THE NEW SURREY HOSPITAL

AND

BC CANCER CENTRE PROJECT

Schedule 1 – Statement of Requirements

Appendix 1T – UBC FoM Design Guidelines and Functional Requirements

- **Part A: Design Guidelines and Functional Requirements for Learning Spaces: Small Seminar Rooms**
- **Part B: Design Guidelines and Functional Requirements for Learning Spaces: On-Call Suite**

FACULTY OF MEDICINE

Design Guidelines and Functional Requirements for Learning Spaces: Small Seminar Rooms

MARCH 2, 2022

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1 INTRODUCTION

1.1 FACULTY OF MEDICINE DISTRIBUTED MEDICAL PROGRAM

In 2004, the University of British Columbia (UBC) Faculty of Medicine (FOM) initiated its Distributed Medical Program (DMP), the purpose of which is to provide equal access to medical teaching and training for students, residents, and practicing physicians across BC. The DMP is made possible by technology-enabled learning spaces located at university sites (UNBC, UBCO, UVic, and UBC) as well as Clinical Academic Campuses and Affiliated Regional Centres located across the province. Many of these spaces are also videoconference (VC)-enabled and are connected to each other via the central VC Bridge, all of which rests on a dedicated network called the Distributed Medical Program Audiovisual (DMP-AV) network. The requirements laid out in this document support the Accreditation standards defined by the Royal College of Canada.

1.2 DOCUMENT PURPOSE AND APPLICABLE SPACES

This document is part of a collection of documents referred to as the **UBC FOM Design Guidelines and Functional Requirements for Learning Spaces** (henceforth referred to as Design Guidelines and Functional Requirements). They provide requirements for learning spaces based on best practices and extensive organizational experience developed since 2004. Each learning space type has an associated Design Guideline and Functional Requirements document about that space type.

This document provides infrastructure requirements for the design and construction of the Videoconference rooms (commonly called VC Rooms) as they are identified in Appendix 1T - UBC FoM Design Guidelines and Functional Requirements.

Ref #	Space ID	# of Unit	NSM	Total NSM
V1.13	Videoconference/Seminar Room - UBC	1	35	35

1.3 ROOMS USAGE AND BOOKING PROCESS

The VC rooms are video conferencing-enabled teaching, learning, and meeting spaces. They are used to connect a small group of people in a meeting-style room with other groups of people in other VC enabled rooms. All participants remotely and local must have equivalent ability to interact with the other participants. These rooms are located at University Sites, Clinical Academic Campuses, and Affiliated Regional Centres, and Community Education Facilities. VC rooms are used by students, instructors, and staff.

This component will be shared between UBC Faculty of Medicine learners, post graduate resident trainees, faculty, and staff internal and external to the Hospital and therefore access to these rooms should be from a public corridor.

As part of the CACMS (Committee on Accreditation of Canadian Medical Schools) Accreditation Standard for Medical Schools, the UBC Faculty of Medicine must demonstrate how the medical education program has priority in shared educational spaces required for learning experiences in medical curriculum. The UBC Faculty of Medicine room booking policy, advanced booking

process, and provincial-wide booking system must be used to demonstrate that the medical school meets the accreditation standard for priority scheduling in shared academic learning spaces across the province.

1.4 INTERPERTATION

This document is written as an output specification and defines what the Design-Builder (D-B) must achieve in the design and construction needed to support the VC rooms as listed in section 1.2 above.

Except as expressly stated otherwise, the D-B will carry out the design, construction, testing and commissioning of the infrastructure for the VC rooms in cooperation with the UBC FoM Project Team (UBC).

Infrastructure - includes but is not limited to Ceilings, Drywall, Electrical, Flooring, HVAC, Lighting,Network, Wireless Access Points and Security.

1.5 ROLES AND RESPONSIBILITIES

The D-B, in coordination with the UBC project team (UBC), will design, construct, procure, deliver, setup, install, test and commission all infrastructure required to complete the UBC rooms, with the exception of what is outlined as UBC responsibilities. The UBC will design, procure, deliver, install and commission all AV/IT equipment required for the VC rooms.
Recognizing the close partnership required to deliver the project scope, the roles and responsibilities of the UBC and the D-B have been identified in the table below. The purpose of this table is to ensure clarity around project scope, to improve project communication and to ensure all design requirements are achieved.

The UBC will be the sole approver of all room configuration, design, infrastructure, materials, furniture, colours, and finishes for all rooms. Any changes made after approval must be re-approved by the UBC.

Phase	UBC FoM Project team Responsibility	Design-Builder Responsibility
Project Initiation	• Develop and identify CAFs, AV/IT requirements stemming from the SoR, Specifications, Equipment List, etc., as wellas the location and funding provided • Ensure proposed location and space meetsrequirements as outlined in the SoR • Develop and manage AV/IT (not includingcomputers) technology budget and schedule	• Provide adequate location and space per SoR requirements
Project Planning (Schematic Designto Issue for Construction Drawings)	• Develop AV/IT designs based on functionalrequirements for the spaces • Coordinate with the D-B and HA AV/ITspecialist for the specific technology solution • Prepare and submit AV/IT infrastructuredrawings to the HA • Review, evaluate and approve all drawings and specifications for each project stage to ensure all UBC requirements are met • Approve furniture and equipment selection • Follow UBC change managementprocesses	• Meet regularly with UBC Point-of-Contact to review designs • Design UBC rooms in accordance to the SoR, design guidelines, and specifications, in coordination with UBC • Submit report from acoustical consultant to UBC at every design stage • Coordinate with HA AV/IT specialist to ensure UBC AV/ITtechnology are supported by HA technology • Provide CAD/REVIT files to UBC throughout thedesign phase • Obtain UBC sign-off at the end of each project phasebefore proceeding to next phase • Obtain UBC approval for any changes to the design,drawings, plans or schedule • Select non-VC equipment and furniture according to UBC specifications with the UBC

Facilities Construction	• Conduct site visits to ensure compliancewith UBC requirements • Validate that AV/IT and clinical equipmentinfrastructure requirements are correctly provisioned during construction • Approve installation of equipment, furniture and signage according to UBC specifications • Participate in final deficiency clearanceapproval before move-in	• Obtain UBC approval for any changes to the designs,drawings, plans or schedule • Provide access to UBC for site inspections at critical construction milestones, as specified during the design stage by UBC • Confirm with acoustical consultant that acoustic performancerequirements in all rooms are achieved and submit final reportto UBC for approval • Install signage according to UBC and HA guidelines. • Ensure deficiencies are cleared prior to move-in and start of AV/IT installation by UBC • If some deficiencies remain at the time that UBC is required to start AV installation, coordinate of critical infrastructure with UBC to enable AV installation with no damage to the AV and no additional cost to the AV installer
AV/IT Equipment Procurement and Implementation	• Confirm wired and wireless (e.g. Eduroam®) network and requirements (i.e. IP, VLAN, and switch configurations) • Liaise with HSSBC to confirm network configuration schedule • Prepare, issue, and award tender for AV/IT equipment, installation, testing and commissioning • Manage integration of all AV/IT systems with selected AV/IT contactor	• Liaise with UBC regarding any construction-related issues that affects AV/IT implementation
Move-in, Transition-to-operations and Project Close-out	• Update space in the UBC FoM Academic Space Inventory • Upload shared spaces to Resource Scheduler • Facilitate AV systems operational training • Submit handover AV/IT Technology documentation • Ensure Eduroam solution transition to operations process is followed	• Provide “as built” drawings • Ensure rooms are clean, secured and ready for handover to new owners • Conduct training/orientation of non-AV systems for UBC technical and administration staff and end-users

1.6 FUNCTIONAL REQUIREMENTS

VC rooms must enable all participants (located at all connected sites) to see, hear, and speak to the other participants, regardless of which site the participants are physically located. All participants must also be able to see (and hear, where applicable) other participants’ presentation material.

1.6.1 VC ROOM CAPABILITIES AND FEATURES (AV SYSTEMS ARE THE UBC SCOPE)

In order to meet the functional requirements, the VC rooms shall be equipped with a permanently installed VC system which includes the following capabilities and features:

1.6.1.1 Participants must be able to display content for all participants (at all connected sites) from a user provided mobile device.

1.6.1.2 The system will utilize two displays to show remote participants and content independently

- 1.6.1.2.1 System will utilize the left display to show remote sites while in a VC call
- 1.6.1.2.2 System will utilize the right display to show local content or remote content while in a VC call
- 1.6.1.2.3 System will utilize the left and right display to show local presentation content while not in a VC call

1.6.1.3 The video conferencing microphone(s) shall have the following features:

- 1.6.1.3.1 Designed for speech intelligibility and human voice frequencies
- 1.6.1.3.2 Placement of microphones shall be at participant in order to avoid the introduction of environmental noises such as HVAC.
- 1.6.1.3.3 One (1) push-to-talk microphone per three (3) participants. An alternative microphone solution that achieves all the requirements of this document’s specifications shall be approved by UBC.

1.6.1.3.4 One (1) wireless lapel mic and one fixed push-to-talk mic for presenter area (when partitionable rooms joined)

1.6.1.4 The video conferencing camera shall have the following features:

1.6.1.4.1 VC camera must auto-track the active talker. A maximum of two (2) adjacent participants can be framed in the shot when tracking the active talker.

1.6.1.4.2 VC camera must be positioned at the front of room centred to the participant seating configuration in order to capture 100% of room participants.

1.6.1.4.3 VC camera must be positioned such that when the audience is looking at the screens, they appear to be looking in the direction of the camera.

1.6.1.4.4 VC camera must have protection from theft and damage.

1.6.1.4.5 VC camera has a low tolerance for structure borne vibration which is magnified when using the zoom function. Dampening material shall be provided to eliminate any vibration in order to stabilize the image.

1.6.1.4.6 Displays need to be of adequate size to enable all participants to clearly see the content on the screen. Screen size is a function of the furthest participant's viewing distance.

1.6.1.4.7 Ratio of the distance from the displays to the most distant viewer (MDV) to image height will not exceed a factor of 6.0 (distance to most distant viewer, MDV, divided by a single image height) for all seats.

2 ROOM ENVIROMENTAL DESIGN

The room requires VC-appropriate architecture, acoustical treatments, wall and furniture colours, lighting, cooling, power and data ports, and cable pathways. The following sections describe requirements for additional aspects of room and VC system design.

UBC FOM technology-enabled learning spaces have active AV equipment 24 hours per day, 7 days per week. Spaces are primarily used during business hours (6am-6pm Monday-Friday), but can be used at any time.

2.1 ARCHITECTURE & INTERIOR DESIGN

2.1.1 GENERAL DESCRIPTION

2.1.1.1 The number of seats outlined in this document is for videoconferencing occupancy (all participants able to view the monitors and are viewed by the VC camera). There will be additional participants for local sessions and training. All infrastructure and furniture need to be designed to max participants occupancy and not only for the videoconferencing occupancy.

2.1.1.2 The space shall be rectangular with an aspect ratio of side walls to front/back walls of 1:1.13.

2.1.1.3 Site lines to the main screens (on display wall) required to be unobstructed from all seats.

2.1.1.4 Columns or other obstructions within the room envelope are not be acceptable. This is necessary to maintain the usability and orientation of the space.

2.1.1.5 The seating design is a rectangular or U-shaped seating, depends on the size of the room, with loose tables.

2.1.1.6 The minimum distance from the front wall to the closest seated participant required to be 1600mm.

2.1.1.7 The ratio of distance from displays to the most distant viewer (MDV), to image height, will not exceed a factor of 6.0 (distance from display to MDV divided by image height) for all seats.

2.1.1.8 The horizontal viewing angle for all seats will not exceed 60 degrees for both displays (measured from occupant seat to display center).

2.1.1.9 The entire front wall must be reinforced to permit secure mounting of equipment. Exact weight load to be coordinated by Project Co with based on AV system design and display sizes in compliance with FoM requirements.

2.1.1.10 The entrance is required to be at the back of the room (opposite the wall with the displays and camera).

2.1.2 WINDOWS

2.1.2.1 If exterior or interior windows exist, 90% or better blackout blinds with side rails/tracks shall be provided for these windows to facilitate an optimal viewing and environment.

2.1.3 DOORS

2.1.3.1 Access to the room shall be card access controlled.
2.1.3.2 Install kick plate on both sides of the door.
2.1.3.3 Door width to accommodate patient bed.
2.1.3.4 Glass hatch with integrated blinds.
2.1.3.5 Door hold open.
2.1.3.6 Refer to the section below for required acoustical performance.

2.1.4 WALLS

2.1.4.1 Refer to section below for required acoustical performance of the walls.
2.1.4.2 Install wall and corner protection throughout the room from floor to 1000mm AFF.

2.1.5 FLOORING

2.1.5.1 Flooring throughout the rooms will be carpet for acoustical attributes.

2.1.6 EQUIPMENT AND FURNITURE

2.1.6.1 The participant table shall be either rectangular or U-shaped, based on number of occupants.
- 2.1.6.1.1 Tables will have a 12 inch modesty panel.
- 2.1.6.1.2 In a room with 4-10 Videoconferencing occupancy, a rectangular table configuration shall be used, with one table or a ganged set of tables suitable for the number of occupants.
- 2.1.6.1.3 In a room with 10-20 Videoconferencing occupancy, a U-shaped table configuration opening towards the camera shall be provided for best viewing angles.
- 2.1.6.1.4 Additional tables and chairs will be needed for non-VC occupancy.

2.1.6.2 UBC shall provide final approval on proposed tables required to form the seating arrangement that best suits the seating capacity and geometry of the space based on expected use-cases.
2.1.6.3 Floor box placement shall be coordinated with the approved furniture configuration. For floor box requirements refer to the electrical section of this document.
2.1.6.4 Phone, wall mounted by the entrance and a Tele-conference phone on the tables.

2.1.7 COLOURS

2.1.7.1 The colour of the walls, carpeting, and chairs must be neutral as either solid grey or solid blue to provide visual definition to the participants relative to the background. The purpose of the solid colour is to avoid the reflected light from the background affecting colour quality of the camera images.
2.1.7.2 The colour of the table surface must be either antique white, light grey, or light maple to maximize reflected light.

2.2 MECHANICAL

2.2.1 HVAC AND HEAT LOAD

2.2.1.1 HVAC designs must account for all AV equipment and maximum occupancy to maintain temperatures comfortable for occupants and safe for AV equipment and designed to the acoustical performance requirements as outlined in this document.
- 2.2.1.1.1 Long-term ambient room temperature target for these VC rooms to operate in is 21 degrees Celsius with a relative humidity level of 30-50%.

2.2.1.1.2 Maximum short-term (1 hour) sustainable ambient temperature for these rooms is 24 degrees Celsius with a relative humidity level of 30-50%.

2.2.1.2 Active cooling shall be provided to account for the equipment and occupancy heat gains. The minimum cooling capacity shall be calculated and coordinated by Project Co. Maximum occupancy must be factored in for all heating calculations.

2.2.1.3 The location of the compressor must not interfere with the acoustical requirements and must not introduce vibration into any wall or bulkhead that supports a camera or displace device.

2.2.1.4 A dedicated thermostat, locally controlled shall be provided.

2.2.2 PROTECTION FROM WATER DAMAGE

2.2.2.1 All VC rooms must be designed and constructed to protect the AV equipment from the potential any damage caused by plumbing failures and condensation.

2.2.2.2 If pressurized water lines run above the AV system components, install a drip tray in the ceiling to prevent equipment damage in the event of a leak.

2.3 ELECTRICAL

2.3.1 LIGHTING

2.3.1.1 Lighting is a key factor in a properly functional VC room. Minimum requirements are as follows:

- 2.3.1.1.1 All participants to be well illuminated for the VC cameras;
- 2.3.1.1.2 Minimize reflections on screens and video display surfaces;
- 2.3.1.1.3 Avoid an overly illuminated or glaring participant area;
- 2.3.1.1.4 No hot spots or shadows on participants;
- 2.3.1.1.5 All participants to easily control the lighting conditions;
- 2.3.1.1.6 Illuminate the entire participant area.

2.3.1.2 Light reflecting off the table surface require to be at 15-20 degree angle.

2.3.1.3 Colour temperature to be 3500 degrees Kelvin. Different colour temperatures will not be permitted.

2.3.1.4 Lighting to provide a minimum brightness of 80 foot-candles measured at table height.

2.3.1.5 Light controls to be located by the entrance.

2.3.1.6 Dimmer shall have the following features:

- 2.3.1.6.1 Dimming range of 0% to 100% in steps of 5% or less

2.3.1.7 Lighting fixtures shall have the following features:

- 2.3.1.7.1 Fixture ballasts to support dimming steps of 5% or less.

2.3.1.8 Minimum of three (3) lighting zones shall be provided:

- 2.3.1.8.1 Display device lighting within one (1) meter of the display devices
- 2.3.1.8.2 Wall wash lighting
- 2.3.1.8.3 Participant and ceiling lighting

2.3.1.9 Dimmer controller shall have a minimum of 5 lighting presets:
All on; All off; Receiving; Presenting; (Custom)

2.3.2 POWER OUTLET

2.3.2.1 Convenience receptacles shall be provided over and above receptacles required for AV equipment:

- 2.3.2.1.1 Provide four (4) convenience receptacles at each wall for a total of sixteen (16) receptacles.
- 2.3.2.1.2 Provide one (1) floor box convenience receptacle for every four (4) participants in local session. Floor box shall also accommodate data outlets as specified in the section below.

2.3.2.2 AV equipment loads shall be calculated and coordinated by infrastructure designer.

2.3.2.3 Refer to section “Conduits and Cable Pathways” for AV equipment power receptacles locations.

2.3.3 CONDUITS AND CABLE PATHWAYS

2.3.3.1 Basket tray shall be sized for communications and audio-visual cable density plus 25% future expansion capacity:

2.3.3.1.1 Continuous, rigid, welded steel wire mesh spaced 50mm x 100mm;
2.3.3.1.2 Continuous T-weld on top rail of tray;
2.3.3.1.3 And Finish: electroplated zinc coating.

2.3.3.2 A zone conduit system shall be used in areas where basket tray is not feasible. Zone pull boxes c/w access hatches shall be spaced maximum 9 meters apart. All outlet box conduits shall homerun to the nearest zone pull box.

2.3.3.3 Power connection shall be adjacent to audio-visual outlet box.

2.3.3.4 Pathways shall avoid potential sources of electromagnetic interference by maintaining clearances of at least:
2.3.3.4.1 305mm from fluorescent ballasts;
2.3.3.4.2 305mm from electrical distribution conduit and cable less than 1kV;
2.3.3.4.3 1000mm from electrical distribution conduit and cable more than 1kV;
2.3.3.4.4 1220mm from motors and transformers;
2.3.3.4.5 And 305mm from HVAC equipment, ducts and pipes.

2.3.3.5 Audio-visual outlet boxes shall be masonry back box with minimum depth of 90mm. Outlet box shall be recessed if wall mounted below finished ceiling. All outlet boxes shall have cover plates installed and colour coordinated with other outlets and services.

2.3.3.6 Floor boxes shall not be used for any audio-visual cabling. Furniture will be movable and minimal support will be provided for setup and reconfiguration which must be considered in the AV design. Cable bundles extending from wall outlets and removable Velcro floor tracks are acceptable solutions for cable management of audio-visual cabling.

2.3.3.7 The bend radius shall be at least six (6) times the internal diameter for conduit that has an internal diameter of 50mm or less. The bend radius shall be at least ten (10) times the internal diameter for conduit that has an internal diameter more than 50mm.

2.3.3.8 The maximum number of bends between cable pull boxes in a conduit run shall be two (2) 90 degree bends.

2.3.3.9 Conduit runs shall have no continuous sections longer than 30m between pull boxes.

2.3.3.10 If a conduit run requires a reverse bend between 100 degree and 180 degree then a pull box shall be inserted into the bend but shall not be used as the bend.

2.3.3.11 Pull boxes shall be installed in fully accessible spaces.

2.3.3.12 Support and secure all boxes independent of the conduit connected thereto.

2.3.3.13 All conduit ends shall be protected by insulating bushings.

2.3.3.14 Conduit stub and insulating bushing shall be as short as possible inside the outlet box to ensure that it does not obstruct installation of the audio-visual device.

2.3.3.15 All conduits shall be left with a nylon pull string installed.

2.3.3.16 Each outlet box shall be clearly marked in back of box with an ‘AV#’ that corresponds to the riser diagram and floor plan.

2.3.3.17 Audio-visual conduits and outlet boxes shall be colour coded with paint or similar. The colour shall be different from other systems including communications pathway.

2.3.3.18 Quantity and size of conduits will be designed by Project Co to facilitate final AV system designs. At a minimum, Project Co will provide:

AV Infrastructure Table:

AV Source	**AV Destination**
Primary pull box or Rack	Microphones
Primary pull box or Rack	Displays
Primary pull box or Rack	Table Inputs
Primary pull box or Rack	Speakers
Primary pull box or Rack	Plenum Space
Primary pull box or Rack	VC Camera 1
Additional AV infrastructure for dividable rooms	
Primary pull box or Rack	Airwall Sensor
Primary pull box or Rack	VC Camera (Audience joint)

Primary pull box or Rack	VC Camera (Presenter)
Primary pull box or Rack	Presenter Inputs

2.4 DATA & TELEPHONE

2.4.1 WI-FI:

2.4.1.1 Provide a complete wireless network infrastructure throughout the AV spaces with no dead spots allowing any standard network applications or telephone applications to be utilized.

2.4.1.2 A wireless predictive survey shall be performed to provide 100% wireless coverage throughout each AV room with a minimum signal strength of 70dB for both 2.4GHz and 5GHz bandwidth. The predictive model shall consider building construction materials. Once the AV rooms are near completion, the predictive model shall be verified by performing a physical wireless study. Once complete, the model and results shall be handed over to the UBC FoM team for review and approval.

2.4.1.3 The proposed solution shall be able to support the following criteria:

2.4.1.3.1 Density shall be calculated allowing for two (2) mobile devices per participant

2.4.2 WIRED DATA PORTS:

2.4.2.1 Each AV system shall have three (3) data drops behind the right display.

2.4.2.1.1 1x assigned to the VC VLAN

2.4.2.1.2 1x assigned to the house network

2.4.2.1.3 1x assigned to the UBC network

2.4.2.2 Two (2) convenience data drops for 2 wall for a total of four (4) convenience data drops.

2.4.2.3 One (1) data drop per floor box.

2.4.2.4 One (1) data drop directly opposite displays at 2134mm AFF for IP camera.

2.4.2.5 Enable access to both VIHA and UBC network.

2.4.3 PHONE PORTS:

2.4.3.1 One (1) VoIP phone data drop to be wall mounted by the door.

2.4.3.2 One (1) VoIP phone data drop to accommodate a conference speakerphone in centre of the room.

2.5 ACOUSTICS

2.5.1 GENERAL CHARACTERISTICS

2.5.1.1 Room acoustics play a key role in ensuring presenter and audience speech intelligibility.

2.5.1.2 Design characteristics intended to support the acoustical requirements must be validated by a qualified and approved acoustical consultant. The acoustical report generated will address acoustical requirements for the HVAC system, ambient noise levels, lighting ballasts, reflective surfaces, treatments, reverberation, and other noise mitigation methodologies.

2.5.1.3 Acoustical consultant shall provide acoustical performance validation test and report at milestones as defined in the project agreement to be issued to UBC FoM Team for approval.

2.5.1.4 There are three (3) primary factors for consideration:

2.5.1.4.1 Background noise which considers ambient noise from HVAC and other systems that may create continuous/intermittent noise in the space;

2.5.1.4.2 Sound isolation which considers noise transfer from outside the space to inside the space; and

2.5.1.4.3 Interior acoustics which considers the movement and reflection of sound waves within the room.

2.5.2 BACKGROUND NOISE

2.5.2.1 Provide good speech intelligibility for local and remote listeners. The background noise target shall be Noise Criteria (NC) 25-30 with no pure tones.
2.5.2.2 Achieving these low NC levels means very tight control of fan noise and air flow conditions.
2.5.2.3 Noise-producing HVAC equipment including mixing boxes, fan-powered mixing boxes, and fan coil units shall not be located inside VC rooms or within the ceiling plenum space.

2.5.3 NOISE ISOLATION

2.5.3.1 It is critical to the proper operation of the VC room to achieve adequate sound isolation between the rooms and adjacent spaces and for dividable rooms, in-between the two sections.
2.5.3.2 The following targets are applicable to all VC rooms:
- 2.5.3.2.1 All perimeter walls must achieve a Sound Transmission Class (STC) rating of STC 55. The door must be targeted for a purpose built STC 45.
- 2.5.3.2.2 Noise isolation to rooms above and below are set at minimum STC 50.
- 2.5.3.2.3 A target Impact Isolation Class (IIC) 65 rating must be set for the floor/ceiling system.
- 2.5.3.2.4 The dividable wall shall have a rating of STC 55.

2.5.4 INTERIOR ACOUSTICS

2.5.4.1 VC rooms must have appropriate acoustical conditions to optimize the rooms for presentations, VC, and/or monitoring. Appropriate acoustical treatment must be installed to control reverberation, minimize reflections, flutter echo and other acoustical issues that may adversely affect the microphone pickup.
2.5.4.2 Reverberation time must be 0.45 to 0.55 seconds in the mid and high frequencies, with controllable low frequency energy.

2.6 SECURITY

2.6.1 ROOM ACCESS

2.6.1.1 All entrances to the VC rooms will include an RFID Card Reader

2.6.2 EQUIPMENT

2.6.2.1 The display mounts require a padlock secured via 4 digit combination lock.
2.6.2.2 The camera, codec, and Touch 10 require a 4 digit combination T-Lock style laptop cable lock.

FACULTY OF MEDICINE

Design Guidelines and Functional Requirements for Learning Spaces: On-Call Suite

OCTOBER 2, 2021

Version	Date	Author(s)	Description of Change
1.0	August 26, 2019	Frenklach	Creating doc
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1 INTRODUCTION

1.1 FACULTY OF MEDICINE DISTRIBUTED MEDICAL PROGRAM

In 2004, the University of British Columbia (UBC) Faculty of Medicine (FOM) initiated its Distributed Medical Program (DMP), the purpose of which is to provide equal access to medical teaching and training for students, residents, and practicing physicians across BC. The DMP is made possible by technology-enabled learning spaces located at university sites (UNBC, UBCO, UVic, and UBC) as well as Clinical Academic Campuses and Affiliated Regional Centres located across the province. Many of these spaces are also videoconference (VC)-enabled and are connected to each other via the central VC Bridge, all of which rests on a dedicated network called the Distributed Medical Program Audiovisual (DMP-AV) network. The requirements laid out in this document support the Accreditation standards defined by the Royal College of Canada.

1.2 DOCUMENT PURPOSE AND APPLICABLE SPACES

This document is part of a collection of documents referred to as the **UBC FOM Design Guidelines and Functional Requirements for Learning Spaces**. They provide requirements for the design of the learning spaces including furniture and equipment.

This document provides the design guidelines and functional requirements for the spaces included in the on-call Suite as they are identified in Appendix 1T - UBC FoM Design Guidelines and Functional Requirements:

Ref #	Space ID	# of Unit	NSM	Total NSM
Y3.01	Lounge - Study Stations and Book Collection - UBC	1	40	40
Y3.02	Alcove - Lockers - UBC	1	5	5
Y3.03	On-call room	1	7	7
Y3.06	On-call room - Large	1	10	10

1.3 PROCESS AND APPROVAL

The UBC FOM Project Team (FoM Team) shall be required to provide approval at each design stage and construction phase milestones, as specified in the Project Agreement (PA) and as required, to ensure architectural, infrastructure, and all supporting systems are designed and implementation as specified.

1.4 ROOMS USAGE DESCRIPTIONS

The on-call suite is dedicated for the UBC Faculty of Medicine undergraduate students and post-graduate resident trainees that are at the site and is used of the call activities including lockers (e.g, street clothes, books, stethoscope, laptops and backpack), relaxation, networking, and resting.

1.5 FUNCTIONAL REQUIREMENTS AND DESIGN CRETERIA

1.5.1 ON-CALL SUITE GENERAL

1.5.1.1 The on-call suite require to be designed as a centralized suite.

1.5.1.2 The location must be carefully considered so that the route between this area and inpatient units and the Emergency Department is safe and secure, particularly after hours, and within 5 minutes walking time.

1.5.1.3 Security: This area must to be secure, 24/7 access via RFID Card Reader.

For each of the rooms, the room must be:

1.5.1.3.1 24/7 access via RFID Card Reader.

1.5.1.3.2 Safe and secure within the room in case someone unauthorized entered the on-call suite.

1.5.1.3.3 Enable distress alerting Security without dialing a phone.

1.5.1.3.4 Security must identify immediately and easily the location of the room where the alert was made from.

1.5.1.4 All walls and corners to include wall and corner protection from floor to 1000mm AFF

1.5.1.5 Wi-Fi:

1.5.1.5.1 Provide a complete wireless network infrastructure throughout the spaces with no dead spots allowing any standard network applications or telephone applications to be utilized.

1.5.1.5.2 A wireless predictive survey shall be performed to provide 100% wireless coverage throughout each AV room with a minimum signal strength of 70dB for both 2.4GHz and 5GHz bandwidth. The predictive model shall consider building construction materials. Once the rooms are near completion, the predictive model shall be verified by performing a physical wireless study. Once complete, the model and results shall be handed over to the UBC FoM team for review and approval.

1.5.1.5.3 Density shall be calculated allowing for two (2) mobile devices per participant

1.5.2 ON-CALL ROOMS:

1.5.2.1 The on-call rooms to be organized in groups and further from the Lounge with a location for clean and soiled linen and scrubs carts.

1.5.2.2 At list of one of the on-call rooms must be design as accessible room and one of the on-call rooms be outfitted for breastfeeding with a small fridge and a comfortable sofa.

1.5.2.3 Must not transfer noise in-between the rooms and between the corridors to the rooms with STC 45. Within the rooms Noise Criteria (NC) 25-30 with no pure tones. The location of the HVAC compressor must not interfere with the acoustical requirements.

For further acoustical consideration refer to the acoustical paragraph below.

1.5.2.4 If exterior windows exist, 90% or better blackout blinds shall be provided for these windows.

1.5.2.5 Access will be controlled by RFID Card Reader and the door hardware will be with a deadbolt from the inside and "Occupy/Vacant" indicator on the outside.

1.5.2.6 Support study and resting environment with a bed, study table and a comfortable chair.

1.5.2.7 A dedicated thermostat, locally controlled must be provided.

1.5.2.8 Connect to the Hospital's Dictation system.

1.5.2.9 Install a phone by the bed.

1.5.2.10 Secure personal belonging when leaving the room without the use of a key or a lock in a locker with a digital lock.

1.5.2.11 Install a full height mirror.

1.5.2.12 Room light control: one (1) by the door and one (1) by the bed.

1.5.2.13 Power outlet: one (1) duplex by the bed and two (2) duplex above table.

1.5.2.14 Data ports above table for computer, phone and Hospital dictation system

1.5.3 LOUNGE

1.5.3.1 The Lounge must have access to natural light.

1.5.3.2 The noise from the Lounge must not interfere adjacent spaces. For further acoustical consideration refer to the acoustical paragraph below.

1.5.3.3 Wall mounted phone by the entrance.

1.5.3.4 A dedicated thermostat, locally controlled to be provided.

1.5.3.5 The room will be divided into: Eating area; Seating/relaxing and watching TV; and Computer area.

1.5.3.5.1 Eating area:

- Kitchenette for snack preparation with fridge, microwave, coffee maker, sink, dishwasher, durable and easily cleaned surface cabinets and countertop.
- Capacity for vending machines.
- Seating area around a table.
- Power to include all appliances and additional four (2) duplex convenience power by the seating area.
- Data port by the seating area for a wall mounted phone.

1.5.3.5.2 Seating/relaxing and watching TV:

- TV wall mounted. Size to calculate by the size of the seating area. Connected to the Entertainment system of the Hospital or cable TV.
- Power to include six (4) duplex convenience power distributed around in the seating area.
- One (1) Data port by the seating area for a wall mounted phone.

1.5.3.5.3 Computer Area:

- Two (2) computer stations
- Printer.
- Each station:
    - Computer power and data
    - Data for phone.
    - Connection to the Hospital Dictation system.
    - UBC network

1.5.4 LOCKER AREA:

1.5.4.1 Secure personal belonging including a backpack and coats in a locker with a digital lock.

1.5.4.2 Install a full height mirror, and/or half height with a shelf and power.

1.5.4.3 Include a small mobile bench.

1.5.5 SHOWER AND WASHROOMS

1.5.5.1 For design parameters refer to Staff washrooms and showers.

1.5.5.2 The shower and washrooms require to be in a non-public area.

1.5.5.3 At least one washroom and one shower need to be in a single room for Non-Binary individuals.

1.5.5.4 Shower to include “wet area” with shelf for soap and “dry area” with three (3) hooks and a bench. There will be a physical separation between the wet and the dry area.

1.5.5.5 Shower door to be lockable.

1.6 ACOUSTICS

1.6.1 GENERAL CHARACTERISTICS

1.6.1.1 Design characteristics intended to support the acoustical requirements must be validated by a qualified and approved acoustical consultant. The acoustical report generated will address acoustical requirements for the HVAC system, ambient noise levels, lighting ballasts, reflective surfaces, treatments, reverberation, and other noise mitigation methodologies.

1.6.1.2 Acoustical consultant shall provide acoustical performance validation test and report at milestones as defined in the project agreement to be issued to UBC FoM Team for approval.

1.6.1.3 There are three (3) primary factors for consideration:

- 1.6.1.3.1 Background noise which considers ambient noise from HVAC and other systems that may create continuous/intermittent noise in the space;
- 1.6.1.3.2 Sound isolation which considers noise transfer from outside the space to inside the space; and
- 1.6.1.3.3 Interior acoustics which considers the movement and reflection of sound waves within the room.

1.6.2 BACKGROUND NOISE

1.6.2.1 Achieving low NC levels means very tight control of fan noise and air flow conditions.

1.6.2.2 Noise-producing HVAC equipment including mixing boxes, fan-powered mixing boxes, and fan coil units shall not be located inside rooms or within the ceiling plenum space.

1.6.3 ON CALL ROOMS AND LOUNGE NOISE ISOLATION

1.6.3.1 It is critical to achieve adequate sound isolation between these rooms and adjacent spaces.

1.6.3.2 The following targets are applicable for the on-call rooms and lounge:

1.6.3.2.1 All perimeter walls must achieve a Sound Transmission Class (STC) rating of STC 55. The door must be purpose built STC 45.

1.6.3.2.2 Noise isolation to rooms above and below are set at minimum STC 50.

1.6.3.2.3 A target Impact Isolation Class (IIC) 65 rating must be set for the floor/ceiling system.