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1.0 GENERAL

1.1 Related UBC Guidelines

1.1.1 UBC Learning Space Design Guidelines
1.1.2 Audio Visual Technical Guidelines in Sections 27 41 16, 27 41 16.12, 27 41 16.12, 27 41 19, 27 41 51 and 27 41 52.
1.1.3 Division 27 Section 27 05 05 Communication Rooms Design Guidelines.
1.1.4 Division 14, Section 14 20 00 Elevator Machine Room and Closet Design Guidelines.
1.1.5 Division 26, Section 26 05 00 Electrical Service Rooms and Closet Design Guidelines.

1.2 Coordination Requirements

1.2.1 UBC Building Operations - Technical Services.
1.2.2 Acoustic Consultant.
1.2.3 UBC Information Technology (IT)
1.2.4 UBC Building Operations – Electrical Technical Support

1.3 Reference Standards:

1.3.1 American Association of College Facilities Management.
1.3.2 Interior Wayfinding Signage Guidelines

1.4 Main Entrances

1.4.1 Hand Sanitizing Units to be provided for all main entrances free standing within 6 feet of entrance way
1.4.1.1 Required product (PURELL® LTX™ or TFX™ Dispenser Floor Stand SKU:2424DX)
1.4.1.2 or wall mounted (PURELL® FMX-12™ Dispenser Push-Style Dispenser for PURELL® Hand Sanitizer SKU:5120-06).

1.5 Classrooms

1.5.1 Refer to UBC Learning Space Design Guidelines.
1.5.2 Demonstrate adaptability to technology changes.
1.5.3 Refer to Audio Visual Services, UBC IT, for sound, video and control systems guidelines.
1.5.4 Acoustic Consultant to be UBC approved.
1.5.5 Demonstrate active acoustic strategy.
1.5.6 Demonstrate passive acoustic strategy.
1.5.7 Refer to Acoustical Design Standard for UBC Classrooms in paragraph 1.16 below.

1.6 Washrooms

1.6.1 “Airport style” washroom design without the use of doors is preferable and promotes the use of hand dryers over paper towels.
1.6.2 Hardwiring is required in washrooms for hand dryers. UBC is in the process of phasing out paper towel use in washrooms.
1.6.3 For floor drains, see Division 22 Section 22 05 00 Plumbing - General Requirements.
1.6.4 For plumbing fixtures, see Division 22 Section 22 40 00 Plumbing Fixtures, Section 2.0.
1.7 Electrical Rooms

.1 The preferred location for Main Electrical Rooms is on North or East exterior building wall (for cooling and to allow for direct ventilation). Main Electrical Rooms, Local Electrical Rooms and Electrical Closets are considered Restricted Access Service Rooms/Closets. These rooms/closets are to be designed for housing electrical distribution equipment, electrical metering equipment, life safety equipment, lighting control equipment only.

.2 Main Electrical Rooms, Local Electrical Rooms and Electrical Closets are not to be used as conduits (pass through/feed through) for other building systems serving other areas such system include HVAC, communications and security.

.3 All electrical distribution equipment, electrical metering equipment, life safety control equipment, Transfer Switches, lighting control equipment including panelboards are to be located in Main Electrical Rooms, Local Electrical Rooms and Electrical Closets. Electrical distribution equipment, electrical metering equipment, life safety equipment, lighting control equipment including panelboards shall not be installed in any other room including Communication Rooms, Custodial Rooms, Laboratories, Audio Visual Service Rooms, Classrooms, Lecture Theatres, Offices or Corridors. Mechanical Rooms may contain Motor Control Centres, Variable Speed Drives, Distribution Centres and Panelboards for mechanical loads.

.4 All Electrical Rooms and Closets shall be designed and located in the building so that direct access is from a common or non-secure area such as a public corridor. Electrical Rooms and Closets shall not be located behind other rooms that might have specialized or secure locks installed; for example, a custodial room, server room, machine shops, etc.

.5 All Electrical Rooms and Closets shall be designed so that no equipment will be installed above a door or behind an inward opening door swing.

.6 All Electrical Rooms and Closets shall have 1.2 m horizontal by floor to ceiling vertical, of open wall space to allow for installation of future equipment.

.7 All Electrical Rooms shall be located and constructed to allow for replacement of installed equipment. All possible challenges must be considered such as structural loading, size of doorways and access corridors and exterior access.

.8 All Electrical Rooms and Closets housing transformers shall be insulated to prevent sound transmission to adjoining spaces.

1.8 Elevator Machine Rooms

.1 Elevator Machine Rooms shall contain: elevator controllers, elevator power disconnects, elevator cab lighting disconnects, communication demarcation, fire alarm system interface relays and any other equipment directly related to elevator operation. Elevator Machine Rooms are required when a machine is hoistway mounted.

.2 Systems or equipment not directly related to elevator operation shall not be installed within Elevator Machine Rooms.

.3 Elevator Machine Rooms shall be constructed so that ceiling mounted lighting, smoke detectors and other equipment can be safely accessed for maintenance and replacement.
.4 Minimum size of Elevator Machine Rooms shall allow for replacement of controllers from at least 3 non-proprietary manufacturers. At no times shall the Elevator Machine Room be smaller than 1.5 m deep by 2.2 m wide by 2.4 m high.

1.9 Communications Rooms

.1 A Communications Room is a service room designed to safely house telecommunications equipment. It is also used to mount and terminate voice, data, RF, and when approved by UBC IT – security cables security cables and their associated terminating and distribution systems.

.2 Communications room construction shall meet all applicable building, fire, electrical and safety codes and regulations as stated by UBC. No fire separation or resistance rating is required on the walls or ceilings provided the walls are constructed of 16mm Type X GWB on both sides of stud walls. Hub Rooms shall be constructed to meet a 1 hour fire separation. A smoke detector, connected to the fire alarm system, shall be installed in all communications rooms.

.3 Each campus building will contain a Main Communications Room and possibly many Local Communications Rooms. The Main Communications Room may be used as a floor serving facility in addition to a Local Communications Room serving facility. No other building systems are to be installed in the Main Communications Room.

.4 Local Communications Rooms or Closets are used as a floor serving facility for mounting and terminating approved communications cabling and hardware only. No other building systems are to be installed in the Local Communications Room.

.5 Details of communications systems function and installation are handled by Division 27.

.6 False ceilings are not permitted in communication rooms.

.7 Communications Rooms and Closets have special requirements addressed in Division 27 of the Technical Guidelines, Section 27 05 05 Communication Rooms Design Guidelines. They shall only contain approved equipment and systems as indicated in Division 27.

.8 All Communications Rooms shall be designed and located in the building so that direct access is from a common or non-secure area. Communications Rooms are not to be located behind other rooms that might have specialized or secure locks installed; for example, a custodial room.

1.10 AV and Equipment Rooms

.1 AV rooms used as theatre projection rooms have special requirements and UBC shall be consulted in these situations.

1.11 Mechanical Rooms

.1 Floor to be concrete with 2 coat elastic membrane that will block concrete cracks when built over occupied space. For Mechanical Room floors over occupied spaces see Section 09 67 00 Fluid Applied Flooring Paragraph 2.1.1.2.

1.12 Showers

.1 Shower stalls shall be white durable plastic tub/shower surround and substrate shall be cementitious board, mineral fiber board or masonry. Floors to have waterproof membrane
and slope to drain. Shower stall to have 100mm curb, except in accessible shower stalls. Where possible make single stalls accessible.

1.13 Custodial Rooms

.1 General Requirements:

.1 Custodial rooms must be designed for ONLY custodial staff use. These spaces CANNOT be shared or be made to do double duty with any other operation in the building, because the already minimal space is then reduced to a dysfunctional level and their security access becomes compromised by other trades.

.2 Motion detector or similar energy saving on/off light switches shall be installed in all custodial rooms.

.3 Splash guards must be at extend at least 2 feet above the janitor sink and 1 foot from the edge of the janitor sink laterally. Splash guard must be non-permeable and rust resistant.

.4 All custodial rooms shall be designed for detergent mixing stations and require 3/4” hot and cold backflow preventers installed above the mop sink. Refer to Section 22 11 18 for more information.

.5 Door to custodial room to swing out.

.2 Main Floor Custodial Room near Loading Bay – Space Allocation

.1 400 square feet per major building is required. Room is to be located very close to a loading bay.

.2 Dimensions: 20 feet by 20 feet

.3 Door width: 48 inches; in-swinging. Double door hollow metal body construction to allow for pallet delivery and mitigate damage.

.4 Electrical: two – one rated at 15 amps, one rated at 20 amps with 110 volt duplex receptacle outlets. 500 lux maintained lighting levels.

.5 Plumbing: Floor drain in centre; floor mounted custodial mop sink c/w 150mm curb with notched front for easy tilting to empty mop bucket, with stainless steel splash guard shield on wall.

.6 Shelving: 16 inches deep; adjustable height; two rows at 36 inches, 48 inches on the longest wall.

.7 Mop hanger: Continental # 515; steel with rubber cam, grips 7/8” to 1 ¼” diameter handles; three mop hangers to be located 70 inches over the floor mounted custodial sink.

.8 Typical supplies and equipment to be stored would consist of: paper supplies, 20 + gallons of chemicals, pails, brooms, mop & bucket, floor pads and scrubbing brushes, safety signs, wet/dry vacuums, extension cords, chalk, small liners, large liners, dust mops, vacuums, buffing machines, burnisher, stripping/finishing supplies, custodial cart, carpet cleaning, autoscrubber, and miscellaneous cleaning items.
.3 **Standard Custodial Room (Typical for all other floors)**

.1 120 square feet required per floor. It will serve the needs of the assigned area for each custodian (approximately 25,000 to 30,000 square feet of building area).

.2 Dimensions: 10 feet by 12 feet

.3 Door width: 36 inches; in-swinging

.4 Electrical: one – rated 15 amps, 110 volt duplex receptacle outlet.

.5 Plumbing: Floor drain in centre; floor mounted custodial mop sink c/w 150mm curb with notched front for easy tilting to empty mop bucket, with stainless steel splash guard shield on wall.

.6 Mop hanger: Continental # 515; steel with rubber cam, grips 7/8 to 1 ¼" diameter handles; three mop hangers to be located 70 inches over the floor mounted custodial sink.

.7 Shelving: Heavy duty steel shelving; 16 inches deep; adjustable height; two rows at 36 inches, 48 inches; on longest wall.


.8 Typical supplies and equipment to be stored would consist of: paper supplies, wet/dry vacuums, buffing machine, autoscrubber, canister vacuum, pacer 30” vacuum, custodial cart, mop & bucket, up to 20 gallons of chemicals in 1 gallon containers, brooms, wet mops, and cleaning supplies.

1.14 **Biohazard Labs**

.1 Please contact UBC Building Operations - Technical Services Manager to alert him/her that special facilities will be designed and to ask for any coordinator assistance; phone: 604-822-6002, plus UBC Risk Management Services, Biosafety Advisor, phone: 604-822-9527.

.2 For floor drains, see Division 22 Section 22 05 00 Plumbing - General Requirements.

1.15 **Radioisotope Labs**

.1 Please contact UBC Building Operations - Technical Services Manager to alert him/her that special facilities will be designed and to ask for any coordinator assistance; phone: 604-822-6002, plus phone UBC Risk Management Services, Radiation Safety Advisor, phone: 604-822-7052.

.2 For floor drains, see Division 22 Section 22 05 00 Plumbing - General Requirements.

1.16 **Animal Care Facilities**

.1 Design and construction is to be completed in accordance with the latest CCAC guidelines.

1.17 **Kitchen and Lounges**

.1 Provide space between the countertop and over counter cabinets to mount paper towel dispenser and soap dispenser.

.2 All kitchens and lounges to have paper towel dispensers installed to conform to the UBC standard:
Kimberley Clarke Professional
Type: 09990
Color: Black/Smoke
Unit Size: 12.63” x 16.13” x 10.2”

This allows for the use of generic paper refills and universal keys so all paper towel dispensers use the same key. The top of the dispenser height is not to exceed 5.5 feet for access to the key on top of the lid.

.3 All kitchens and lounges to have hand soap dispensers installed to conform to the UBC standard:

- Purell FMX 20 (SKU 5234-06)
- 2000 ml Purell Healthy Soap SKU 5572-02
- Color: Graphite/Metallic

This allows for the use of universal keys so all soap dispensers at UBC use the same key.
1.8 Acoustical Design Standard for UBC Classrooms

Acoustical Design Standard for UBC Classrooms

1. Context

This standard was developed by the following individuals, who met and deliberated between January 2004 and April 2005 as members of the UBC Classroom Acoustics Standards Committee:

- Barbara Gordon, Architect, Design Office, UBC
- Murray Hodgson, Professor of Acoustics, UBC
- Dan Lyzun, Acoustical consultant, Daniel Lyzun & Associates
- Justin Marples, Director, UBC Classroom Services
- Barry McKinnon, Acoustical consultant, McSquared System Design Group
- Tony Voon, Director, The Media Group, UBC

2. Scope

This standard pertains to the design of acoustical environments in spaces for teaching and learning (‘classrooms’) at UBC, and to related non-acoustical issues. It is relevant to the design of the geometry of the spaces, their bounding surfaces, their internal surface finishes, their contents, their mechanical, electrical and other systems, and their audio-visual systems. This standard specifies acoustical performance criteria that must be met to ensure high quality acoustical environments. The rationale for such criteria is discussed in Appendix A.

3. Classroom Categories

This standard considers three categories of classrooms, as follows:

- Small Standard Classrooms (up to 100 seats, rectangular geometry, no speech-reinforcement system);
- Large Standard Classrooms (more than 100 seats, non-rectangular geometry, with a speech-reinforcement system);
- Critical Classrooms (e.g., for distance learning).

4. Objectives

This standard presents acoustical performance criteria that will ensure that the acoustical environments in UBC classrooms are of high quality for the majority of instructors and students. In particular, it ensures that excellent verbal communication is possible between students and teachers. This is achieved by ensuring, at all seats, sufficiently high speech levels and sufficient low noise levels, as well as appropriate reverberation. Spaces with acoustical environments that do not meet these criteria would be expected to present barriers to teaching and learning.

5. Design Constraints

The development of these acoustical standards was based on the following assumptions, and took into account the following constraints, in part imposed by current UBC policy:

- classrooms are approximately 60% occupied when used for teaching and learning;
- new UBC classrooms will not normally (this issue can be revisited for special rooms) have carpets, upholstered seating or sound-absorptive wall treatments;
many UBC classrooms have ceiling absorption – often form all or part of a suspended acoustical ceiling – to control the classroom reverberation, in-class student-activity noise and impact noise from spaces above the classroom;

- Given the above, the main source of sound absorption is the occupants of the classroom. Classrooms with much less than a 60% occupancy will be excessively reverberant and of inadequate acoustical quality. Classrooms with much more than 60% occupancy will have insufficient reverberation and non-optimal quality.

Other issues to be considered during the acoustical design process are discussed in Appendix B.

6. Acoustical Criteria

- Small Standard Classrooms: Reverberation Time (s) in the range 0.55 to 0.65 s; Maximum noise level = NC 35;
- Large Standard Classrooms: Reverberation Time (s) in the range 0.75 to 0.85 s; Maximum noise level = NC 35;
- Critical Classrooms: Reverberation Time (s) in the range 0.45 to 0.55 s; Maximum noise level = NC 25.

Reverberation-time criteria refer to the occupied, ‘in-use’ values at all frequencies. Noise levels refer to the unoccupied classroom (i.e., excluding student-activity noise) with mechanical services (e.g., the ventilation system) in typical operation, with normal activity occurring outside the classroom, and the classroom doors and windows closed.

Classroom equipment (projectors, computers) should be chosen to meet these criteria.

Additional criteria may apply to the design of electro-acoustical (e.g. speech-reinforcement, video-teleconferencing and assistive-listening) systems. Refer to the UBC Technical Guidelines for details.

Appendix C contains an overview of methods available for controlling classroom sound by acoustical design to meet the above performance criteria.

Appendix A: Rationale for Acoustical Standards

University classrooms are acoustically critical spaces in which verbal communication is crucial for teaching and learning. Non-optimal acoustical conditions in classrooms result in impaired verbal communication between teachers and students, impaired teaching and learning, and teacher voice problems. Students and instructors experience broken concentration, frustration and fatigue. Students have difficulty hearing other students ask questions. The problems are particularly acute for hearing-impaired people, and those using a second language.

Classrooms vary from small seminar rooms for a few occupants, to classrooms for several tens of students, to larger university lecture rooms and auditoria, accommodating hundreds of listeners. Smaller classrooms are usually of rectangular geometry. Larger lecture rooms can have fan plan-shape, inclined seating, non-flat ceiling profiles, etc. In smaller classrooms, talkers and listeners can be anywhere in the classroom, and source/receiver distances can vary from less than a meter to several meters. In lecture rooms and auditoria, the talker is usually at one end of the room, with the listeners spread out in front; source/receiver distances can vary from several meters to several tens of meters. For hygiene or maintenance reasons, classrooms may have hard, non-absorptive surfaces, though carpets and wall and ceiling absorption are not uncommon. Lecture and conference rooms can have non-absorptive or padded, sound-absorptive seating. The
occupants themselves contribute significant absorption to the classroom. This, and the fact that classroom occupancy can vary considerably, must be considered in the acoustical design.

In classrooms, as in other rooms for speech, quality and ease of verbal communication, free of distractions, are prime concerns. Verbal communication is considered to be affected by two main acoustical factors – the classroom reverberation, and the relative decibel levels of the speech signal and the background noise, at the listener’s ears. The classroom speech sources are the teachers’ and the students’ voices. Classroom noise sources include mechanical services (e.g. ventilation outlets), classroom equipment (projectors, computers), and the teachers’ or students’ voices when the other is generating the signal to be heard. Noise breaking into the classroom from outside can be significant when the classroom is located near transportation corridors (such as highways, airports, etc.), or in cases when children are active in nearby corridors or play areas. Intermittent noises, which cause distraction and break concentration, are considered more problematic than continuous noises. Finally, classroom activity itself generates significant noise, including speech babble, cell-phone ringing and impact noise from footsteps, etc.

It is generally considered that, for excellent verbal communication with instructors talking in a comfortable voice level, background-noise levels should not exceed about NC 35 for normal-hearing, first-language listeners, and NC 25 for hard-of-hearing or second-language listeners. Regarding the optimal reverberation for speech intelligibility, either too little or too much reverberation is detrimental. Excessive reverberation impairs verbal communication. With too little reverberation, voices do not readily reach listeners farther away. Hard-of-hearing and second-language listeners have more difficulty hearing in reverberation.

Appendix B: Non-Acoustical Considerations Affecting Acoustical Design

Modern building trends increasingly involve sustainable or ‘green’ design principles. Acoustical designers should be aware that university buildings containing classrooms, designed according these principles, present particular challenges with respect to meeting the acoustical criteria in this standard. ‘Green’ and acoustical performances are often in conflict. Examples of such conflicts are as follows:

- excessive noise levels resulting from inadequate external to internal sound insulation resulting from the promotion of natural building ventilation;
- excessive reverberation resulting from the absence of sound-absorbing materials left out of the building design in order to promote the use of hygienic materials;
- excessive impact noise or reverberation resulting from the absence of carpets and suspended acoustical ceilings not included in the design of a building incorporating thermal slabs for heating and cooling.

Designers should be aware of issues associated with the use of synthetic, fibrous materials for sound absorption in rooms, and of potential conflicts between the use of fibrous materials for noise control and ensuring high indoor-air quality. Refer to the UBC Technical Guidelines for further information.

Appendix C: Controlling Classroom Sound

Acoustical design is a complex inter-disciplinary task to be considered in the design or renovation of all classrooms. An acoustical consultant must be involved at the inception of all projects. The acoustical consultant should work closely with UBC Campus Planning, the project architect and other members of the team designing all building systems.
Controlling and optimizing the acoustical conditions in a classroom, or other rooms for speech, involves three fundamental considerations:

- **Promoting high speech levels**: avoid excessive classroom volume due, for example, to high and vaulted ceilings. Use classroom geometries that direct sound to the back of the room. In large lecture rooms, this can include angled reflectors around teaching areas, and profiled ceilings. Given that classrooms must have minimum heights to meet requirements for lighting, visual aids, ceiling profiling, etc., an appropriate amount of surface absorption, usually located on the ceiling. Keep at least the central part of the ceiling sound reflective to promote the reflection of speech sounds to the back of the classroom. Use approximately square floor plans, avoiding long and wide rooms. Amplification by a speech-reinforcement system will likely be involved in larger rooms. One important issue to consider at the classroom design stage is that the optimal acoustical conditions for unaided speech may not be the same as when a speech-reinforcement system are in use;

- **Controlling background noise**: avoid open-plan design. Control the noise and vibration of mechanical services. Avoid high terminal velocities of supply air-terminal devices, and place volume-control devices at distances of 0.5 m or more upstream to minimize noise generated by turbulent flow. Choose quiet equipment for use in the classroom, or enclose them in properly designed enclosures (e.g. projection booths). Impact noise due to student activity can be reduced by the use of carpets and cushioning materials in the classroom under consideration, as well as in the classroom above. The partitions bounding the classroom must provide adequate sound isolation; in critical cases, this might require the use of non-openable windows, entrance vestibules and quality door seals;

- **Optimizing reverberation**: apply appropriate sound-absorptive materials to the room surfaces. Avoid applying sound absorption to the central part of the ceiling, which provides useful reflections between talkers and listeners. Using sound-absorptive seating allows the ceiling to be left reflective, and reduces the sensitivity of the classroom’s acoustical conditions to the number of occupants.

***END OF SECTION***
1.0 GENERAL

1.1 Related UBC Guidelines

.1 UBC Wayfinding – Interior Wayfinding Signage Guidelines
.2 UBC Wayfinding – Exterior Signage Standards and Guidelines
.3 UBC Protocol for Space Inventory Designation
.4 Section 10 14 01 Door Identification

1.2 Coordination Requirements

.1 Infrastructure Development, Facility Information & Inventory Systems (FIIS) at id.fis@ubc.ca.

1.3 Design Requirements and General Policy

.1 The Facility Information & Inventory Systems (FIIS) unit of Infrastructure Development approves room numbering in accordance with the following guidelines.
.2 Architectural floor plans issued for tender must be submitted with proposed room numbers in conjunction with the proposed door identification tags following the Door Identification guidelines (Section 10 14 01) to the FIIS Unit for approval.
.3 Once room numbers are approved, any further change to room numbers must be re-submitted to FIIS for approval.
.4 Approved room numbers must be incorporated in drawings issued for construction.

1.4 Limitations

.1 A maximum of 6 digits for room numbers. (Refer to guidelines below).
.2 Room numbers must only consist of alphanumeric characters and must not contain any special characters.

1.5 Intent

.1 Life Safety: Identify each space in case of emergency.
.2 Maintenance: Identify each space for maintenance purposes.
.3 Wayfinding: Make wayfinding through the building as simple and logical as possible.
.4 Operational use: Plan for various operations and system applications dependent on room numbers

1.6 Room Numbering Allocation

Room numbers are to be assigned to:

.1 Every corridor that changes direction from the adjacent corridor.
.2 Every lobby space that might be considered as a separate space from the adjacent corridor.
.3 Every room that has a door or that is separate from the adjacent room.
.4 Exit stairs should be numbered separately as ST1, ST2, and etc.

1.7 Guidelines

.1 First basement floor shall be numbered B100’s.
.2 Additional underground floors shall be numbered B200’s, B300’s etc.
.3 Level 1 use 100’s etc. (for larger buildings use 1000).
.4 Level 2 use 200’s etc. (for larger buildings use 2000).
.5 If necessary, the numbering can be changed to 1000’s to accommodate a large number of rooms. In that case, the floors would be 1000, 2000 etc. and the first basement level would
be B1000, with additional underground floors following the B2000, B3000 series. (For lower basement floors, the interior rooms can now be assigned a maximum of 6 digits, i.e. B1000A. (Recent UBC database improvements now allow a 6 digit limitation.)

.6 The mechanical room (and/or penthouse) shall be designated a level number and room number consistent with the 100’s, 200’s system.

1.8 Typical for All Floors

.1 The numbering pattern of each floor should be as consistent as possible with the numbering of other floors within the same building.

.2 Lobbies and corridors to take on the 10’s, (e.g. 120, 130, 220, 230 etc.).

.3 Odd numbers on one side (e.g. 131, 133 etc.) Even numbers on opposite side (e.g. 132, 134 etc.). *See 1.8.7.1 and 1.8.7.2.

.4 Washrooms to follow guidelines of a typical room.

.5 Stairwells to be numbered prefixed with “ST” (e.g. ST1, ST2, ST3, etc.)

.6 Start numbering with the lowest numbers at the main entrance and continue following the main circulation flow.

.1 Where a main entrance separates two or more building wings, give each wing a distinct set of numbers that flows logically from the adjacent wing (e.g. Wing A: rooms 1000-1099; Wing B: rooms 1100-1199).

.2 Refine the room numbering system according to how a visitor might logically move through the building in search of a room number.

.7 When approaching from the entrance,

.1 In double loaded corridors, odd numbers should be on the left and even numbers on the right.

.2 In single loaded corridors, assign numbers consecutively.

.3 It is acceptable to skip numbers to allow for future renovations.

.4 Where a large suite of rooms is accessed from the circulation corridor by a single entry door, use a distinct set of consecutive numbers that follow the main entry room number.

.5 For a room, which is accessible only from another room, (a “sub-room”); label the sub-room by adding a letter to the number of the room from which the sub-room is accessed, e.g. 124 & 124A.

1.9 Associated Numbering

.1 Exterior Doors - Label all doors leading into the building (but not the interior doors) with letters (A, B, etc.) starting from the main entry door and following clockwise.

.2 Signs at Elevators, Elevator Call Buttons, Fire Alarm Annunciator Panels and Exit Stairs – For signs denoting floor numbers assign floor numbers as follows:

.1 Basement floors are to be shown as “B1, B2, and B3 etc.”

.2 Level 1, first or main floor is to be shown as “1”.

.3 Level 2 or second floor is to be shown as 2, and etc.

***END OF SECTION***
1.0 GENERAL

1.1 Related UBC Guidelines

1. Section 08 00 10 Openings – General Requirements
2. Section 10 14 00 Room Numbering
3. Section 10 14 05 Signage Standards and Guidelines

1.2 Coordination Requirements

1. Infrastructure Development, Facilities Information & Inventory Systems (FIIS) at id.fis@ubc.ca

1.3 Design Requirements and General Policy

1. The Facilities Information & Inventory Systems (FIIS) unit of Infrastructure Development approves interior and exterior door identification in accordance to the guidelines below.

2. Architectural floor plans issued for tender must be submitted with proposed door numbers in conjunction with proposed room numbers following room numbering guidelines (Section 10 14 00) to the FIIS Unit for approval.

3. Once door numbers are approved, any further changes to the design affecting room numbers must be re-submitted to FIIS for approval.

4. Approved door IDs must be incorporated in drawings issued for construction & door hardware schedule.

1.4 Limitations

1. Door IDs must be uniquely identified.

2. Door IDs must consist of alphanumeric characters and must allow for special characters for separation of values

1.5 Intent

1. Secure Access: Granting and revoking access to the building occupants, students, faculty, staff and other select groups within the UBC community.

2. Locksmith Shop: Identifying associated hardware components and build for maintenance purposes.

3. Operational use: Planning for various operations and system applications dependent on door numbers.

1.6 Door Identification Allocation

Door IDs tags are assigned to:

1. Every door that has a lockable/latching hardware.

2. Every door that is securing a room/s or mechanical airways or shaft/s.
1.7 Guidelines

.1 Interior Door Identification

.1 The door IDs are assigned based on the room being secured.
.2 Door IDs are assigned using the room number followed by a colon (:) and the door tag starting at 1. For example: Room 100 will have a door ID 100:1
.3 For rooms with multiple doors, door IDs are assigned in sequence for room, starting from the main entrance and continuing clockwise, e.g., 201:1, 201:2, and etc.
.4 Doors leading into stairwells are tagged according to the stair number and floor.
  Stair 2 level 1 (ST2L1:1)
  Stair 2 level B1 (ST2B1:1)
.5 Airway/Shaft door IDs are associated with the room number of the corridor. Doors leading into corridors will take priority in door sequences, e.g., 1000:1, 1001:2. Airway/shaft doors then following, e.g., 1000:3, 1000:4,…etc.

.2 Exterior Door Identification

.1 Label all doors leading into the building with letters (A, B,…etc.) starting from the main entry door and following clockwise. Except for letter I and O.
.2 Exterior entrances using double doors will be grouped as one letter but separated by numeric number, e.g., A1, A2,… etc.
.3 Exterior doors that does not lead to the main portion of the building will follow the interior door ID guideline.

Sample floorplan

1.8 Associated Numbering

.1 Room numbers – shall refer to Section 10 14 00.

***END OF SECTION***
1.0  **GENERAL**

1.1  **UBC Wayfinding – Interior Wayfinding Signage Guidelines**

.1 The interior signage guidelines can be found at
http://assets.brand.ubc.ca/downloads/ubc_interior_signage_guide.pdf

.2 Creation of new Interior Signage and/ or Modifications of Existing Interior Signage

.1 UBC Vancouver Campus - please submit a service request to:
http://buildingoperations.ubc.ca/resources/building-administrators/

.2 For additional inquiries or to obtain interior signage approvals, please contact:
Infrastructure Development - Facilities Information and Inventory Systems (FIIS) at
records.section@ubc.ca, or
Building Operations – Sign Shop at signshop.buildingops@ubc.ca

.3 UBC Okanagan Campus - please contact:
Campus Planning and Development (CP+D) at spaceandfacilities.planning@ubc.ca,
or
Facility Management at facilities.ok@ubc.ca

1.2  **UBC Wayfinding – Exterior Signage Standards and Guidelines**

.1 The exterior signage guidelines can be found at

For additional information regarding external signage, please contact Carmen Rida at
carmen.rida@ubc.ca or 604-822-0464.

***END OF SECTION***
1.0 GENERAL

1.1 Related UBC Guidelines

.1 UBC Standard Details for Washroom
.2 For floor drains, see Section 22 05 00 Plumbing - General Requirements
.3 For lighting controls of custodial rooms, see Section 26 51 00 Interior Building Lighting, 2.4 Lighting Controls.
.4 Recycling Infrastructure Guidelines for UBC Buildings

1.2 Co-ordination Requirements

.1 Coordinate seismic restraint of equipment with Structural Engineer.
.2 Coordinate Roof Specialties with UBC Building Operations.
.3 Coordinate Toilet Specialties with UBC Custodial Services.

1.3 General Requirements

.1 Provide materials and systems beneficial to use and occupancy, durability, and reuse during renovations.
.2 For renovation projects re-use existing equipment and specify equipment that can be re-used.
.3 For renovation projects existing equipment and materials to be turned over to UBC for re-use or parts - consult UBC Project Manager.
.4 Submittals

.1 Where Applicable Provide Shop Drawings
  .1 Colour samples and maintenance instructions for Specialty products and assemblies and systems.
.2 For blinds submit one working sample of each blind (minimum 400 wide x 600 long).

.5 Quality Assurance

.1 Where seismic restraints are required, and for the work noted below, the seismic restraint work including anchoring devices to be designed and certified by a Professional Engineer registered in BC, who is to also carry out periodic site reviews of the work of this Section during construction and at completion, and submit reports and Letters of Assurances in the Forms established by BCBC. Costs to be included in Contract.

2.0 WALL PROTECTION AND CORNER GUARDS

2.1 Shall be provided in high traffic corridors, and generally in areas subject to abuse. In corridors, consider wall protection to 3'-0" from finished floor.

3.0 DOORS

3.1 There should be a provision for kickplates at least one foot high from base of all high traffic doors.
3.2 All shared/inclusive washrooms to have a retractable stanchion added at the entrances. Preferred mounting hardware, 3 inch X 4 inch metal plate mounted at each side of entrance, no jagged edges or catching surfaces for users as they enter.

4.0 DEMOUNTABLE PARTITIONS

4.1 Consider demountable partitions when frequent changes (such as office areas) are expected.

4.2 Selection of system to also be based on long-term availability of components and finishes.

4.3 Carefully establish and coordinate electrical and communications requirements and components with UBC IT Services.

4.4 Include also the engineering and anchoring of all lateral bracing, which is to be independent of, or coordinated with, metal suspension systems for ceilings.

5.0 WASHROOM MILLWORK

5.1 Washroom Millwork shall be in accordance with Section 06 40 00 Architectural Woodwork.

6.0 RECYCLING AND WASTE MANAGEMENT

6.1 Recycling and Waste Receptacles

   .1 Multi-stream recycling stations shall be provided in accordance with the Recycling Infrastructure Guidelines for UBC Buildings. Consult with UBC Custodial Services to confirm locations and selection of appropriate equipment.

6.2 Space for Recycling and Waste Stations

   .1 Interior space shall be allocated on floor plans for multi-stream recycling stations in accordance with Recycling Infrastructure Guidelines for UBC Buildings. Consult with UBC Custodial Services to confirm locations and selection of appropriate equipment.

6.3 Recycling and Waste Storage Room

   .1 Secure, externally accessible, storage room, located near service entry to building that can accommodate short term storage of waste materials (e.g. garbage, recyclables, and confidential shredding material and special wastes). The minimum dimensions for the storage room are to be 22'-0" x 22'-0". Consult UBC Custodial Services to confirm storage specifications for recycling and waste.

***END OF SECTION***
1.0 GENERAL

1.1 Co-ordination Requirements

.1 Section 05 50 00 Metal Fabrications (Engineered Metal Suspension Systems)
.2 Section 10 28 00 Toilet, Bath, and Laundry Accessories

1.2 Description

.1 Toilet and Change Room Partitions, Urinal Vision Screens.

1.3 Performance Standards

.1 BC Building Code, including Building Access Handbook.
.2 CSA-B651-12 - Accessible Design for the Built Environment.

1.4 Quality Control and Assurance

.1 Submittals
   .1 Shop Drawings shall include complete backing/support requirements and engineering data.
   .2 Samples of hardware and fittings on request.
   .3 Color samples for selection.
   .4 Maintenance data shall include graffiti removal techniques.

.2 Warrantee shall be a 10-Year limited manufacturer's warranty.

2.0 DESIGN REQUIREMENTS

2.1 General

.1 A structural engineer shall design the seismic restraint of all Toilet partitions.

.2 Washroom compartments may have floor or wall-mounted partitions.

.3 Avoid steel walls; composite materials preferred.

.4 For restoration projects, re-use material whenever possible.

.5 Each compartment to be complete with the following hardware:
   .1 Combination coat hook/door bumper.
   .2 Combination stop/latch - with emergency lift feature.
   .3 Non-removable self-closing hinges - with emergency lift feature.
   .4 Women's purse shelf.
   .5 Door pulls for accessible compartments.
   .6 Seat at dressing cubicles.

.6 Install double toilet rolls-all accessible washroom stalls.

2.2 Materials

.1 UBC recommends partition systems to be made of Solid Phenolic Melamine construction.
2.3 Components

.1 Provide a continuous hardware option.

.2 Accessible compartments to be capable of being locked from the inside by a device that is operable with one hand, does not require fine finger control, tight grasping, pinching or twisting of the wrist and requires a force not more than 22 N to activate as per CAN/CSA-B651-M90.

2.4 Fabrication

.1 Edges are to be beveled and/or rounded.

2.5 Finishes

.1 All toilet partitions shall have durable institutional finishes that require minimal maintenance and are finished to hide abuse and markings.

***END OF SECTION***
1.0 GENERAL

1.1 Related UBC Guidelines

.1 Section 22 40 00 Plumbing Fixtures
   .1 Technical details for “no touch” motion detector-activated plumbing fixtures and
     accessories including, faucets, urinals and water closets are covered in Section 22 40
     00.

1.2 Co-ordination Requirements

.1 Backing for Secure Mounting.
.2 Section 10 21 13 Toilet Compartments.

1.3 Description

.1 Washroom Accessories.

1.4 Quality Control and Assurance

.1 Submittals:
   .1 Shop Drawings, samples for review when requested by UBC.

1.5 Design Requirements

.1 Toilet Count
   .1 Where classrooms and lecture theatres exist, the number of toilets and sinks in
     proposed women's washrooms is required to be increased by one third over the
     number required by the current version of the BC Building Code. This is to
     lessen the washroom demand between classes.

.2 Materials
   .1 The “generic” type dispenser allows UBC to source flexible pricing. The products used
     in these dispensers are of the large roll size and last much longer between roll
     changes thus reduces labour costs. The dispensers were tested through various trials
     prior to standardizing their use in all campus buildings. These newly designed
     dispensers are rapidly replacing the outdated “proprietorship” style dispensers.

.2 Hand Dryer Wiring - In new construction or major renovations, provide the required
   electrical wiring for hand dryers and terminate the wiring in a suitable location in a
   junction box recessed in the wall with a stainless steel decorative cover plate (close to
   the sinks). For hand dryer type, see paragraph 1.5.3.9 of this section.

.3 Components

.1 Kimberley Clarke Professional
   .1 Type: 09551 Twin Toilet Tissue Dispenser
   .2 Colour: Black/Smoke
   .3 Unit Size: 20.43” x 13.12” x 5.8” (51.9 cm x 33.3 cm x 14.7 cm)
.2 San Jamar
.1 Type: R2090TBK Oceans 9" Single Roll Jumbo Toilet Tissue Dispenser
.2 Colour: Black Pearl

.3 There should be a 2" clearance behind the open cubicle door and the toilet tissue dispenser.

Single Toilet Roll Dispenser Standard Installation Instructions:

NOTES:

1). INSTALL THE DISPENSER 10" ON CENTRE FROM THE FRONT EDGE OF THE WATER CLOSET. THE BOTTOM OF THE DISPENSER IS TO BE LOCATED 2'–3' ABOVE THE FINISHED FLOOR LEVEL.

2). MAINTAIN A MINIMUM 2" – 3" CLEAR SPACE BETWEEN THE EDGE OF THE DISPENSER AND THE SIDE GRAB BAR.

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.4 Soap Dispensers

.1 Distributor: Veritiv Supply

.2 Dispensing system using a refillable dispenser with front button operated valve.
   .1 Purell FMX 20 (SKU 5234-06)
   .2 Dispenser type: 2000ml
   .3 Product refill 2000ml Purell Healthy Soap SKU 5572-02

.3 Color for body shall be Graphite/Metallic.

.5 Sanitary Napkin Dispensers

.1 Frost Products Limited.

.2 Double Combo, Frost ref. #608-1 in white epoxy, or # 608-3 in stainless steel.

.3 Mechanism shall be 25 cent.

.4 Product must be on FREE vend system only. We require coinless units only.

.5 Note: In Accessible Washrooms and Toilet Compartments, install within reach of toilet seat and located so as to maintain toilet compartment and grab bar clearances required by Code.

.6 Sanitary Napkin Disposal Bins

.1 Frost Products Ltd.

.2 Reference part # 608-3.

.3 Color shall be brushed stainless steel.

.7 Grab Bars

.1 As a minimum: installed as per BCBC; 30 - 40 mm in diameter; 40 mm clear of wall; tamper-proof fasteners; non-slip gripping surface.

.8 Garbage Containers

.1 Rubbermaid Marshall Classic Container # 8170-88 (black), 18’ x 42” high, 23lb./10.4Kg. No wall-mounted and no in-wall garbage containers allowed.

.9 Hand Dryers

.1 Preference for new washroom builds are to contain hand dryers only.
   .1 Preferred models are Dyson Airblade HU02 or Dyson Airblade 9kj.
   .2 Either type of hand dryer must be supplied with wall mounted backplate in brushed stainless steel.

1.6 Handover/ Turn-Over Procedures

.1 Final cleaning inspection to be conducted by a Building Operations Custodial Unit Representative prior to final completion or owner occupancy.

.2 Cleaning and floor work to be performed to Building Operations Custodial Services Standards.

***END OF SECTION***
1.0 GENERAL

1.1 Co-ordination Requirements

.1 The University Branch of the Vancouver Fire Department to confirm current requirements for each individual project.

1.2 Description

.1 Fire Extinguishers, Cabinets, Accessories and their installation.

1.3 Performance Standards

.1 BC Fire Code, NFPA #10.

1.4 Quality Control and Assurance

.1 Submittals

.1 Proposals shall be submitted to the Fire Protection Manager, Vancouver Fire Department, phone number: 604-665-6068.

.2 Shop Drawings and Maintenance Instructions are to be submitted to the UBC Branch of the Vancouver Fire Department.

1.5 Design Requirements

.1 Materials

.1 Acceptable Fire Extinguisher Types

.1 All new extinguishers to be made available to the UBC Branch of the Vancouver Fire Department for bar coding and applying a UBC Security number onto the extinguisher.

.2 Dry Chemical - Ansul Cartridge operated only - ABC or BC rating (typical).

.3 CO₂ - as per B.C. Fire Code Regulations. (For specific installations only, see Vancouver Fire Department.)

.2 Execution

.1 Fire extinguishers to be installed in locations, recesses, or cabinets so that they do not project more than 100 mm horizontally into exit passageways, public corridors, corridors used by the public or corridors serving classrooms or patient's sleeping rooms, and in a manner not to create a hazard for visually impaired persons traveling.

.2 Where fire extinguishers are installed in cabinets they are to be provided with a sign acceptable to the Vancouver Fire Department.

.3 Where fire extinguishers are installed on walls they are to be installed on UBC Standard backing boards. The backing boards are available in standard sizes and finishes from Building Operations Stores, at a cost to be confirmed with Building Operations.

***END OF SECTION***