



Applied One Functional Program

Challenge Phase Engagement Outcomes

April 28, 2023

[APSC.UBC.CA](https://apsc.ubc.ca)

Contents

INTRODUCTION	3
KEY THEMES	5
UNDERSTANDING SPACE TYPES BY FUNCTION	7
NEXT STEPS	10

YOUR GUIDE TO THIS DOCUMENT

This document is organized into four sections:

- **Section One** orients to the goals of Applied One, the Functional Program Process and the engagement process thus far.
- **Section Two** summarizes 16 core themes from the Challenge Phase engagement process that will guide the planning and design of spaces of the Applied One facility.
- **Section Three** describes how engagement feedback will inform the planning and design of space types in Applied One.
- **Section Four** outlines next steps.



SECTION ONE

Introduction

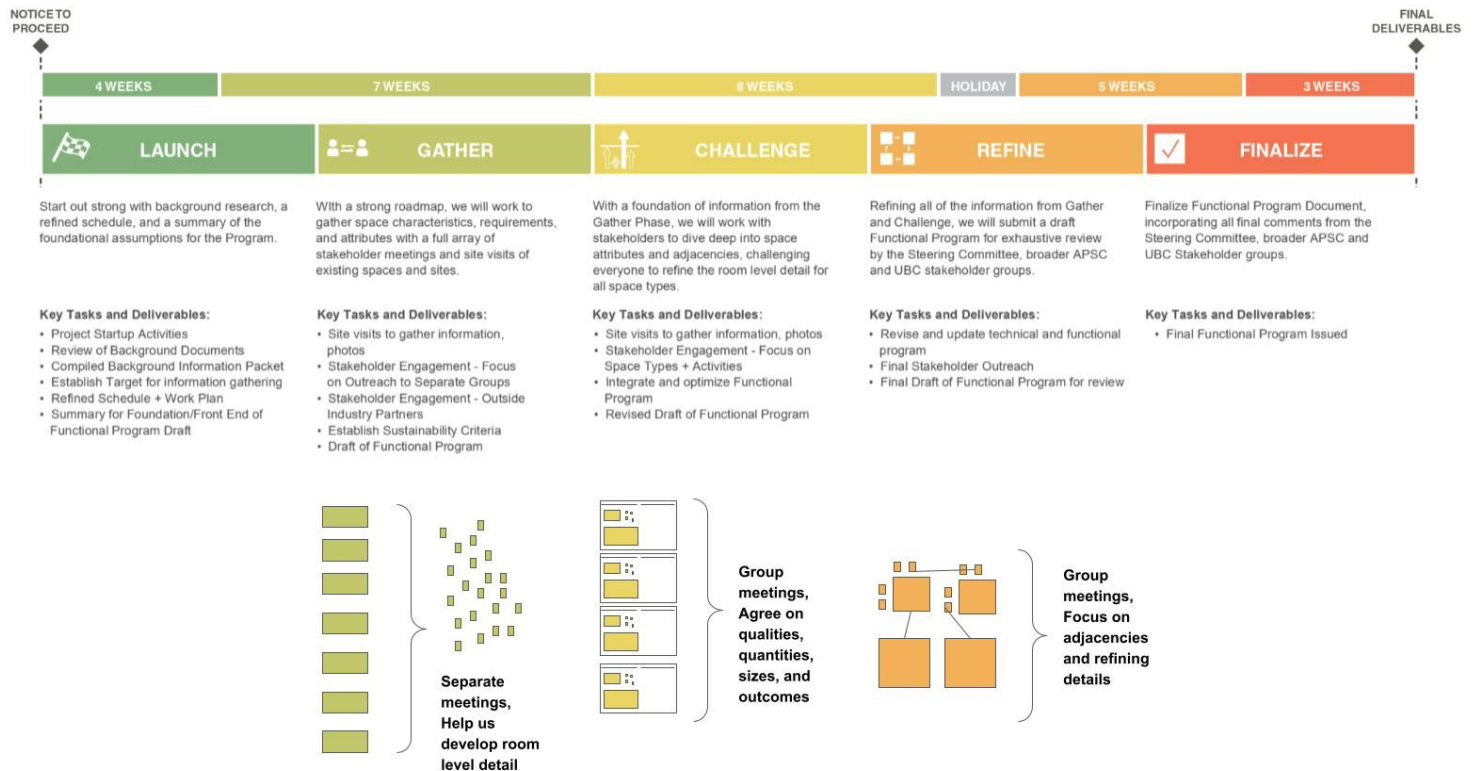
Applied One is designed to be a catalyst for the Faculty of Applied Science (APSC) Strategic Plan. It is the arena where the disciplines of design, technology, planning and policy-making converge to create Solutions for People, design Thriving Cities and Communities and accelerate improvements in Planetary Health.

The Applied One planning process is in its early stages. Applied Science and UBC Infrastructure Development have engaged consultants Miller Hull and Local Practice (MH&LP) to develop a Functional Program. A Functional Program is a guide for the building design team. It describes the “ingredients” of the building: the vision for the building’s use, spaces required, the size of those spaces and the appropriate clusters of spaces. Upon completion of the Functional Program, consultants will be engaged to design the building and the site.

Functional Program process

The Functional Program process includes five steps. We are near completion of the Challenge Phase. During the Challenge Phase our consultant team tested early concepts of space types, allotment, size and arrangement.

FUNCTIONAL PROGRAM PROCESS



Ongoing engagement processes

Two streams of engagement will run parallel to the Functional Program and architectural design processes. These streams will inform the Functional Program, design and procurement processes for Applied One, but they also will influence how we do things more broadly within APSC.

ENGAGING WITH MUSQUEAM

Engagement and consultation with Musqueam are ongoing priorities that will extend through and beyond the Applied One process.

Through engagement, we will explore how the operation and design of Applied One could reflect Musqueam culture, traditional knowledge and the story of place. The outcomes of engagement and partnership may not be limited to Applied One but extend to future APSC initiatives.

EMBEDDING EQUITY IN DESIGN

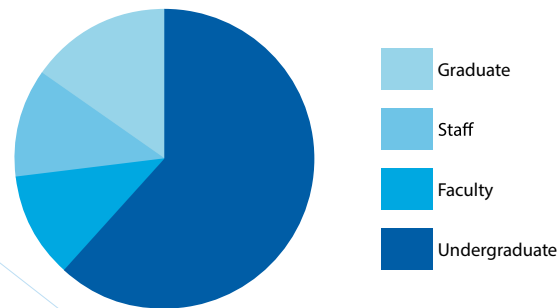
Equity, Diversity and Inclusion are central principles for APSC's planning and delivery of programs, standards for workplace culture and spatial design. The engagement process intends to target and uplift the voices of groups who are underrepresented in the Faculty in order to define an appropriate process for engagement and co-generate design outcomes. Where relevant, the outcomes of this process will inform other APSC projects. We anticipate that stakeholders and partners in this group will address:

- Belonging - how does the building promote activities that foster inter-cultural trust and individual belonging?
- Opportunities and barriers - what ways has the built environment presented opportunities for or barriers to feeling welcome and included?
- Accessibility
- Childcare
- Ongoing feedback - how does the building remain responsive to its occupants?

Challenge phase engagement process

MH&LP hosted deep-dive workshops with staff and faculty representatives from across APSC to gain feedback on whether their proposed space types support learning, research, making, displaying work and hosting visitors. We also launched a survey to invite more voices - especially student voices - to contribute to our understanding of what makes a space successful. Through the engagement process we heard from over 600 members of the Applied Science community.

APSC IDENTITY OF SURVEY PARTICIPANTS



APSC UNIT	PORTION OF SURVEY PARTICIPANTS
ECE	15%
MECH	14%
CIVL	12%
N/A	10%
SALA	9%
CHBE	8%
MTRL	6%
APSC DO	6%
SBME	4%
ENG PHYS	3%
MINE	3%
INTG ENG	3%
NURSE	3%
GEO	2%
MANU	2%
SCARP	1%
ENV ENG V	1%
ENV ENG (UNBC)	1%
SOE	0%

Using what we heard

The project is moving into the Refine Phase where MH&LP will use what was learned to inform and refine the direction included in the Functional Program.

SURVEY ANALYSIS APPROACH

In addition to reviewing survey results en masse, we took a granular approach and analyzed responses through multiple cross-tabulations, including:

- Delineating responses based on undergraduate students, graduate students, faculty and staff
- Comparing the responses of Materials, Mining, SALA and SCARP, the unit groups that will be relocated into Applied One
- Exploring how identify factors such as gender may yield different responses

While the cross tabulations point to subtle differences and areas for further inquiry, we did not consistently have an appropriate sample size to make conclusive statements about how groups experience or use space differently. This is factored into how we describe the themes and directives shared within this document and how we will plan for further engagement.

Thank you to all who have participated in the process so far and we look forward to engaging with more of you as the design process unfolds.

SECTION TWO

Key themes

Critical components of space

The critical components of space represent consistent themes heard throughout the Challenge Phase engagement process. These themes cross-cut unit and user types. They offer guidelines for Applied One as a whole.

- **Social spaces for all scales of culture building.** Shared social spaces are important for fostering relationships across discipline, role and identity. Defined spaces for sub-communities are also valued for their role in shaping one's identity and sense of belonging. Assigned space for culture building at all scales will be important for building a collaborative ethos within Applied One.
- **Space designated for quiet.** Finding a quiet space to study, work or rest shouldn't be difficult. While these spaces may not need to be reservable or enclosed, they should be defined as quiet zones, and should have many electrical outlets.
- **Intentional space for collaboration.** Just as individual work spaces require a space free of distraction, so do collaborative spaces. Spaces that can be reserved for group work or study that are equipped with virtual and analog collaboration tools (moveable furniture, whiteboards, AV, electrical outlets) would contribute to the success of collaboration spaces.
- **Human health is human comfort.** Maximize human health through design. Natural light, greenery, thermal comfort, ergonomic furniture, fresh air, and acoustic performance are essential attributes of human comfort and they contribute to human health and wellbeing.
- **Concentrate expertise.** It would be valuable to have specialized equipment (and the experts that support it) in a central hub.
- **A culture of mutual respect.** Shared equipment and spaces require operational procedures to maximize the opportunity that comes with common investment. Applied One will require an operational plan to manage shared resources.
- **Access for who and when?** Students value 24/7 access to study spaces, workspaces and shops for use after class. Access should be considered alongside wellness and, custodial, safety and risk procedures.
- **Embedding EDI.I.** Equity, diversity, inclusion and Indigeneity needs intentional consideration. A defined engagement process to target groups is important.
- **Show, tell and host.** Applied One should offer spaces to collaborate with external partners, host events at a large scale and showcase the work done inside.



Wellbeing by design

There are spaces that provide the necessary armature to complete core activities of teaching, learning and research, and then there are elements of space that make people feel welcome and support human health and wellbeing. The following themes were regularly raised by engagement participants as important to their wellbeing.

- **Areas to be active.** When asked about spaces to support wellbeing, the most prominent theme was a desire to have spaces that support physical activity. For some this is a room that could host yoga classes, for others it is a sign out desk for sports equipment, others still would value an indoor/outdoor fitness facility. Physical movement is an important component of wellbeing for many.
- **Use of materials.** Material choice affects the feeling of welcome and desire to stay in a building. Natural materials, colour and soft surfaces were identified as preferred materials.
- **Connection to the outdoors.** Greenery, natural light, views to the outdoors and a physical connection to the outdoor spaces.
- **Food is a magnet (and a necessity).** Healthy, affordable food options are vital for everyone. A multiplicity of these spaces, ranging from cafe/restaurant to a kitchenette will give users options that suit their needs. As Applied One is designed, the project team will need to explore what food-for-purchase options are appropriate to provide in the building, and what would be better provided by facilities nearby.
- **Other themes, aligned with overall critical space themes include:** human comfort, designated quiet space and space for rest.

SECTION THREE

Understanding space types by function

Engagement feedback was focused into functional space-type categories. The feedback we've summarized into space types will influence how the Functional Program describes the characteristics, adjacencies and requirements of spaces. While it provides direction, the inclusion of feedback will be evaluated against other project goals and tradeoffs.

Learning spaces

Learning spaces and curriculum should emphasize in-person, hands-on experiential learning opportunities for groups and individuals. While large-format classrooms are desired by faculty, and are lacking across campus, students expressed that they generally do not prefer this mode of learning.

Study spaces

Maximize the availability of informal study spaces that offer ample electrical outlets. Spatial components like natural light, views of the outdoors and acoustic privacy help make these spaces successful. Classrooms can offer some of those spaces when not in use. Personal comfort is important: ergonomic and comfortable seating, soft lighting, and a distinction between silent and collaborative spaces are attributes of successful study spaces. Prioritize the inclusion of informal study spaces over reservable enclosed rooms for individual study – those areas are best for collaboration.

Collaboration spaces

Collaboration spaces require moveable tables and chairs and reliable availability. Being able to reserve space for collaboration is more important than when studying alone. Analog collaboration tools are valued: white/lightboards, space to lay out documents. SALA students note the importance of places to pin up drawings as essential to study spaces.

Staff and faculty prioritize AV systems for video calls and hybrid meetings significantly more than students.

Shops and makerspaces

Access to small-scale fabrication tools, machines to make prototypes, extended hours and staff support and storage for projects being worked on are essential components of shops and maker spaces. Proximity to faculty office spaces for mentorship and support, whiteboards and access to views outdoors and daylight are the least prioritized spatial characteristics of shops and maker spaces.

Because Applied One will be a resource for all of UBC APSC, shops and makerspaces should be described with organizational principles: low-tech to high tech, restricted to more-open access, low biosafety measures to higher biosafety measures. With multiple users, allocation of dedicated space for work and storage is important. Consider the use of moveable casework/storage to support the flexibility of spaces. And because multiple users will have different experience levels, (a) dedicated space(s) for supervising the shop and "gatekeeping" access to equipment will be required.

As disciplines that value hands-on learning opportunities, consider how the shops and makerspaces can facilitate teaching through allocating space for demonstration around specific equipment, and integrating A/V equipment.



Computing labs

A fundamental component of computing labs must be computer access for complex software and having monitors or dual screens that you can plug into. Extended hours and staff support are important for students. Undergraduate students and Faculty value having small group meeting areas in/near these spaces more than graduate students.

Experiment labs (wet and damp labs)

When asked about priorities for “experiment labs” survey participants valued distinguishing between graduate and undergraduate student experiment labs. In addition to workbenches and appropriate fume or snorkel hoods, small group meeting areas and storage for personal belongings are valued. Storage prevents working space from becoming cluttered, as does the idea of a “hoteling workspace” for students. Hoteling stations also have the benefit of minimizing year-over-year clutter that is accumulated by graduating students. Having a work/study space close by for working with data sets is also important. Extended hour access and staff support is valued in experiment labs.

Labs are often not friendly to wheelchairs - apply Learning Space guidelines for accessibility in teaching and research labs.

Visibility into labs can be beneficial for training, access, keeping clean and offering informal learning, but it can also contribute to a “fishbowl effect” and could conflict with research requiring confidentiality. Balance is required.

Studios and project spaces

The fundamental characteristics of studios and project spaces are: space to design and assemble models/creations, sinks, storage, and space to layout documents and resources. Places for analog collaboration (white/lightboards), and proximity to workshops are also priority spatial components. While all units have spaces for student studios or projects, the function of those spaces (and associated furniture and equipment) are different and should be considered in the Functional Program. For instance, different units require differing levels of:

- Acoustic barriers between critique spaces
- Power
- Spaces for social connection

Faculty value having an attractive place to show/meet with research, community and industry partners more than students.

Faculty + staff workspaces

Both faculty and staff workplaces must offer flexible meeting spaces, adequate storage and conference rooms with video-conference ability. Faculty value private offices with access to meeting spaces. Staff split their preference between private and shared enclosed offices. With the exception of open offices, all other office design elements were frequently selected, suggesting that there is importance to all proposed elements of workplace design.

Gathering around food is a critical micro-community activity. Kitchenettes and lunch room, as spaces for gathering, are an important component of the workplace environment both to support human comfort and relationship building.

Display

Applied One should offer spaces for changing or dynamic displays and exhibits and onto large and interesting objects, so long as operational mechanisms ensure that these spaces are curated and maintained. The APSC community enjoys seeing people actively engaged in projects and research. Views into labs, studio spaces and fabrication spaces should be thoughtfully maximized to offer visual intrigue while respecting the privacy of inhabitants and feeling on show.

Visitors

Curate the experience of newcomers and visitors; consider how the space can onboard, welcome and excite visitors through wayfinding, display, and intentionally welcoming spaces. Visiting students would value access to lounge areas with comfortable furniture, including a space to relax between classes and a place to heat up or eat food with others. Lounge spaces should also be providing for visiting faculty and staff, but in addition to a place to work, and a place to meet with small to mid-sized groups. Places to eat food with others could be a kitchenette, but also a place to purchase food and coffee.

End of trip facilities (showers, lockers) should also be considered for visitor-use.

Community and culture

Places to eat and relax are critical components of culture-building. Outdoor areas for gathering are as important as indoor areas for social events. Undergraduate and graduate students should have access to space specifically dedicated to them.



SECTION FOUR

Next steps

We are now moving into the Refine Phase of the Functional Program. At this phase of the Functional Program process, we will review the draft Functional Program with user groups in Mining, Materials, SALA and SCARP, and modify as required before issuing a final draft.

WE ARE HERE

