be provided as per project specifications.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 Loading capability and floor finish specified should be appropriate for the use of space.
.2 Access floor systems should be designed to evenly disperse the weight of heavy equipment.
.3 Provide steps, ramps, guardrails and handrails as needed.
.4 Provide electrical grounding where required to dissipate static electricity that can lead to damage of sensitive equipment.

2.2 Performance Requirements

.1 Include the engineering and anchoring of all posts.
.2 Provide seismic restraint of components in compliance with the BC Building Code.

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

1.0 GENERAL

1.1 Related Work and UBC Guidelines

.1 Section 01 74 19 Construction Waste Management and Disposal for paint disposal requirements
.2 Section 09 00 10 Finishes – General Requirements
.3 Section 05 00 00 Metals
.4 Section 05 50 00 Metal Fabrications
.5 Section 06 00 10 Wood Structures – General Requirements
.6 Section 27 05 05 Communication Rooms Design Guidelines
.7 UBC LEED Implementation Guide

1.2 Related External Documents

1. Master Painters Institute (MPI) published Manuals as follows:
   .1 MPI Architectural Painting Specification Manual.
   .2 MPI Maintenance Repainting Manual – for existing surfaces.

1.3 Description

1. Work in this section includes exterior and interior painting.

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.
.4 The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.
.5 Coordinate with UBC Facilities Paint Shop for work carried out by UBC's own forces through the UBC Project Manager or Construction Office Project Coordinator.
.6 Coordinate with the UBCV Facilities Technical Review Team Architect for any variance requests.
.7 Coordinate with UBC Information Technology (IT) for access to server rooms. Some server rooms are on a special keying system, and can be high security.

1.5 Submittals

.1 Before Start of Work – for Construction Office projects only
   .1 List of all proposed paint materials for review; color samples for selection; color samples for final approval.
   .2 MSDS Material Data Sheets for review and posting at jobsite.
   .3 Certification reports for Eco-Logo and VOC content.
.2 During Work
   .1 Use MPI Accredited Assurance Association (A.Q.A.) inspector reports, or preferably MPI fully certified Architectural Coatings Inspector.
   .2 Manufacturer Inspectors' reports when required.

.3 O&M manual submittals
- .1 Maintenance data: itemized list c/w manufacturer/distributor name, paint type, color formulation to be provided in the O&M manual.
- .2 Specified paint systems as listed in the project manual and actual paint systems used.
- .3 Warranty as per 1.6.3.

1.6 Quality Control and Assurance

.1 Quality Assurance
- .1 Trade Contractor shall be a member of Master Painters and Decorators Association (MPDA). Refer to www.mpda.net.

- .2 Follow MPI Quality Assurance Program including the MPDA Inspection and Guarantee Program.

.2 Quality Control
- .1 All work to be inspected by an MPI approved/appointed Inspection Agency, acceptable to the Consultant and the MPDA Accredited Assurance Association (A.Q.A.), and paid by the Trade Contractor; MPDA SSI Inspection to be carried out irrespective of type of Guarantee. (Note: on a Consultant-designed project when work of this Section is carried out by UBC's own forces, (generally smaller renovation projects), UBC will arrange and pay for MPI's inspection services only if required).
- .2 When "special" non-MPI products or systems are to be used, the manufacturer to also carry out inspections and certify the work, following the same procedures as set out in the MPI Manual, and paid by the Trade Contractor.
- .3 Inspection to include inspection of surfaces prior to start of work, moisture tests, preparation for painting, primer, completed work, and during and at end of Warranty including expediting correction of defects.

.3 Warranties
- .1 2-Year MPDA Accredited Quality Assurance Association's 2-year guarantee, or a 100% 2-Year maintenance bond issued by a surety licensed in British Columbia warranting also that painting work has been performed to MPI Manual requirements. The A.Q.A. association's guarantee shall NOT exclude any of the work carried out under this section.

2.0 DESIGN AND PERFORMANCE REQUIREMENTS

2.1 Design Requirements

.1 General
- .1 Use products that are listed in MPI Manual Current Approved Product List.
- .2 All paint systems shall be MPI "premium grade" except as noted.

- .3 All products for each paint system applied shall be from same manufacturer for compatibility.
- .4 Primers on steelwork shall provide MPI approved primers suitable for paint systems noted, and suitable for subsequent work carried out by this Section. Coordinate with Sections 05 00 00 Metals and 05 50 00 Metal Fabrications. Materials such as linseed oil, shellac, turpentine, etc. which are not specifically listed by brand name shall use the highest quality product.

.2 Communications cables must not be painted. They must be masked and protected from paint overspray or direct painting.

.3 Wall-mounted plywood back-boards inside all Communications Rooms must be painted. See Section 27 05 05 Communication Rooms Design Guidelines.

.4 Environmental

.1 Source

.1 Preference shall be ISO 9001 2008 registered manufacturers.

.2 Manufacture

.1 Select lowest range VOC products from each MPI product category number listed in the MPI Manual current approved product list, preferably "Three-Tree" and Eco-Logo certified.

2.2 Performance Requirements

.1 Durability

Choose durable paint systems for interior or exterior application uses. Interior applications should consider space usage requirements.

.2 Life Cycle

.1 Exterior paint/coating expectancy shall be minimum 8 years using standard coatings. Life expectancy for High Performance Coatings shall be a minimum 15 years.

.2 Exterior silicate-based paints, especially on cementitious-finished heritage buildings shall be more than 60-year life expectancy.

.3 Interior painting coating life expectancy is 5-10 years.

3.0 MATERIALS

3.1 Product Selection

.1 Materials

.1 Use MPI approved products except where noted.

.2 Use paint with low- VOC emissions, especially where rooms are continuously occupied.

.3 In keeping with 2.2.1.2 above and for low-VOC paint systems, interior alkyd systems can be replaced with a water- based light industrial, high performance architectural latex, or a latex system. These systems would be acceptable for UBC's institutional environment. Specific paint systems should be chosen to reflect the intended use of the space.

.4 Paint shall not contain mercury, lead, hexavalent chromium, or cadmium compounds.

.5 Use alkyd paints only at high impact areas.

.6 Use an alkyd water-based paint for handrails, door frames and doors where hand oils could cause paint breakdown.

.7 Services in mechanical, electrical, and similar service rooms or enclosed spaces, and concealed spaces including equipment, piping, pipe insulation, coils, ductwork, conduit, electrical and control panels, access panels, etc. are NOT to be painted, except for pre-finishing carried out by manufacturers and any make-good work.

.8 Exposed structural steel ready for painting to be shop finished. Detailing of steelwork to be carefully coordinated to minimize field touch-ups.

.9 Paint system in interiors of mechanical rooms when wall assemblies with steel stud and drywall are used: INT 9.2A Latex (over latex primer/sealer) Gloss Level 4/5 (satin/semi-gloss).

.10 Electrical panels, fire hose cabinets, access panels in building interior: these should match the colour of adjoining surfaces except as otherwise required by Building and/or Fire Codes.

.2 Exterior Paint Systems – for new projects, major renewals and renovations where an architect is on board, project specifications are to include the appropriate exterior paint systems. For Construction Office or BOps Architectural projects where an architect is not present, the following paint systems can be used:

.1 EXT 5.1B / Inorganic Zinc Primer + High Performance Acrylic / Gloss / Exposed Structural Steel.

.2 EXT 5.1 C / W.B. Light Industrial Coating / Gloss / Miscellaneous Metal including railings, guardrails, bollards.

.3 EXT 5.1G / Zinc Rich Primer + 2-Component Aliphatic Polyurethane / shop finished exposed structural steel; detailing of steelwork carefully coordinated to minimize fieldwork touch-up.

.4 EXT 5.3 J / W.B. Light Industrial Coating / Gloss / galvanised hollow metal doors and pressed steel frames; roof-top ducting, vents and piping, exterior galvanized metal generally.

.5 Strong consideration should be given to using potassium silicate-based paints on cementitious surfaces. Silicate-based paints must be unaffected by UV, static dirt-repelling, completely breathable,inorganic/sustainable and must bond chemically with the cementitious substrate.

.3 Exterior Renovation Work

.1 Strong consideration should be given to using potassium silicate-based paints on cementitious surfaces. Silicate-based paints must be unaffected by UV, static dirt-repelling, completely breathable, inorganic/sustainable and must bond chemically with the cementitious substrate.

.4 Interior Paint systems - – for new projects, major renewals and renovations where an architect is on board, project specifications are to include the appropriate interior paint systems. For Construction Office or BOps Architectural projects where an architect is not present, the following paint systems can be used:

.1 INT 3.1A / Latex / Custom / Eggshell / Mechanical, Electrical Rooms, and Service Rooms.

.2 INT 3.1C / High Performance Acrylic / Eggshell / typical concrete surfaces.

.3 INT 3.1C / High Performance Acrylic / semi-gloss / concrete in washroom, janitor, and similar rooms.

.4 INT 3.2H / Latex Zone & Traffic Markings / nosing at stairs, conforming to BC Building Code for the visually impaired; other safety markings required by BC Building Code, authorities having jurisdiction and Worksafe BC.

.5 INT 4.2A / Latex / Custom / Eggshell / Mechanical, Electrical rooms, and service rooms.

.6 INT 4.2K / High Performance Acrylic / Eggshell / typical concrete block surfaces.

.7 INT 4.2D / High Performance Acrylic / semi-gloss / concrete block in washroom, janitor and similar rooms.

.8 INT 5.1B / High Performance Acrylic / Gloss / Structural Steel.

.9 INT 5.1E(modified) / W.B. Alkyd / Gloss / Metal Fabrications at contact surfaces such as stairs, railings, trench gratings, trench covers and frames, access doors/panels, elevator doors and frames.

.10 INT 5.3 L (modified) / W.B. Alkyd / Gloss / galvanized hollow metal doors, door and window frames; galvanized metal fabrications.

.11 INT 5.3 H / W.B. Dryfall / flat / steel deck.

.12 INT 6.4 BB / W.B. Alkyd / Gloss / wood trim.

.13 INT 9.2A / Latex / Custom Grade / Eggshell / gypsum board in Mechanical, Electrical Rooms, and service rooms.

.14 INT 9.2B / High Performance Acrylic / Eggshell / typical gypsum board surfaces.

.15 INT 9.2CC / W.B. Alkyd / semi-gloss / gypsum board in washroom, janitor and similar rooms.

.16 INT 9.2A Latex (over latex primer/sealer) Gloss Level 4/5 (satin/semi-gloss) in mechanical rooms.

.5 Interior Renovation Work (for Construction Office or BOps Architectural Use Only):

.1 RIN 5.3B / Water Based Light Industrial Coating / semi-gloss / painted hollow metal doors and pressed steel frames.

.2 RIN 6.3P / Water Based Light Industrial Coating / semi-gloss / painted wood doors and frames.

.6 Painted metal fabrications at or near ground level:

.1 Sherwin Williams colour SW 7062 – Rock Bottom (UBC Gray) is mandatory for all exterior painted metal fabrications on campus. Coordinate with Section 05 50 00 metal Fabrications for painted other exterior components on the site.

.7 Interior white paint: In order to reduce paint wastage, all projects are to consider choosing from the following whites where possible:

.1 Benjamin Moore Oxford White
.2 Benjamin Moore Decorators White
.3 Benjamin Moore Distant Grey
.4 Benjamin Moore Cloud White

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