

Applied One: Feasibility Report

October 16, 2020



THE UNIVERSITY OF BRITISH COLUMBIA
Applied Science

local • MILLER HULL

ACKNOWLEDGEMENTS

We acknowledge that the land on which the University of British Columbia's Vancouver campus is located in the unceded territory of the Coast Salish Peoples, including the territories of the xʷməθkʷəyəm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō and Səlílwətaʔ/Selilwitulh (Tsleil- Waututh) Nations. We acknowledge them and others who care for the land as its past, present, and future stewards.

Prepared for UBC Properties Trust and the Faculty of Applied Science, University of British Columbia

Prepared by:



October 16, 2020

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EXECUTIVE SUMMARY

Applied One is a proposed facility that will serve the Faculty of Applied Science at UBC in its mission to transform itself and its vision to transform the world.

As an embodiment of the Faculty's commitment to collaboration in face of 21st century global challenges, this project delivers on the need for a facility that supports diffusive interdisciplinary research, experiential learning, and creative partnerships. Applied One is envisioned as a centre of gravity for the Faculty of Applied Science (APSC), designed in a way that compels new learning in spaces that foster creative exploration, intercultural competence and technical innovation. Applied One provides 32,300 gross square meters of space to research, create, learn, relax, and collaborate. This project is an opportunity to realize the transformation envisioned in the *Applied Science Strategic Plan*¹, and share the Faculty's departmental and cross-disciplinary achievements on a global stage. Applied One is driven by the desire of students, staff and faculty to work and learn differently in order to create lasting progress in response to global challenges - this unprecedented facility plays a key role in realizing this dream by providing physical space for this work to thrive.

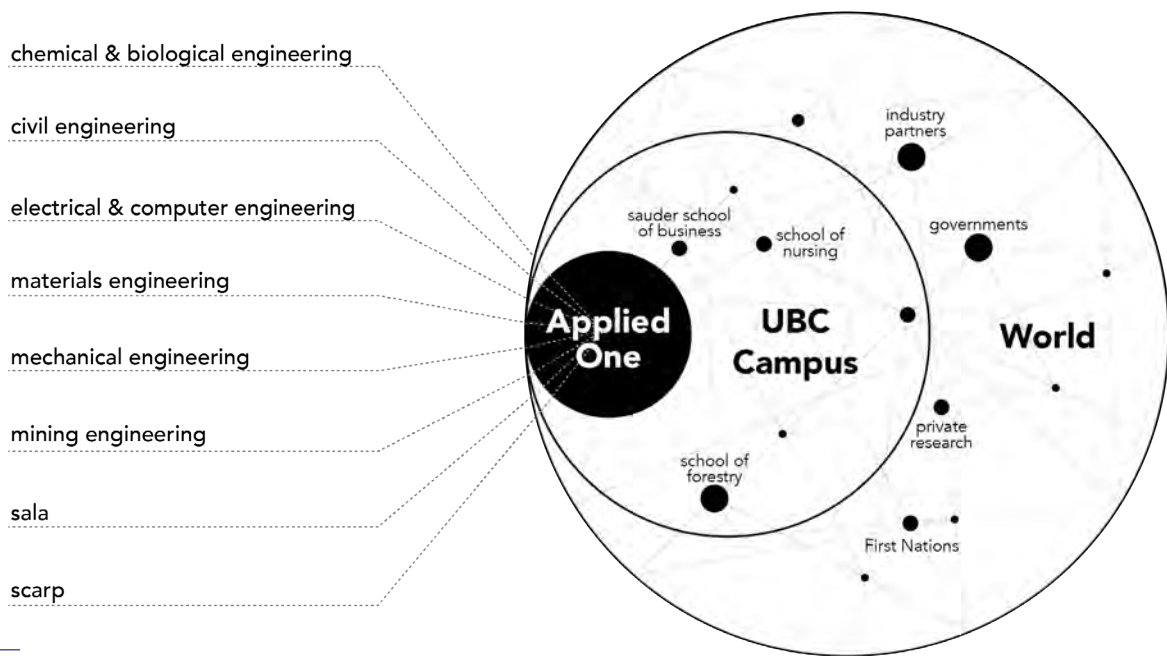
The constituents of the Faculty of Applied Science currently occupy spaces in 25 different buildings across the University of British Columbia Vancouver campus, with facilities dispersed across multiple locations. Applied One seeks to purposefully and deliberately coalesce expertise from the entire Faculty, as well as provide new homes for the School

of Architecture and Landscape Architecture (SALA), School of Community and Regional Planning (SCARP), the Norman B. Keevil Institute of Mining Engineering, and Department of Materials Engineering.

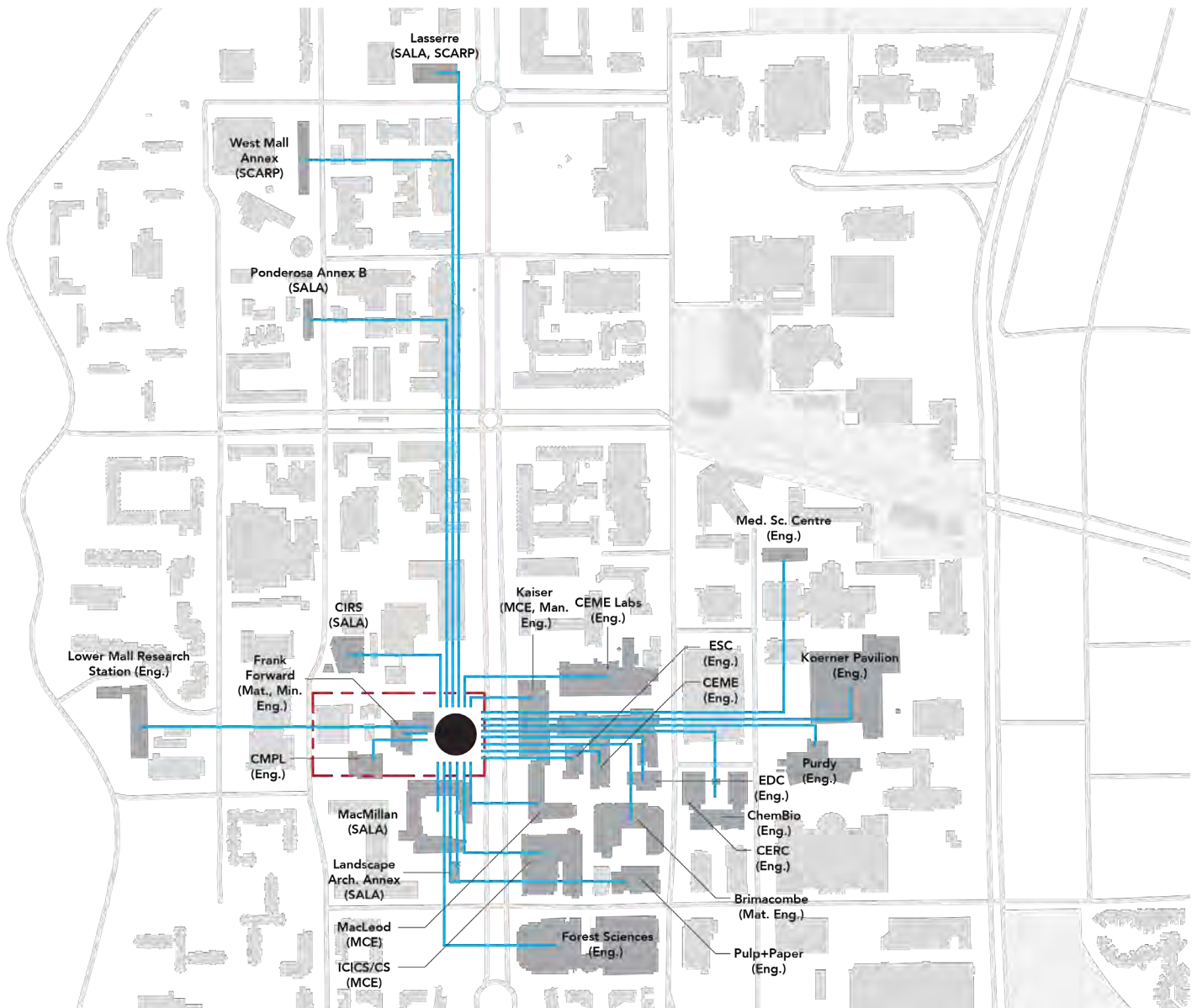
Foundational to the concept of Applied One is the Faculty's commitment to creating a positive impact through research and teaching that ripples out across multiple scales - from academic units, to UBC, and out to the world. Applied One realizes the Faculty's aspirations to transform the way academic units work together to address global grand challenges that require complex solutions, such as climate action, urbanization, and reconciliation with historic systems of injustice. Through providing new space to collaborate and visibly share work in new ways, Applied One is intended as a keystone catalyst for the growth of the Faculty of Applied Science onto the global stage as a reputable institution in service to people, place, and planet.

Alongside members of the Faculty, Applied One intends to also host facilities for UBC Campus & Community Planning, Infrastructure Development, Information Technology, Student Services, and Food Services. Beyond UBC, Applied One aims to provide dedicated spaces for reaching out to public and private industry programs in order to forge links from the Faculty to the world. Reflecting the growth of UBC and the Faculty, Applied One will also include large, flexible teaching spaces.

The proposed location for Applied One is on Main Mall, directly across from the Fred Kaiser Building. The site encompasses the current footprint of the Frank Forward building. Fairview Commons flanks the site to the north, and the H.R. MacMillan building is located directly to the south.



¹ [UBC Applied Science Strategic Plan: Home](#)



Why Applied One?

The process of defining, designing, constructing and operating Applied One will be the catalyst for the ongoing and continuous evolution of UBC as a leader in shaping the 'university of the future'. Although many details need to be refined before this project is realized, the gradual visionary reframing of UBC's role in service to society will be core to Applied One. By providing graduates, faculty members, alumni, staff, industry and community partners a place for creating transformational work that addresses key global challenges both locally and globally, Applied One is envisioned as a catalyst in a chain reaction of positive outcomes, starting with daily experiences of those who work in the building and rippling out to societal and environmental impacts.

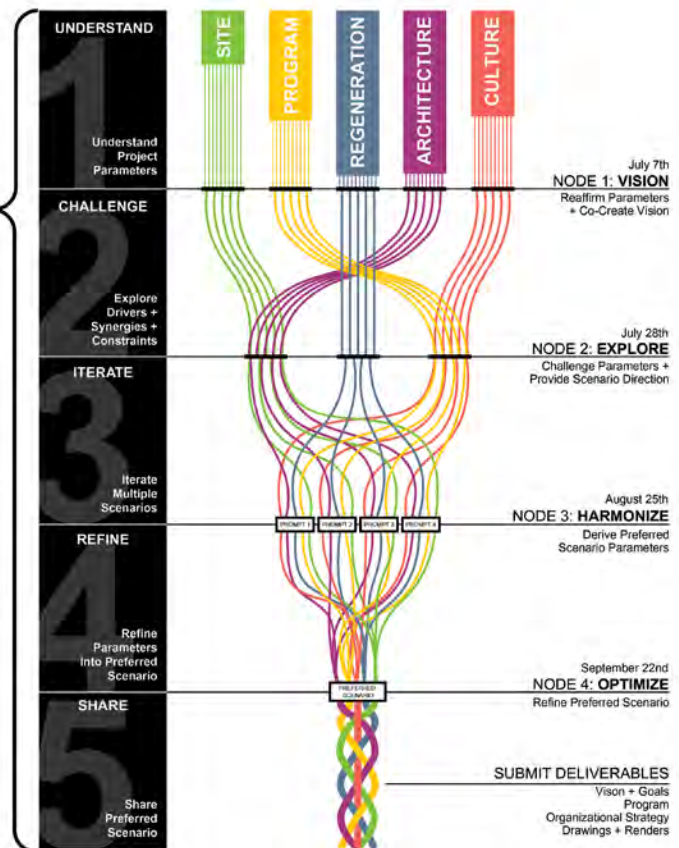
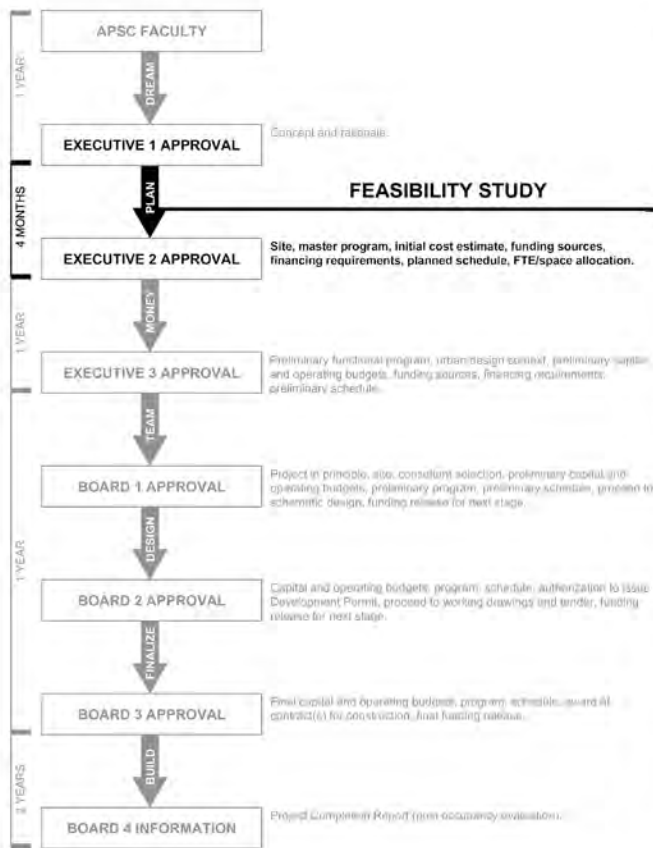
Applied One will house elements of all departments and schools of the Faculty of Applied Science.

Academic units with **permanent homes** in Applied One:

- School of Architecture and Landscape Architecture
- School of Community and Regional Planning
- Department of Materials Engineering
- Norman B. Keevil Institute of Mining Engineering

Academic units with **satellite homes** in Applied One:

- Department of Chemical & Biological Engineering
- Department of Civil Engineering
- Department of Electrical and Computer Engineering
- Department of Mechanical Engineering
- School of Biomedical Engineering
- Other APSC units, professional programs & partners



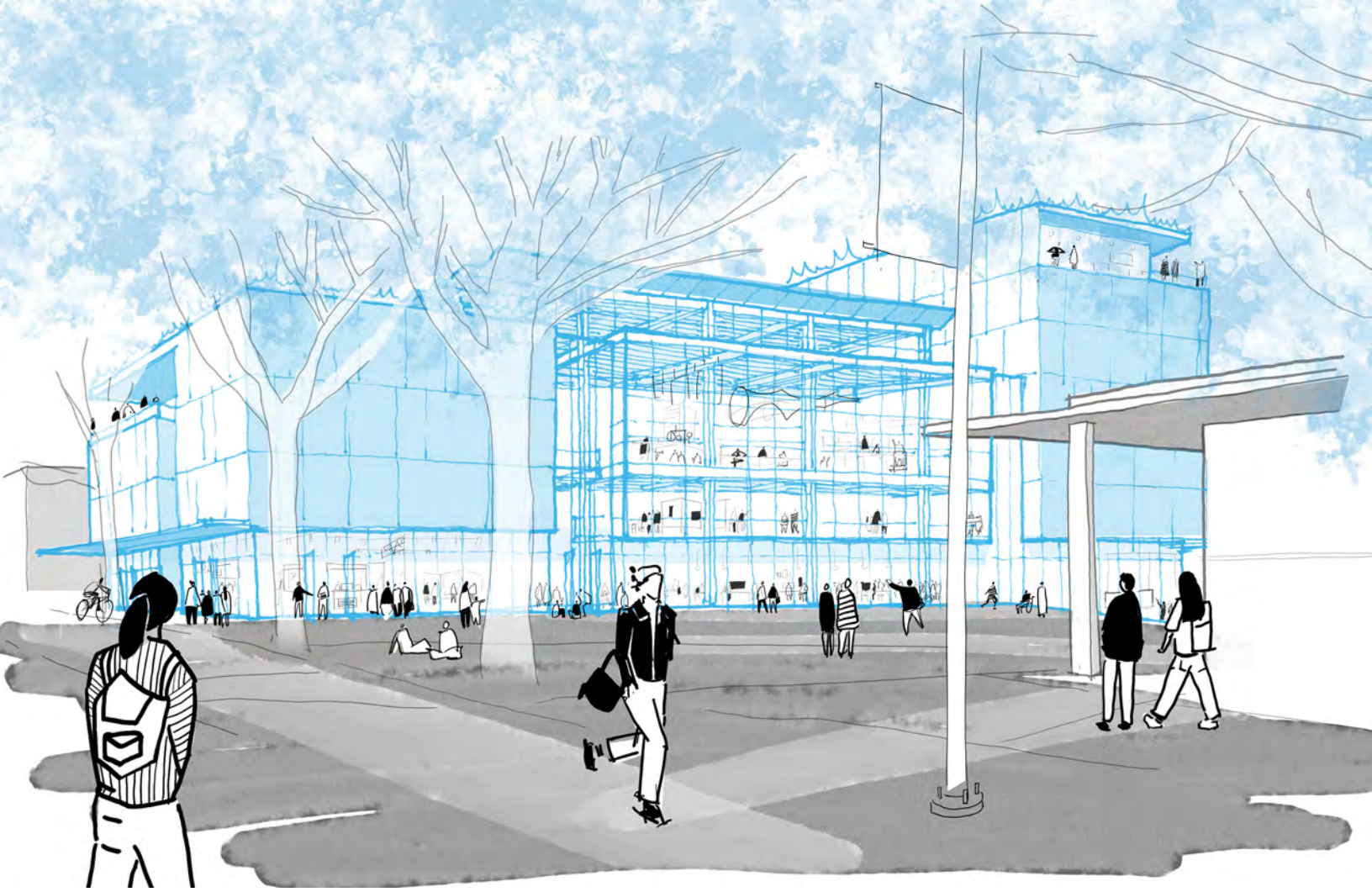
Feasibility Study

The feasibility study for Applied One was conducted in the summer of 2020 in order to refine the project vision, build stakeholder consensus, and prepare the project for Executive 2 submittal and subsequent fundraising. This report summarizes the outcomes of the study in nine chapters:

- 1. Process** - This feasibility study was rooted in a thoughtful, creative, and efficient stakeholder engagement process that distilled many ideas towards realizing the transformative role of Applied One. This chapter outlines the virtual process of the stakeholder group completed in the summer of 2020.
- 2. Master Program** - A key deliverable for Executive 2 approval, this chapter describes and outlines the master program for Applied One, analyzed through activity type, the public-private gradient, and work that defines constituent spaces.
- 3. Strategic Alignment** - The scale and transformational potential of Applied One presents a strong opportunity to accelerate the university's vision well into the 21st century by demonstrating the commitment of UBC and the Faculty of Applied Science to achieving goals set out

in their respective strategic plans. This chapter outlines the alignment of the proposed project with this vision.

- 4. Accelerating to Net-Positive** - Applied One is a continuation of the legacy started by ambitious projects like the C.K. Choi Building, Centre for Interactive Research on Sustainability (CIRS) and the Brock Commons Tallwood House - striving to not only build on lessons learned, but to accelerate UBC's progress towards the goal of net-positive built environments by 2035. This chapter envisions the contribution of Applied One to the net-positive aspiration of the campus.
- 5. Conceptual Vision** - The feasibility study process resulted in a preliminary design response which integrates project vision, stakeholder feedback, master program, and key design drivers. This chapter documents the architectural vision for Applied One, to be refined in later stages of design.
- 6. Design Principles** - The conceptual vision represents only one possible realization of the key design principles that were refined through the course of the feasibility study. This chapter presents fourteen design principles



that provide a foundation for future work, while allowing the project to take on many shapes as its design is woven together.

7. **Narratives** - This chapter documents two exploratory narratives that begin to imagine the impact of Applied One on people, place, and planet at multiple scales.
8. **Outcomes and Impacts** - Reinforcing the project vision, this chapter delineates the critical role of Applied One in catalyzing work at the Faculty of Applied Science which addresses grand global challenges and delivers on the Faculty's mission and vision.
9. **Next Steps** - This chapter summarizes the next steps for the project, beginning with Executive 2 approval.

The completion of the feasibility study builds on Executive 1 approval of the project, and prepares the Faculty for subsequent steps on the road to securing funding & project realization. The main body of the report summarizes the result of this study for use by the Faculty and project consultants.

PROCESS

This feasibility study was rooted in a thoughtful, creative, and efficient stakeholder engagement process that distilled many ideas towards defining the transformative role of Applied One. The process was structured in five separate content areas (“threads”) - site, architecture, regeneration, program, and culture - deliberately woven together through a series of four large-group virtual workshops (Integration Nodes). These marked the completion of each study phase. Between Integration Nodes, the consultant team engaged with a UBC Project Steering Committee on a weekly basis (Working Groups) to test ideas, gradually integrating the five threads into increasingly complex concepts. The main purpose of this study structure was to engage stakeholders in thoughtful

discussion about the project, and elicit response to gain insight and direction for the project’s foundation moving up to Executive 2 submittal.

It is important to note that the entire process was done completely virtually, leveraging the use of Zoom meetings with breakout rooms with a regular attendance of 30-40 participants for each Integration Node. Although this was done out of necessity due to the COVID-19 pandemic, the virtual presentation enhanced the study process, as this format allowed for an environment where all voices could be heard.

Node #1 - VISION

7/7/2020

Node #1 aimed to **create alignment around project potential and direction** across stakeholder groups, in a way that sought to harmonize potentially contradictory views, to start creating a bold and compelling vision for the project.

“If we want a great output, we want a great process.”

“For me, it is important that Applied One brings into action the crucial concepts of building sustainability that we research and teach on a daily basis.”

“We want to do more than bring two disciplines together... we want to facilitate a diffusive boundary between homes that allow people to go back and forth.”

“What are UBC’s differentiators and how do we leverage them?”

Node #2 - EXPLORE

7/28/2020

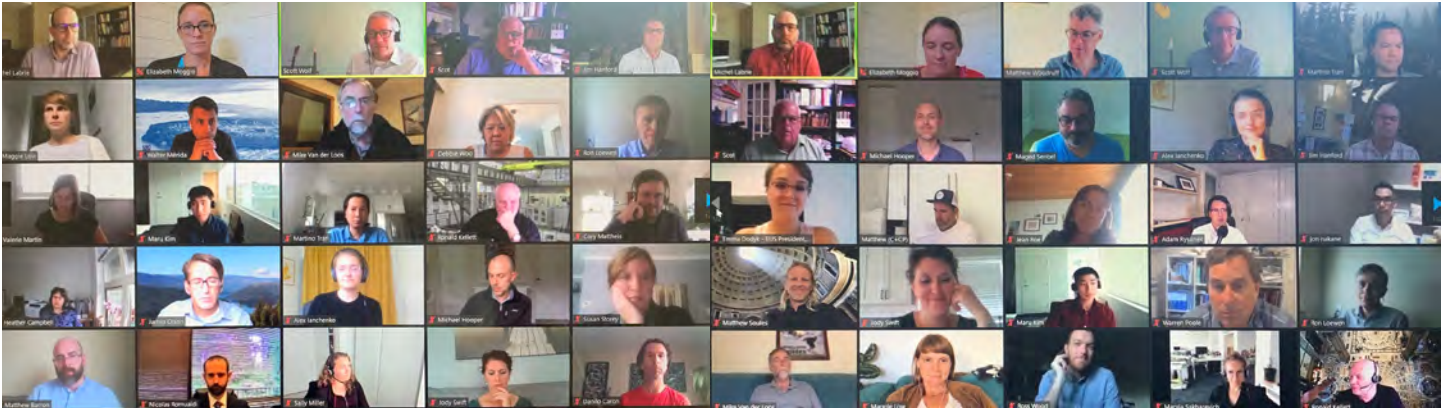
Node #2 aimed to **explore and critique design approaches from the five threads**, in a way that intentionally isolated key elements + drivers, in order to focus on root ideas and **identify representative directions** which were then synthesized into a limited set of integrated scenarios.

“It’s a great ambition for the project to actively encourage interaction between departments.”

“[The Holistic Health prompt] really resonates, since it shows a respect for those that live here.”

“The building is a device that forces our disciplines to evolve.”

“[Applied One] should not be an ostentatious building that wants to remain unique and be singularly impressive - it is a building that calls other buildings to join it in addressing global challenges.”



Node #3 - HARMONIZE

8/25/2020

Node #3 aimed to **pose a series of questions** through four distinct integrated prompts, in a way that dissected differentiating ideas of each prompt, in order to identify the preferred scheme components which will be compelling in the next phase.

"It's not about a quirky, standout building. It's not about *look at me*, it's about *look at what I do*."

"This discussion made me realize how fortunate we are to have the opportunity of this site."

"We don't want spaces that look idle - even if equipment is there."

"At the end of the day, this is a space where we will spend a portion of our life. I want to feel like - *yes, I'm going to this place today!*"

Node #4 - OPTIMIZE

9/22/2020

Node #4 aimed to **pose a series of architectural narratives**, in a way that allowed the group to reflect on how to best combine the vision, program, site and identified design principles, in order to prepare the strongest description of the project for Executive 2 approval and fundraisers.

"This project is an opportunity to think more deeply about the big initiatives that we have planned and the ambitious goals that we have set for ourselves to have a significant impact on our community and the world."

"If not this building, what new building should attain outstanding architectural excellence?"

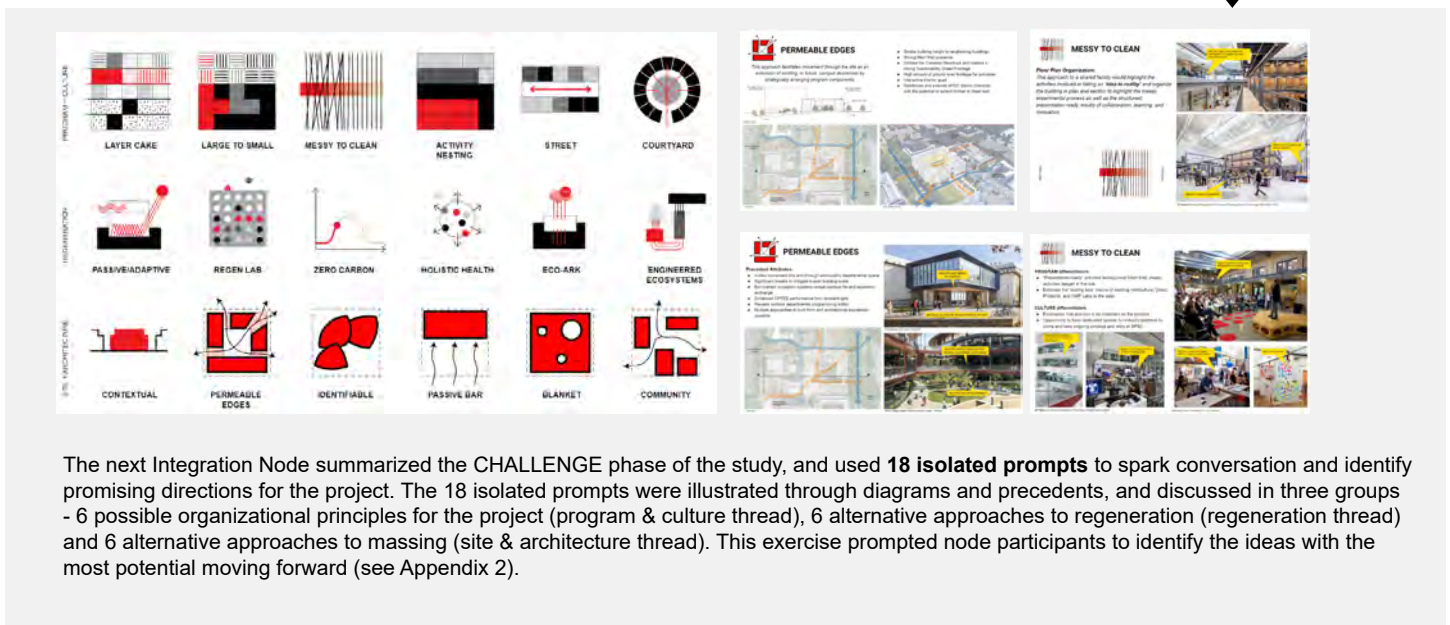
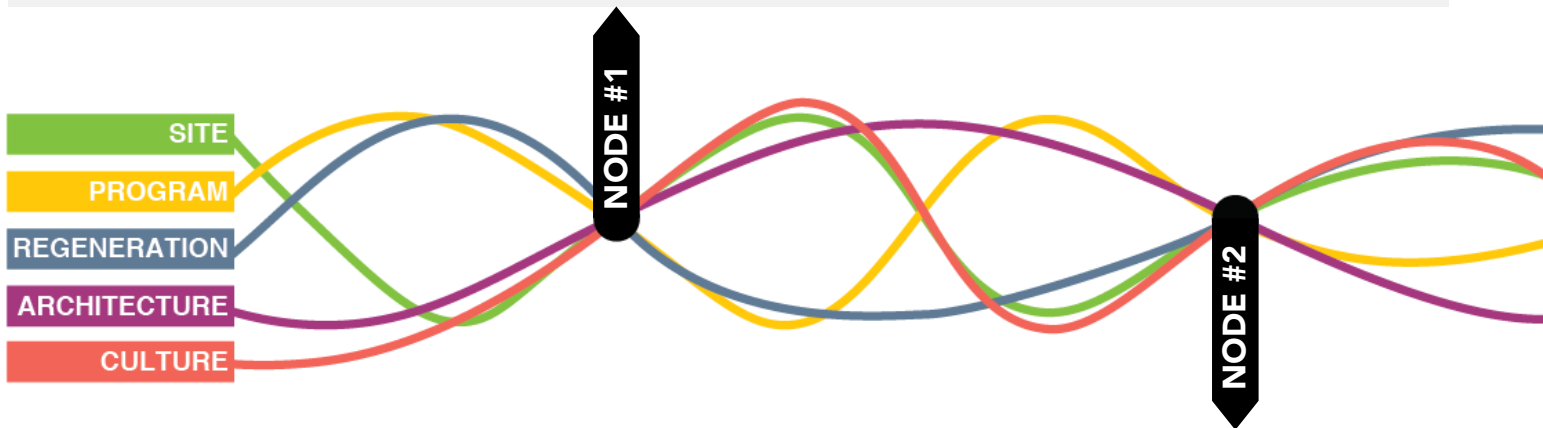
"There is a high level of excellence and capability within Applied Science and we want to be able to convey that to industry and put that on display. "

"Part of our pitch will be the outward focus of this project, and that comes out really clearly in the link between the Strategic Plan and the Design Principles."

VISUAL TIMELINE



The feasibility study began with a summary of the UNDERSTAND phase, which collated the team's research on the intended project site, architecture, regeneration, culture, and program. This Integration Node generated a set of maps analyzing the site on a campus and neighbourhood scale, a preliminary massing constraints study, an assessment of the site through the lens of the *Green Building Action Plan*, and a collection of key elements and drivers identified through eight program workshops with individual academic units at the Faculty (see Appendix 1).



The next Integration Node summarized the CHALLENGE phase of the study, and used **18 isolated prompts** to spark conversation and identify promising directions for the project. The 18 isolated prompts were illustrated through diagrams and precedents, and discussed in three groups - 6 possible organizational principles for the project (program & culture thread), 6 alternative approaches to regeneration (regeneration thread) and 6 alternative approaches to massing (site & architecture thread). This exercise prompted node participants to identify the ideas with the most potential moving forward (see Appendix 2).

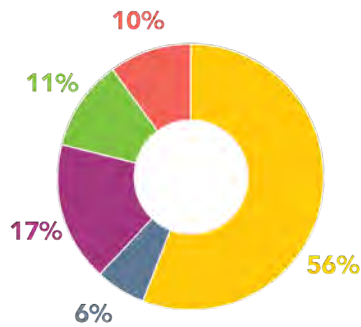
MASTER PROGRAM

In defining the Master Program, the feasibility study focused first on identifying the everyday activities that would need to be accommodated to allow for continued success in each Applied Science discipline, and encourage new collisions that can lead to the interdisciplinary connections required to solve grand challenges of Applied One together.

The summary table below details how the identified program could be allocated within 32,300 gross square meters by activity type. Appendix 5 - Program Summary provides additional information about the types of spaces, and the characteristics of those spaces, that could be included in the design to support each of these activities.

	Description	% of overall program	TOTAL GSM
MAKING	MAKING, CREATING, DOING		
	shared creation spaces (shops)		3,361
	making + creating (labs)		8,520
	creating + doing (workspaces/offices)		5,130
	MAKING spaces subtotal	56%	17,011
SHARING	SHARING, SEEING, OBSERVING		
	pinup, exhibit, gallery spaces		1,665
	SHARING spaces subtotal	5%	1,665
LEARNING	HEARING, WATCHING, LEARNING		
	hearing + learning (classrooms)		2,617
	hearing + watching (meeting rooms)		1,487
	hearing + watching (multi-purpose/events)		1,160
	LEARNING spaces subtotal	17%	5,264
SERVING	SERVING, HELPING, REACHING OUT		
	tech support, venture creation space, student support		3,494
	REACHING OUT spaces subtotal	11%	3,494
BEING	BEING, PASSING BY, CONVERSING		
	academic units - collaboration amenities		1,472
	public + visitors - amenities		595
	public requested - café, childcare		997
	BEING spaces subtotal	10%	3,064
		GSM TOTAL	30,500

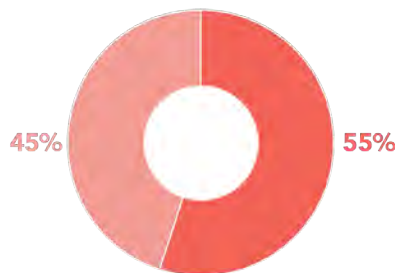
- Making
- Sharing
- Learning
- Serving
- Being



Activity Type

To support the outcomes for Applied Science work that is inherently creative and messy, more than half of the program will be devoted to making, creating, and doing – with space types like studios, workshops, labs, offices, and open workspaces. 6% of the program will be for sharing, seeing, and observing, with spaces for pinup + critique, exhibit, demonstration, and galleries. 17% will support learning and hearing, with things such as classrooms and learn labs. 11% will be for reaching out and serving with spaces such as venture creation and student support spaces. Finally, 10% is allocated for spaces that support community and well-being with a café, informal seating, lobby, and welcoming areas.

- Clean
- Messy

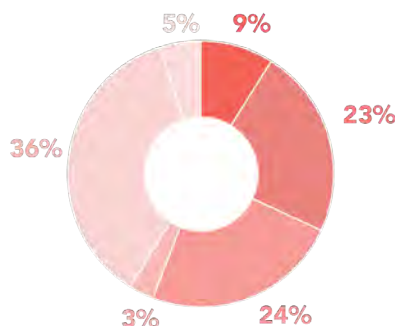


Messy and Clean

Though it is important to recognize that collaboration in Applied Science academic units is naturally messy and experimental, it is equally important to acknowledge that digital work, polished presentations, and quiet space for “thinking” must be included. Using this logic, the program can also be categorized as “messy” or “clean” spaces.

The building is relatively balanced - with a little less than half the space allocated for the “messy” work and interaction, with spaces like high bay and research labs, as well as collegia where people can make themselves at home, and the rest devoted to “clean” spaces like office and workspaces, meeting rooms, teleconferencing spaces, and classrooms.

- Promotional & overt
- Publically accessible
- Viewable shared space
- Semi-private shared space
- Viewable dedicated space
- Private dedicated space



Sharing Gradient

Feedback from stakeholders was used to categorize spaces along a spectrum of public, shared, dedicated, acknowledging that both physical and visual access are important considerations that will affect the placement and architecture of spaces during the design phase. Overt & public spaces represent 9% of the program, with spaces such as a lobby, installation, gallery and exhibit areas where people can view artifacts produced by the Applied Science groups. The remaining spaces, represented in shades of light red to pink, are classified as shared, (e.g. classrooms, shops, or pinup spaces), and dedicated spaces, (e.g. open and enclosed office spaces, meeting spaces, and dry and wet research and undergraduate research labs) that will support the work of the Faculty of Applied Science and allow the continuity of the strong identities of departments hosted within Applied One. Both in shared and dedicated space categories, there are some which invite people to look in, and some that provide visual privacy, where people can work comfortably, undisturbed by those walking by.

STRATEGIC ALIGNMENT

UBC Strategic Plan

In 2018, UBC launched the UBC Strategic Plan¹, which sets out the collective vision, purpose, goals, and strategies of the University within four core areas: People and Place, Research Excellence, Transformative Learning, and Local and Global Engagement. The plan will guide the university in their policies and actions through the next decade, including decisions regarding resource and capital allocation.

The scale and transformational potential of Applied One presents a strong opportunity to accelerate the University's vision well into the 21st century by demonstrating the commitment of UBC to achieving the goals set out by the UBC Strategic Plan.

People and Places

Creating vibrant, sustainable environments that enhance wellbeing and excellence for people at UBC and beyond

Applied One is committed to a people-first approach to design - not only in terms of individual occupant health and wellbeing, but also fostering a diverse array of healthy interpersonal interactions with one another within the place they occupy. This commitment to creating vibrant communities will be reflected within the architecture of the building itself, the work that it enables, as well as its occupants' interaction with the campus and the greater community.

Research Excellence

Creating and mobilizing knowledge for impact

Applied One is an investment in the continuation of UBC's reputation as a research powerhouse, providing innovative spaces for generating new knowledge and applying it in meaningful ways. The function of Applied One as a building with laboratories, studios, and research workshops is especially relevant to this core area of the UBC Strategic Plan as society navigates increasingly complex local and global challenges that require both depth of knowledge and collaboration across Applied Science disciplines.

Transformative Learning

Enabling learning through evidence-based teaching, mentorship and enriched experiences

The Applied One project responds to a changing market which demands an education that focuses on core competencies and transferable skills, such as critical thinking and communication. The type of work that spaces that Applied One will host will stimulate both traditional and new experiential ways of learning directed towards developing skills such as problem-solving and collaboration.

Local and Global Engagement

Engaging ethically through the exchange of knowledge and resources for everyone's benefit

The Applied One project is an opportunity to build UBC's capacity for external partnership in a way that is respectful, understanding, and inclusive. The partnerships formed throughout this project process, as well as after its completion as research and teaching begins, will reach out to likeminded industry and global partners, as well as local communities, indigenous groups, and alumni.

¹ [UBC Strategic Plan](#)

Applied Science Strategic Plan

The Faculty of Applied Science developed a comprehensive strategic plan through a two-year process of engagement with its community, as a vision to bring the diverse constellation of departments, partners, students, and faculty together around a common set of aspirational goals. The strategic plan, *Transforming Tomorrow*, provides the foundation on which Applied Science will enact its aspiration of changing the world, organized around 6 priority areas and 17 strategies.

Applied One will create a place for the Faculty to deliver on the first three priority areas by providing a facility that will change the way the Faculty learns and works, while ensuring that Applied Science graduates grow to be respectful leaders. This alignment with the Faculty mission can then be leveraged to propel the Faculty and its partners forward in their vision to transform the world, to demonstrating how built environments can be just, equitable, sustainable and inclusive.



University of the future

By creating new learning environments, Applied One will change students' perspectives throughout their journey at the Faculty. In order to inspire exceptional graduates, Applied One aims to provide a singular learning experience that students cannot get anywhere else. At Applied One, seeing and participating in work that integrates different perspectives and disciplines is a core foundation for the project that recognizes that real change requires systems thinking.



Future of work

The work at Applied One will be directly informed by and connected to emerging changes in society, economy, and industry, in order to equip students with the technical, social, and creative skills required to adapt to a rapidly changing professional market.



Inclusive leadership and respectful engagement

The process leading up to and the work that will continue after the construction of Applied One will be built on a foundation of inclusion, respect, and understanding. The embodiment of inclusive leadership and respectful engagement will ripple out to the greater community through the work at Applied One.



Solutions for people

Driven by students' desire to transform ways of working and learning, Applied One will actively break down silos that represent the traditional physical, structural, pedagogical and social barriers that prevent collaboration between disciplines. In its conceptual core, the project aims to create a space for the Faculty's work that advances progress towards an ethical, equitable, and inspiring future in the pursuit of a more healthy and empowered society.



Thriving cities and communities

Applied One will create meaningful connections within its nested set of communities through the research, teaching, and design work that will take place in individual departments as well as interdisciplinary pursuits.



Planetary health

There is a growing need for urgent and accelerated action to remediate the health of our planet. Meaningful environmental action is becoming increasingly complex, and Applied One will respond by providing a platform for collaboration across a diverse set of minds and cultures toward holistic solutions.

ACCELERATING TO NET-POSITIVE

Buildings on the UBC Vancouver campus have repeatedly “set the bar” for what it means to serve people, place, and planet. Applied One is a continuation of the legacy started by ambitious projects like the C.K. Choi Building, Centre for Interactive Research on Sustainability (CIRS) and the Brock Commons Tallwood House - striving to not only build on lessons learned, but to accelerate UBC’s progress towards the goal of net-positive built environments by 2035.

Harnessing the expertise of the Faculty of Applied Science, this project is an opportunity to demonstrate design excellence and show that it is possible to not only achieve UBC goals for integrating sustainability across operations, academics, and engagement, but do it ahead of time.

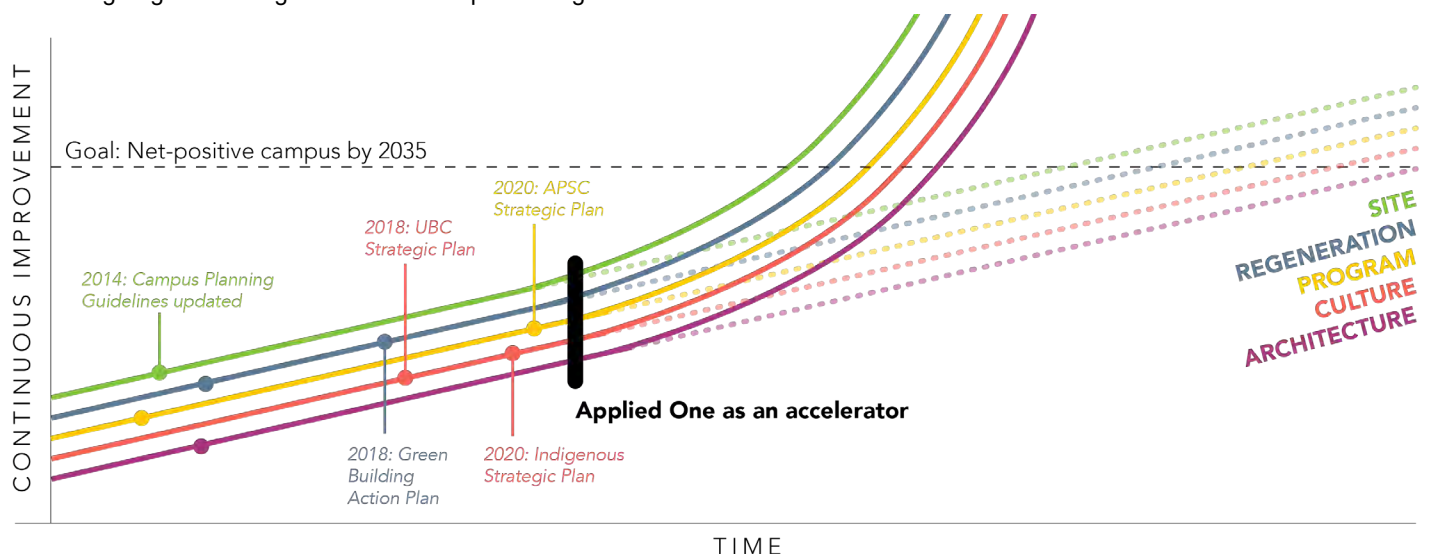
Applied One is a project born at a time of visionary change at UBC that builds on decades of progress - exhibited by the release of the *UBC Strategic Plan*, and the *Applied Science Strategic Plan*, the *Declaration on the Climate Emergency* and the *Indigenous Strategic Plan* in 2020. The ambition of the University is accelerating to serve surrounding communities at a pace that matches a changing world. Applied One is a transformational project conceived during a transformational time - as the combined impacts of the worldwide COVID-19 pandemic, systemic social injustice, and the climate crisis are all prompting a large-scale change.

For the past two years, UBC has been ranked #1 in the world in terms of climate action by *Times Higher Education*¹. In a rapidly-urbanizing world, climate action is irrevocably tied to decarbonizing the built environment sector; as a collection of all disciplines who are involved in the creation of built environments, the Faculty of Applied Science at UBC is uniquely positioned to become worldwide leaders in this task. Furthermore, the Faculty’s deliberate interweaving of culturally-sensitive and community-centered curricula with cutting-edge technological innovation is positioning its

students to directly address the social impacts of innovation, actively working to dismantle historical structures of injustice.

At its core, Applied One strives to be net-positive within natural as well as human and economic systems. In its environment, this project takes a proactive stance to heal more rather than harm less. The intertwining of design elements that advance site, architecture, program, regeneration and culture simultaneously is an opportunity to demonstrate the commitment of the Faculty of Applied Science to creating regenerative built environments that go beyond “sustaining” the status quo. Within the logic of the five threads, this means:

- **Site:** going above and beyond the University of British Columbia Vancouver Campus Plan to create a vibrant centre of the south campus that recognizes and respects the history of its site.
- **Architecture:** learning from innovative buildings on campus and pushing the envelope to demonstrate a new level of inclusive, rooted design excellence.
- **Program:** embracing a spatial organization strategy that breaks down silos and invests in shared resources, spaces, equipment, and expertise.
- **Regeneration:** going beyond the targets set out by the Green Building Action Plan to demonstrate a net-positive design that generates energy, sequesters carbon, cleans water, provides climate-adaptive habitat and promotes human health across many scales.
- **Culture:** supporting the Faculty of Applied Science vision and mission, as stated in the Applied Science Strategic Plan - allowing the organic growth of a long-living social infrastructure that inspires faculty excellence.



¹ [Times Higher Education - Impact Rankings for Climate Action](#)

Green Building Action Plan

GBAP Vision and Framework

The UBC *Green Building Action Plan* (GBAP)¹ sets out a target for campus buildings to make net-positive contributions to human and natural systems by 2035. The GBAP integrates other campus plans as they relate to the built environment, including the *2020 Climate Action Plan*, the *20-year Sustainability Strategy*, the *UBC Water Action Plan*, among others. As in other UBC sustainability efforts, the GBAP builds on the idea of the campus as a Living Lab, where campus operations directly help advance innovative research and teaching. This vision is directly aligned with the net-positive intent of Applied One.

The GBAP delineates eight component areas of a net-positive campus, but recognizes them as part of an integrated whole. At this time, some component areas have been further developed than others, building on decades of UBC experience with energy and water efficiency. As a transformational project, Applied One is an opportunity to advance and develop the plan in more novel areas, such as Climate Adaptability, Biodiversity, and Materials.

Alignment

The regenerative aspirations of Applied One will support and advance the UBC Green Building Action Plan, using the eight-component framework along with its process goals. The goal of Applied One is to showcase an integrated approach that combines multifaceted, adaptable strategies which address the eight component areas simultaneously.

- Applied One will clearly communicate the aspirations of Applied Science and be transparent about its functional performance, teaching Applied Science staff, students and visitors about Quality as a regenerative outcome.
- Applied One programming, massing, form, and interior design is driven by an equitable promotion of building occupants' health and well-being while responding to natural and human systems that support occupants' experience of place.
- Applied One will meet energy performance targets ahead of schedule, prioritizing passive strategies, and showing a pathway to net-positive energy generation and carbon sequestration, while incorporating climate adaptive strategies that will extend its useful life.
- Applied One will allow for flexible programming and design solutions to enhance resilience and allow for climate adaptation over its lifespan.

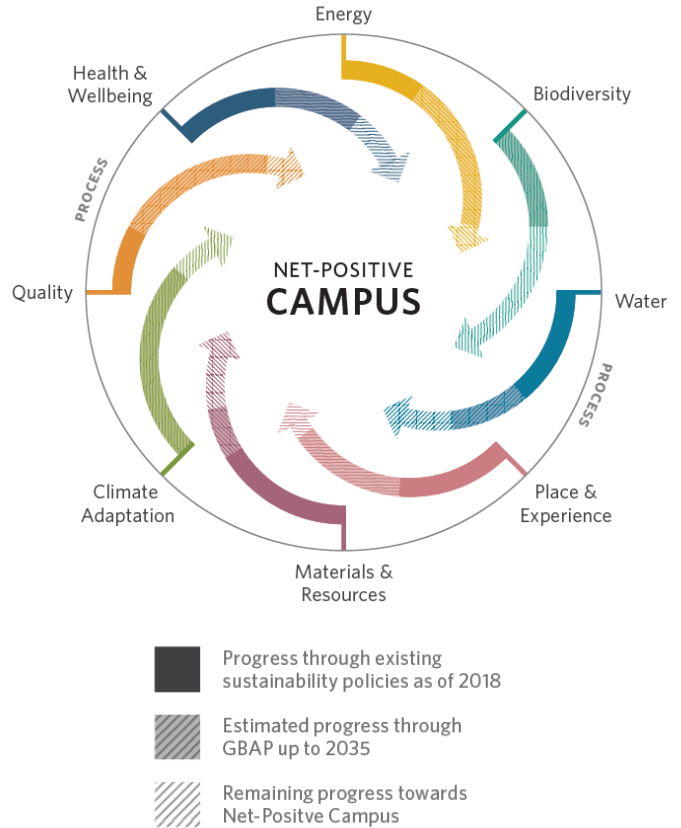


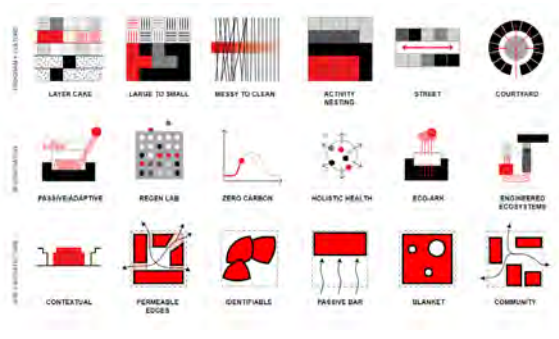
Diagram from Green Building Action Plan illustrating the integrated approach to campus development across 8 component areas.

- Applied One will manage stormwater onsite using rainwater collection and green roofs that simultaneously provides rooftop habitat, supporting larger campus stormwater infrastructure and supplying non-potable water resources to the building.
- The process of design and construction for Applied One will document carbon emissions impacts in areas of materials and energy, and showcase a method for using carbon as a decision-making component.
- Applied One will connect to campus metabolic flows, functioning as in integral part of campus life and its habitat and energy and water systems.

¹ [UBC Green Building Action Plan](#)

CONCEPTUAL VISION

The following conceptual vision is the architectural synthesis of feedback from all four Integration Nodes. This scheme results from the feasibility study process, which used a series of isolated and integrated prompts to elicit response from all stakeholders on various strategies related to the five project threads: site; program; regeneration; architecture; and culture. This process allowed a progressive adoption of key design considerations that were gradually integrated in the conceptual vision of Applied One. The prompts allowed the team to progressively integrate the five threads into a comprehensive design response presented in this section.

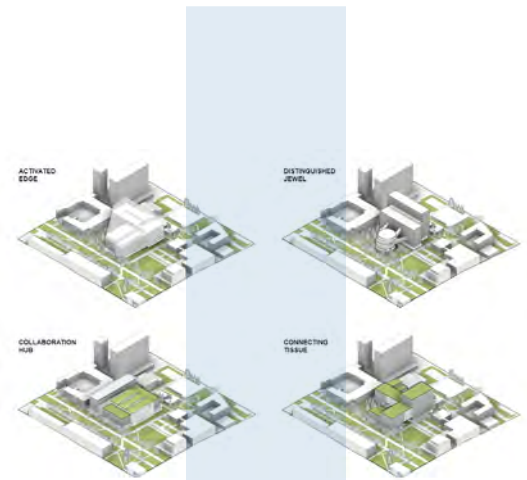


Energizing Ideas Identified through Isolated Prompts

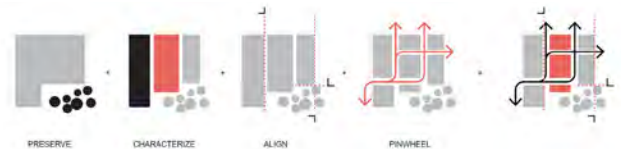
- Messy spaces on display
- Spaces that invite users to move throughout their day
- Purposeful balance between shared/dedicated spaces
- Being connected to and contributing to a larger metabolic system on campus
- Importance of holistic health & respect for occupants' wellbeing
- Permeability of the site
- Distinct architecture that responds to its context
- Communicating & celebrating program and regeneration through architecture

Energizing Ideas Identified through Isolated Prompts

- Sheltered occupiable outdoor space, especially roofs
- Effective strategies for natural daylight access
- Maximizing tree retention and bioremediation of stormwater on site
- Large volume of flexible, adaptable double-height spaces
- Qualitative diversity of spaces
- Central and clear organization and circulation
- Activating and framing adjacent outdoor spaces
- Deference to the project's context on Main Mall
- Human-scaled, people-first approach to design



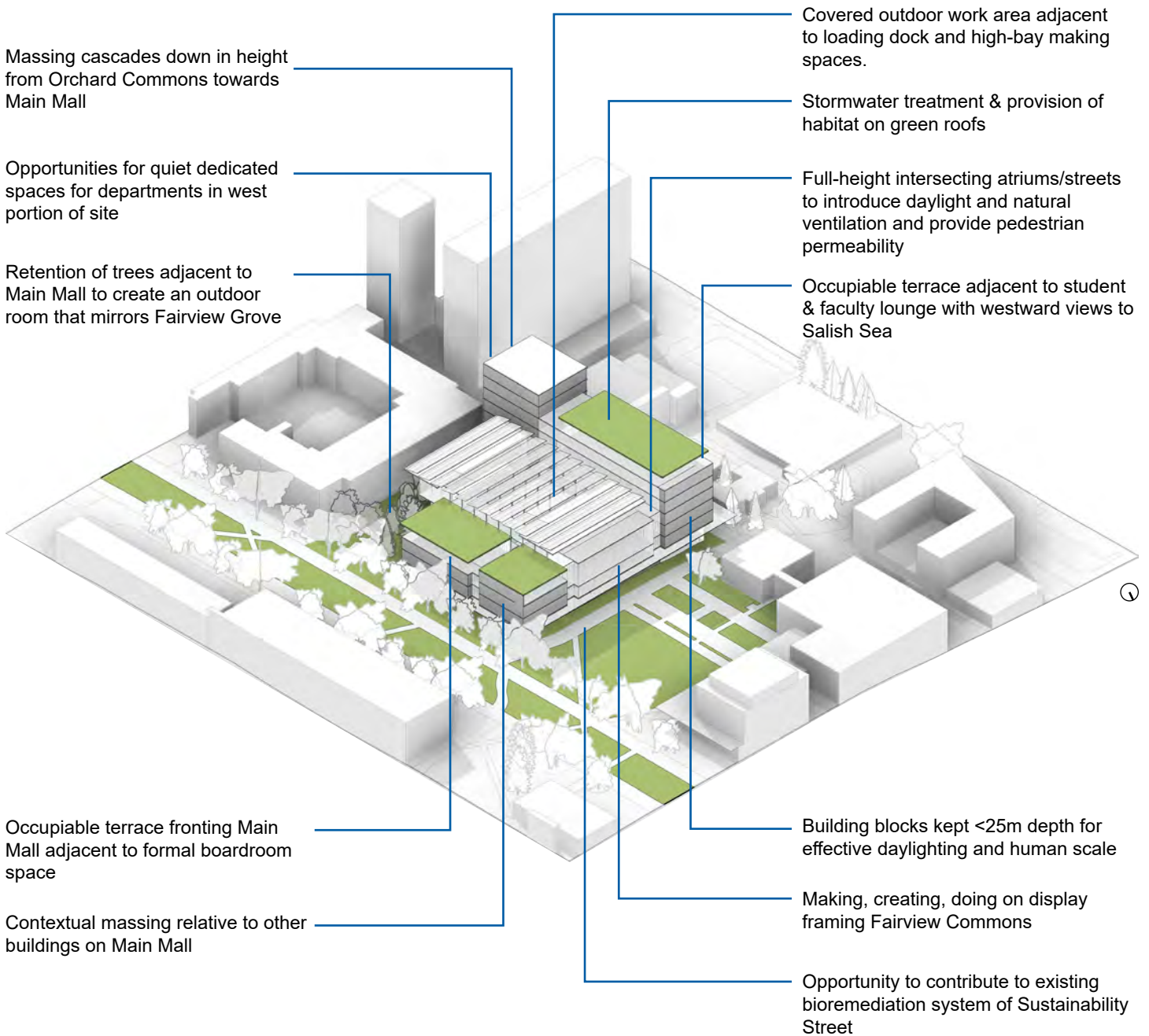
CONCEPTUAL VISION



The Conceptual Vision acts as a way to:

- Synthesize the ideas that resonated with Node participants into an architectural concept.
- Test the program area against the constraints of the site (See Appendix 5).
- Visually represent the project without committing to a single proposed design.

The conceptual vision synthesizes energizing elements identified through the course of the feasibility study.



Conceptual Foundation

Culture

Spaces hosted at Applied One should reflect the commitment of UBC to support social equity and holistic health. The built environment should also support a shift towards intentionally diffusive boundaries between departments as well as with industry partners, while also respecting the individual needs of the various schools. Additionally, node participants identified the importance of the work needed to develop the 'soft infrastructure' (the cultural and operational elements needed to support the new Applied One facility in its ongoing life) required for the evolution of the Faculty and the success of Applied One as an interdisciplinary facility.

Program

Approximately 32,300 square meters of gross program area is targeted to accommodate the permanent homes of four Applied Science academic units and shared facilities available to the entire Faculty to research, teach and collaborate. The conceptual vision features dynamic program arrangement organized around flexible, large-scale collaborative spaces ("hangars"). Each level would contain a healthy mix of spaces for making, sharing, learning, reaching out, and just being organized around internal streets and alleys that allow for easy navigation between public and private activities.

Regeneration

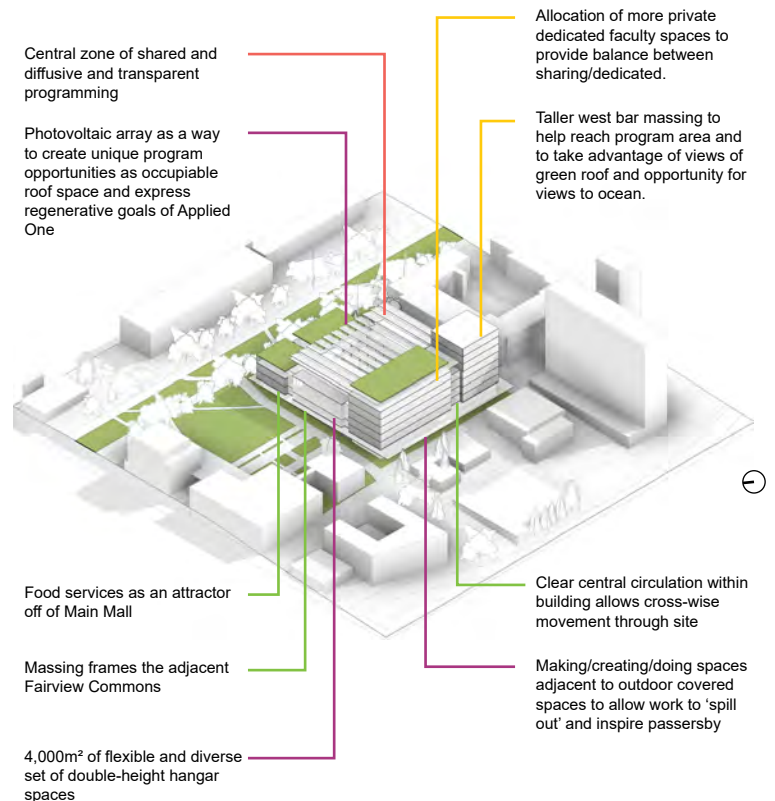
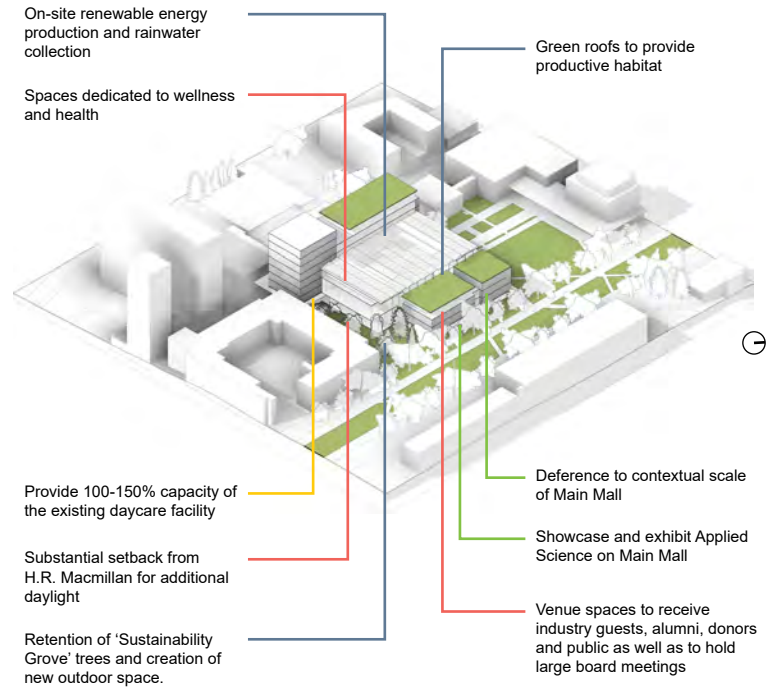
In addition to minimizing the environmental impact through sustainable construction and passive design, the conceptual vision actively seeks to help UBC become a net-positive university. This includes, among others, designing to support occupants' physical/mental health through access to natural light, ventilation and outdoor spaces, giving back energy and clean water to campus metabolic flows, adapting to future technology and climate, and communicating regenerative design decisions through architectural expression.

Site

Applied One should have an intentional and reciprocal relationship to its surrounding context in order to reinforce the prevailing campus character and fabric while enhancing opportunities for Applied Science ceremony, symbolism & recognition of academic achievement. It is also recommended that the project should recognize and investigate the precolonial qualities of the site in collaboration with the Musqueam people.

Architecture

The conceptual vision aims to express the exciting program of the building through its architecture, whether that is the prominent hangar spaces, the unique and diverse set of departments, flexible and diffusive programming, or the aspirational regenerative goals of the Faculty. Showcasing the values and expertise of UBC's Applied Science Faculty, staff and students' engagement will help inform the architectural expression of the building.

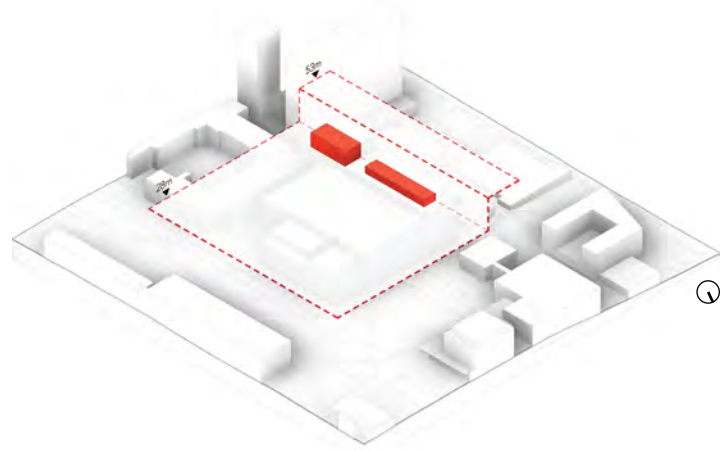


Campus Plan Design Guidelines

Part 3 of the *UBC Vancouver Campus Plan*¹ is a set of design guidelines developed by Campus & Community Planning for the physical design of the campus. The Applied One site is primarily located within the 'campus core' zone, which has a guideline building height of 28m (Article 2.3.4).

Additionally, buildings on campus are encouraged to reference neighbouring buildings in order to intentionally frame outdoor public spaces (Article 2.3.1.b). There are two alignments affecting the Applied One site - H.R. MacMillan to the south and Frank Forward, which currently occupies the site (Frank Forward to be demolished).

Campus Buildings should strive to announce academic identity through programming and features, including ground oriented interior and exterior references.

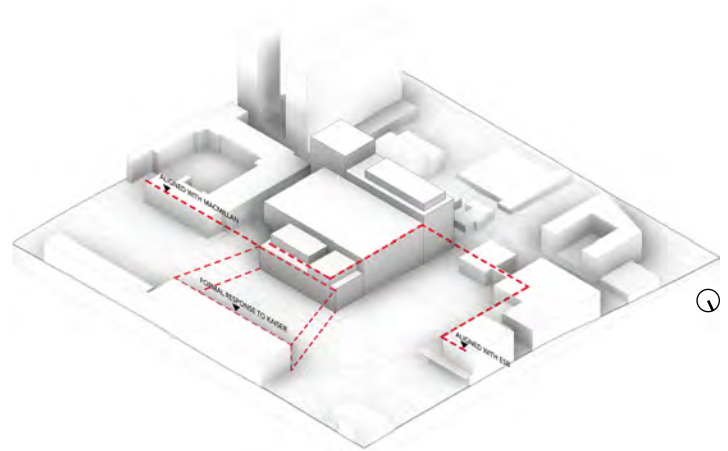


Contextual Read

Main Mall Formality - Buildings should reinforce Main Mall's symbol of the academic and cultural ambitions of the University. There is an opportunity to reinforce this significance through formal response or dialogue with the Fred Kaiser building which houses Applied Science and the Dean's office. Additionally, the feasibility study identified the importance of orienting the formal entrance to the building towards Main Mall to reinforce the ceremonial nature of this pedestrian axis.

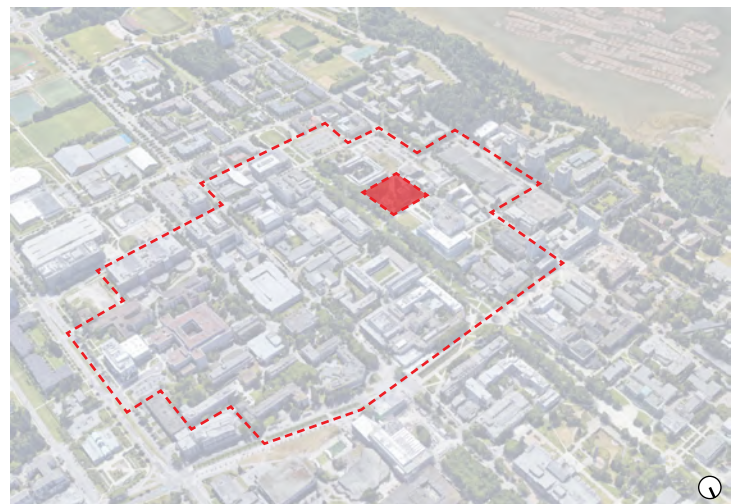
H.R. MacMillan Building - In addition to the Build-to-Line alignment, the campus plan recommends the alignment to the cornice line of the H.R. MacMillan Building.

Earth Sciences Building + Fairview Commons - The campus plan also recommends continuing the cornice line of ESB and/or EOS to effectively frame Fairview Commons as an outdoor room.

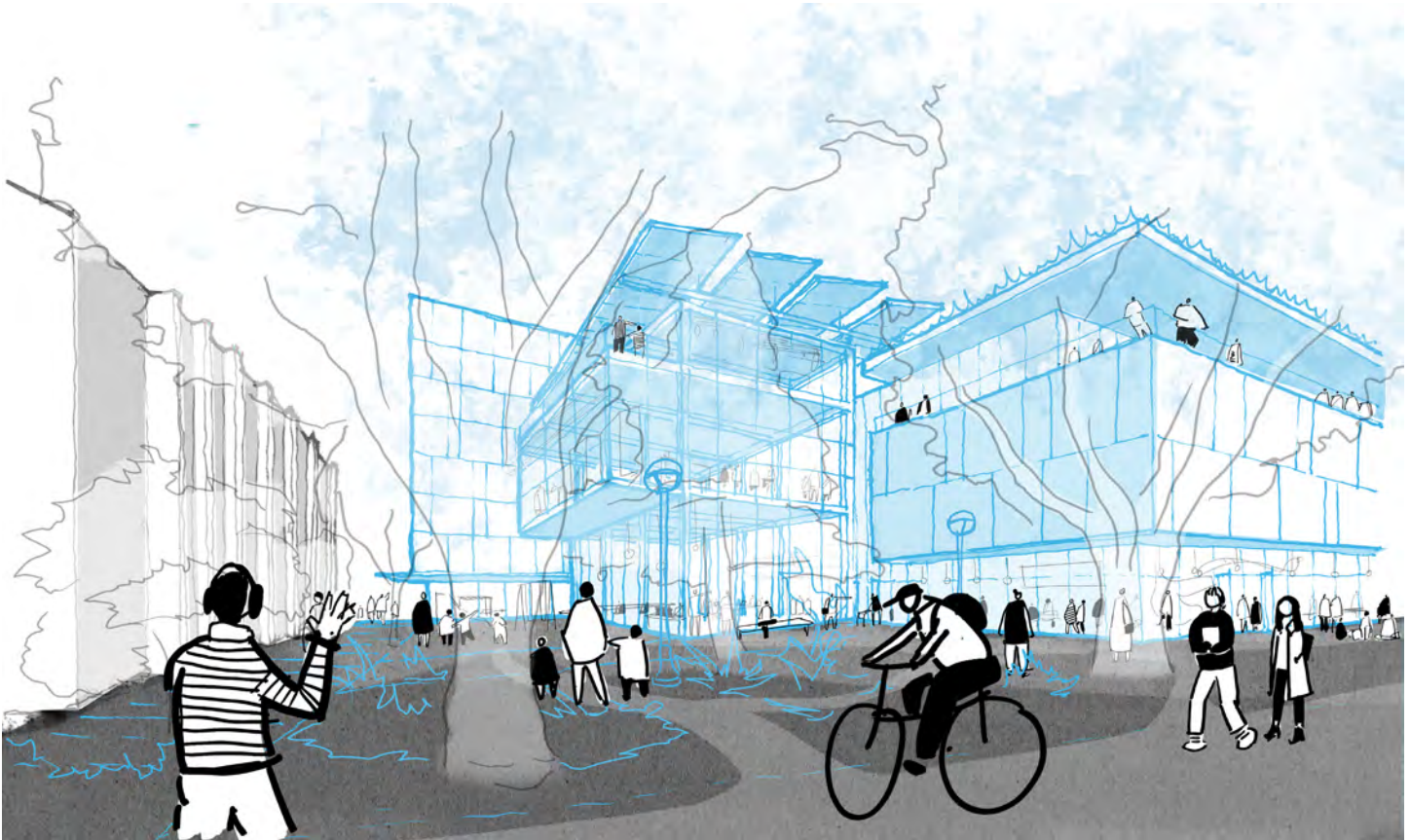


New Centre of Campus

Applied One will become a focal point of the new campus centre as development of new buildings continue near the southern end of Main Mall. The programming and design of the new building should emphasize and build on the creation of this new centre of campus, as well as Applied One's role within it as a potential hub or heart of activity for the campus as a whole. The development of the entire Applied One District will further strengthen the role of Applied Science as a new centre of gravity in the south campus.



¹ [UBC Vancouver Campus Plan](#)



View towards Sustainability Grove & outdoor daycare spaces from Main Mall.

Biodiversity & Trees

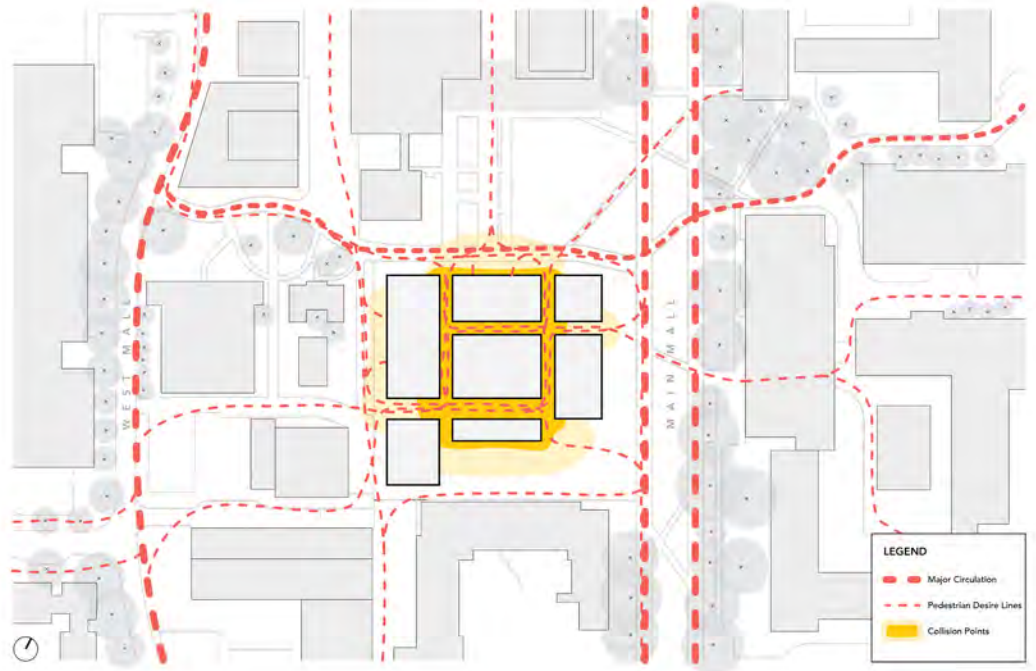
It is imperative to maintain the strong avenue of single species red oak trees and their continuous canopies along Main Mall. The grove of trees surrounding the existing Barn building have been identified as 'Sustainability Grove' during the feasibility study. The design of Applied One will help define this green area as a new occupiable outdoor space that retains significant trees and increases biodiversity on campus while providing a safe and usable space to complement the building activities. 'Sustainability Grove' should consider the role of indigenous plants and animals in contributing to the development of a local ecology. This will increase the physical significance of Main Mall as being grounded in its local culture.



Pedestrian Desire Lines

The campus plan's design guidelines identify multiple pedestrian routes that flow through the site. It is especially important, due to the full site usage required for the program area, that the building should accommodate a degree of permeability. The conceptual vision demonstrates the potential of seaming these desire lines together to create collision points.

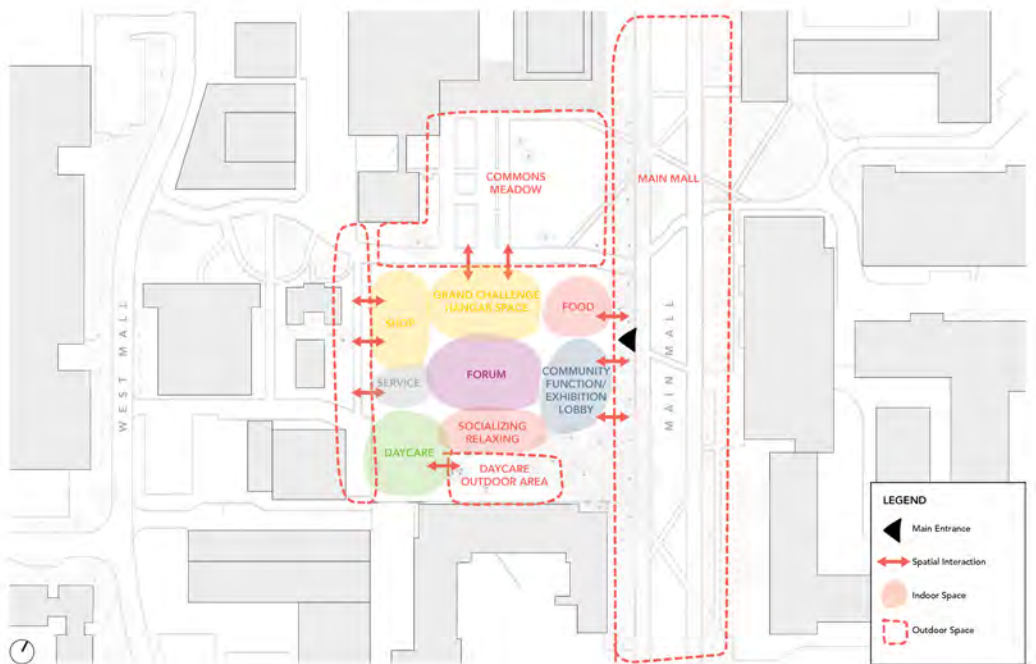
The Conceptual Vision also illustrates the importance of a high quality of pedestrian paths for desire lines running adjacent to as well as through the building. This includes a minimum of 3m deep canopy along the length of façades and Crime Prevention Through Environmental Design (CPTED) improvements among other considerations.



Ground Plane Interactions

Through the course of this study, a broad range of stakeholder groups identified program elements that would greatly benefit from an intentional location on the ground plane:

- Formal exhibition/lobby space and Main entrance accessible from Main Mall
- Food services by Main Mall
- Daycare adjacent to sheltered outdoor area
- High-bay gantry type space close to servicing access near Coal & Mineral Processing loading dock
- Socializing/relaxing adjacent to 'Sustainability Grove'
- A central large gathering place
- Active making/creating/doing spaces to activate adjacent outdoor spaces to the west of the site



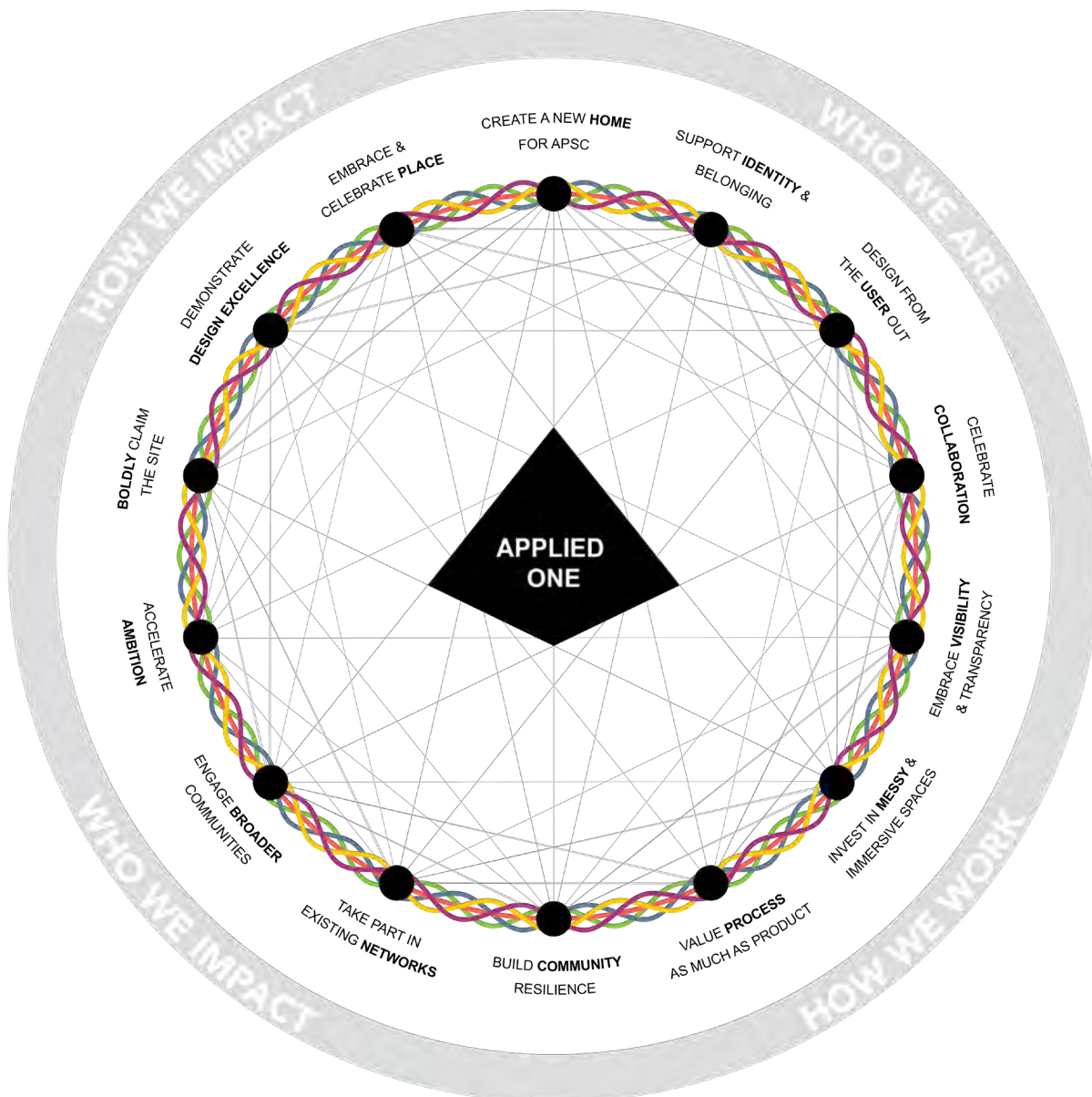
DESIGN PRINCIPLES

The conceptual vision represents only one possible realization of fourteen key design principles that were identified and refined through the course of the feasibility study. **Like a loom, the design principles provide a foundation for future work, while allowing the future project to take on many shapes as its design is woven together.**

The fourteen design principles started out as key elements and drivers in Integration Nodes #1 and 2, and evolved into constants in Integration Node #3 (see Appendices 1-3). Following the five-thread logic of the feasibility study, every

principle weaves ideas about site, architecture, program, regeneration and culture into an integrated statement. The principles are interconnected across four themes - who we are, how we work, who we impact and how we impact - and form the conceptual framework for a successful realization of Applied One.

For a more detailed description and breakdown of the Design Principles (including how they fit within the Applied Science Strategic Plan, Project Vision, and their outcomes) refer to Appendix 4: Integration Node #4.*



*Demonstrate design excellence is referred to as Stand up, not stand out in Appendix 4: Integration Node #4

WHO WE ARE

Applied One is an outstanding new home for the people who make up the collective Applied Science identity, while also allowing the continuity of individual school identities.

Embrace & celebrate place.



Reconciliation Pole, UBC

Applied One is a catalyst for large-scale transformation, setting the new bar for what a regenerative building can do for people, place and planet.

Create a new home for APSC.



Clark Center / Bio-X, Stanford University, Foster + Partners

Create a prominent campus- and public-facing centre for interdisciplinarity that announces and broadcasts the APSC identity to the campus and world, and focuses Applied Science energy towards solving grand challenges.

Support identity and belonging.



PATH Headquarters, SkB Architects

Support identity and belonging at different scales by embracing strategic overlaps and adjacencies and allowing for “guerilla architecture” in spaces that allow and expect people to make them their own.

Design from the user out.



Etsy Headquarters, New York, Gensler

In its process & expression, Applied One is proactive rather than reactive in supporting physical, mental and community health and comfort.

HOW WE WORK

Applied One accelerates a shift toward a collaborative, visible, process-driven and integrated way to tackle grand challenges through research and teaching.

Celebrate collaboration.



Melbourne School of Design, University of Melbourne, NADAAA & John Wardle Architects

Foster and showcase collaboration to accelerate interconnected research and amplify the synergies across disciplines through celebrating the results of both structured and organic collaborations within Applied Science.

Invest in messy & immersive spaces.



BK City, TU Delft, braaksma & roos ArchitectenBureau

Reinforce the “Living Lab concept” with shared, messy spaces (studios, workshops, labs, high-bay fabrication spaces and digital environments) that support experiential learning, digital connectivity, and problem based learning and expand Applied Science ability to create immersive environments.

Embrace visibility & transparency.



Granoff Centre for the Creative Arts, RI, Diller Scofidio + Renfro

Spark innovative ideas and open up the creative process to include more people by piquing natural curiosity through visibility into and between spaces. Enable the expression of departmental research and Applied Science identity through an overt, transparent, and accessible display of academic pursuits both inside and out.

Value process as much as product.



d.School, Stanford University, CAW Architects

Become a model example for a planning, design and construction process on the UBC campus, modeling innovative best practices in stakeholder engagement, inclusive procurement processes, and regenerative design.

WHO WE IMPACT

Applied One attracts the interest of the surrounding community, donor and industry partners beyond the reach of APSC - at UBC, in Vancouver, and the world.

Build community resilience.



ICTA-ICP Building, Autonomous University of Barcelona, H Arquitectes & DATAAE

Support resilience to current and future shocks by maximizing investment in adaptable space and systems design, and providing focused spaces that allow for active, peer-to-peer, and hands-on learning that are critical in-person activities in student life.

Take part in existing networks.



Bioenergy Research Demonstration Facility, UBC, McFarland Marceau Architects Ltd.

Applied One is part of a network and not an island. It is critical to connect to existing campus metabolic flows along with leveraging physical and intangible connections throughout campus.

Engage broader communities.



d.School, Stanford University, CAW Architects

Create spaces at different scales that promote individual, group, class, faculty, and community activities, play a critical role in engaging broader communities, provide a collective home for Applied Science, energize on-campus communities, and encourage interactions with visitors from around the globe.

HOW WE IMPACT

Applied One is a catalyst for large-scale transformation, setting the new bar for what a regenerative building can do for people, place and planet.

Accelerate ambition.



Tallwood House Brock Commons, UBC, Acton Ostry Architects & Architekten Hermann Kaufmann

Become an accelerator towards regenerative design, academic excellence, and interdisciplinary collaboration, offering a maturing of the sustainability discourse away from savior technologies, academic space design beyond “silos,” and towards regeneration as an ongoing activity that the building supports.

Demonstrate design excellence.



Kendeda Building for Innovative Sustainable Design, Georgia Tech, Miller Hull Partnership

Boldly claim the site - Boldly announce the highly public site as the “heart” of an evolving Applied Science District through visually engaging and vibrant frontages, and the provision of significant new outdoor amenity that reinforces the district’s identity, and aspirations of the larger campus.

Boldly claim the site.



AMS Nest, UBC, B+H Architects & DIALOG

Demonstrate design excellence - Express integrity and substance with an engaging presence on Main Mall, Sustainability Street and Fairview Commons. Architectural identity should visually respond over time to evolving best practices by revealing and celebrating internal research and learning activities to announce Applied Science identity.

NARRATIVES

The Applied One vision has come into more focus during the feasibility study, refined through conversations in Working Groups and Integration Nodes. Gradually, we began to picture life at Applied One that will make this building an exceptional place to work, learn, and serve others. Deliberately articulating these experiences into written narratives became a key technique that allowed us to imagine a day in the life at Applied One from multiple vantage points (see Appendices 3 and 4).

The following section illustrates two such narratives that imagine the chain-reaction impact that Applied One can catalyze to advance the Faculty in addressing climate change and thriving communities. These narratives are intentionally structured to highlight impacts & outcomes of work at Applied One on multiple scales - from the Faculty of Applied Science out to the world.

GRAND CHALLENGE NARRATIVE

CLIMATE CHANGE

The keynote speaker for this year's CARI Conference is Mark Carney. After discussing the recent EU legislation mandating climate financial disclosures and carbon fees on imports, he moderated a panel in Applied One's Auditorium. The panel included representatives from Industry, the Asian Development Bank, the Bloomberg Foundation and Mayors from the C40 alliance. After a discussion on Canada's recent pivot in the oil and gas sector, the APSC Blockchain cluster announces a new spin-off company devoted to tracing the carbon footprint of green and blue hydrogen exported to Asia (to validate the Consumption-based Accounting framework developed by the Policy Cluster). The hydrogen is produced under a BC – ALTA research collaboration that uses water electrolysis and carbon capture technologies developed at UBC. The 1,391 km hydrogen pipeline between Fort Sakatchewan and Kitimat is monitored by autonomous drones using a secure, 5G network. The network was first developed using the UBC Vancouver campus as a living laboratory.

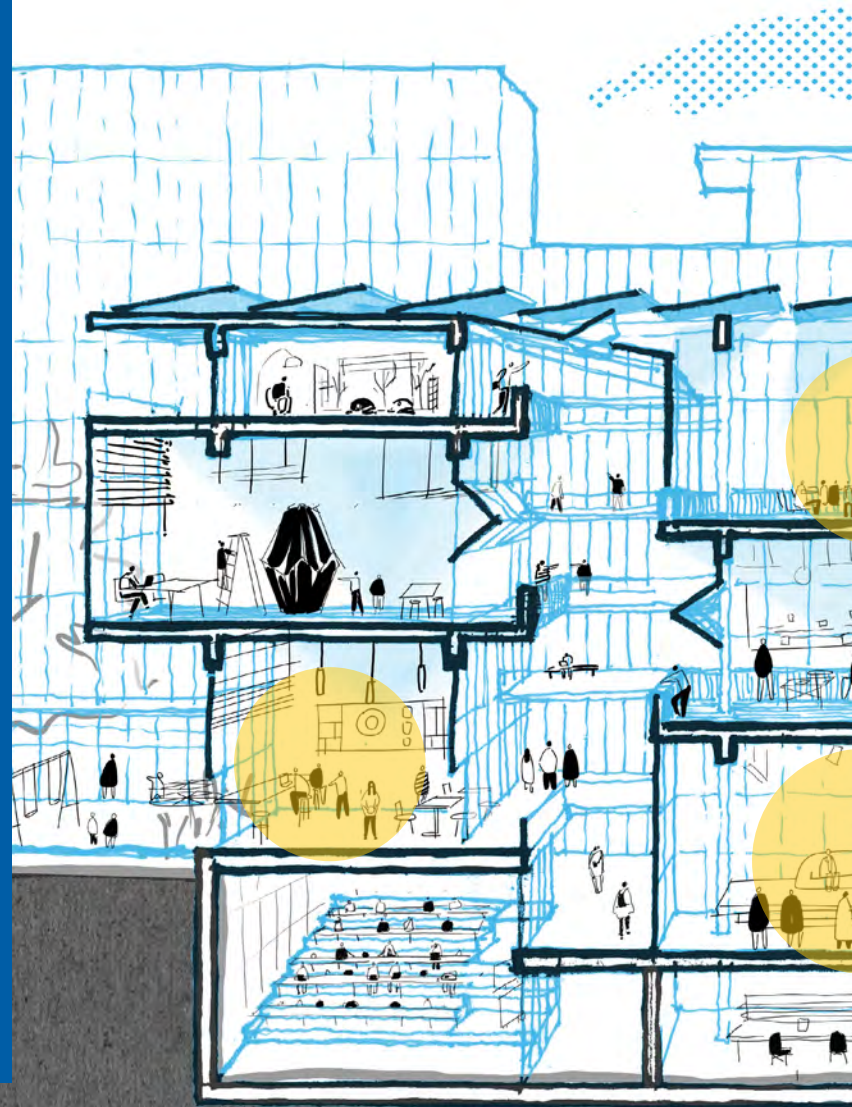
It is the annual Applied One's Community Innovation Partnership forum, a day when the researchers and community partners come together to share their innovations and challenges. Following an inspirational presentation from the City of Vancouver in Applied One's Mixing Bowl, several researchers form a collaborative team of innovative climate action PhD and undergraduate students to explore carbon sequestration strategies. The Architecture students note that if there were building cladding materials that was economical, aesthetic and practical these could be used in high density areas. The two engineering students from materials and mechanical engineering propose some options for materials. Within a few weeks the team has a successful proof of concept material that passively absorbs carbon from the atmosphere.

Applied Science

Following the panel discussion and announcements at the CARI Conference, the ADB representative proposes that the APSC Coastal Adaptation and Future Cities clusters join forces in the \$500M bid to design a 200 MW floating solar array in Singapore (considering land scarcity and sea level rise). UBC's new membership in the ADB creates a platform to participate in regional projects addressing the built-environment challenges in the megaregion centred around Shenzhen. As a partner, UBC can link its research capacity to a predictable portion of the bank's annual development budget (\$5 billion). The learnings and best practices demonstrated and piloted under CLL projects reduce GHG emissions in buildings, power generation and transportation.

Impacts/Outcomes

Interdisciplinary collaboration between students, staff and faculty is driven by the big challenges that are presented, and the expertise needed to solve the problem. The application of fundamental research is accelerated and expanded to unprecedented levels, because we are using a systems approach to accelerate climate action solutions.

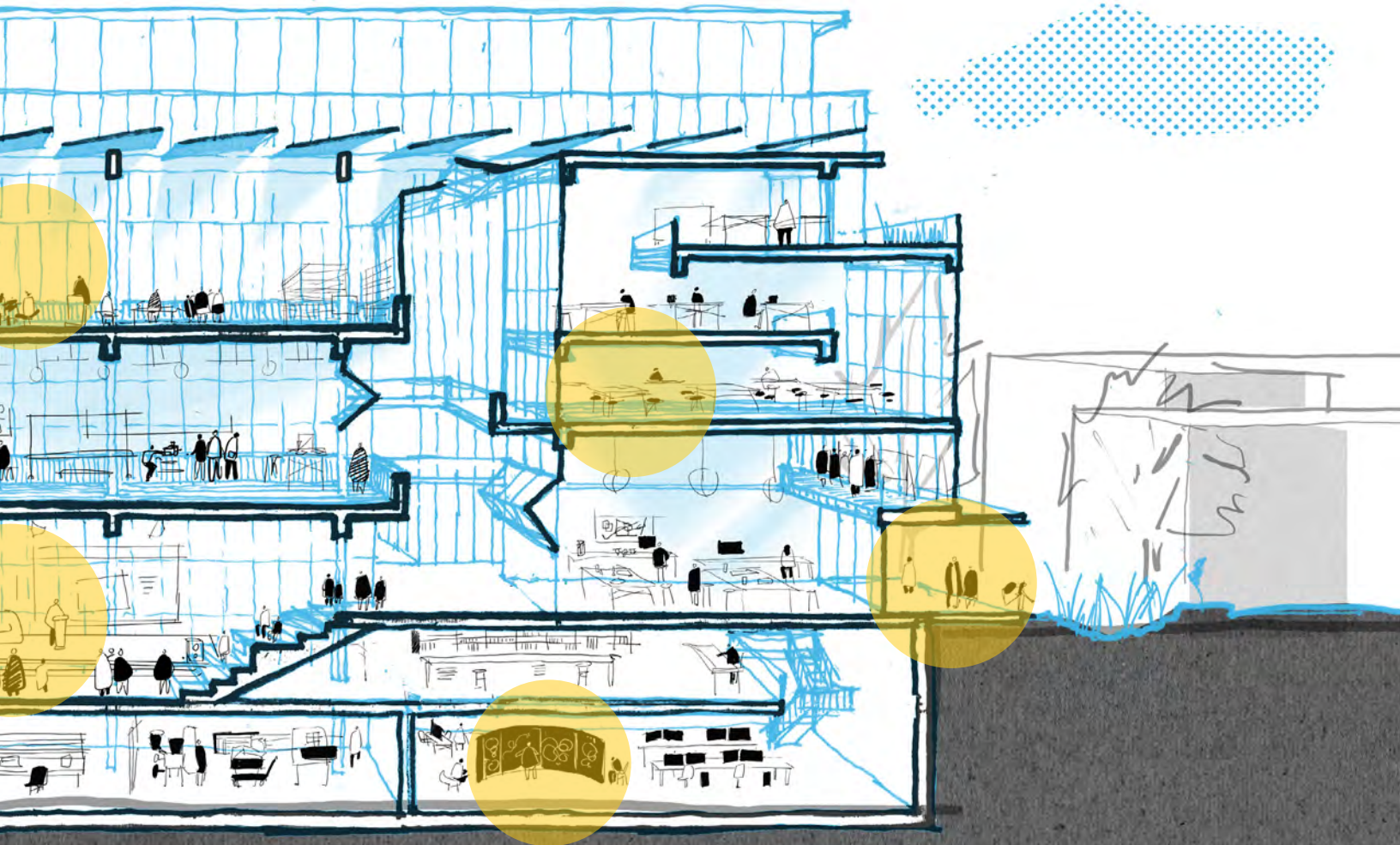


UBC

As a result of this new research as well as many other successful (and unsuccessful) ventures, the reputation of Applied Science and UBC as a place of multidisciplinary pursuits grows. UBC students, researchers and faculty members who are interested in working with dynamic and unexpected sets of people come to Applied One. Tackling real-world problems with real-world implications through the integrated 'grand challenge' research clusters is a concept that immensely attracts and appeals to prospective students and faculty alike.

Impacts/Outcomes

Applied One catalyzes & houses UBC's globally-leading Climate Action Research Institute that attracts the most creative and innovative minds across campus and acts as a venture-accelerator for broad campus partnerships. Enrollment demand and recruitment increases steadily for Applied Science and UBC as it attracts creative minds and thinkers. Applied One physically integrates operations with research and education amplifying and accelerating 'Living Lab' strategy.



External Partnerships

The development of 'Carbo-bond' panels was made possible by the collective imagination and skill sets of students, staff and faculty from multiple disciplines hosted in the collaborative environment of Applied One. This innovative product has garnered the interest of local cladding manufacturers, municipal groups, architects, real estate developers and entrepreneurs. Beyond Carbo-bond, prospective partners are interested in the further potential of new research at Applied One, and they seek to get more involved with the Faculty and its talent pipeline through funding scholarships, design competitions, and student capstone projects.

Impacts/Outcomes

The Climate Action Institute attracts large-scale government, corporate and philanthropic funding for climate action, equity and resilience. The Applied One building enables a city-scale demonstration platform for regenerative design that attracts global partners. The project accelerates the transformation of British Columbia to a clean-economy leader with 100,000 new clean tech jobs by 2030. As industry partners are increasingly involved and interested in students' work at UBC, student employment rates and co-op opportunities increase to new levels.

Global Platform

'Carbo-bond,' originally developed at UBC by enthusiastic and inspired students made possible because of the interprofessional programming within Applied One', is now a UBC-spin out with 300 employees that continues to develop and license the manufacture of the panels to at least 5 global companies that operate locally using regional materials. In just a few years, the strategy of regenerative architecture has completely changed to make Net-Zero carbon buildings a bygone standard. Instead, truly regenerative buildings are now sequestering carbon from the atmosphere and doing their part to mitigate the severity of climate change.

Impacts/Outcomes

The research and development at Applied One has made key contributions in the tools and knowledge to allow Canada, and other countries, to meet global climate targets. Knowledge, tools, technology, practices and companies that emerge from Applied One create real and lasting global and local change. UBC emerges as the global convener and voice for climate action.

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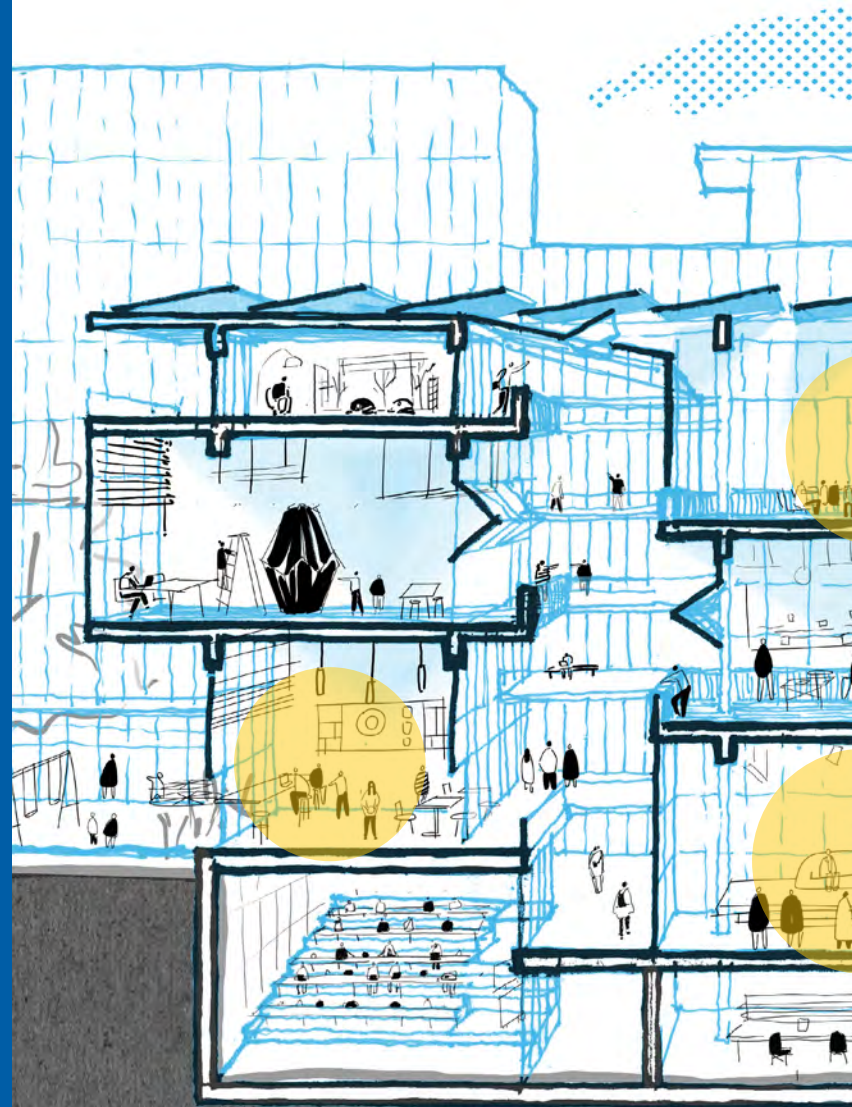
It is the annual Applied One Climate Action research forum, a day when research teams from across the Faculty share advances in innovative technology, new ideas, and community led projects focused on climate action. In the Applied One Mixing Bowl a group of Architecture students are gathered around a group of materials and mechanical engineering student's demonstration. The research group has developed an efficient and economic material that passively absorbs carbon from the atmosphere. The Architecture students offer to partner with the engineering students to develop an aesthetic and practical building cladding panel using the material. One of the students recalls a presentation at last year's forum where the speaker from the City of Vancouver said that they would be interested in testing new building materials to help Metro Vancouver reach its net zero 2050 goals.

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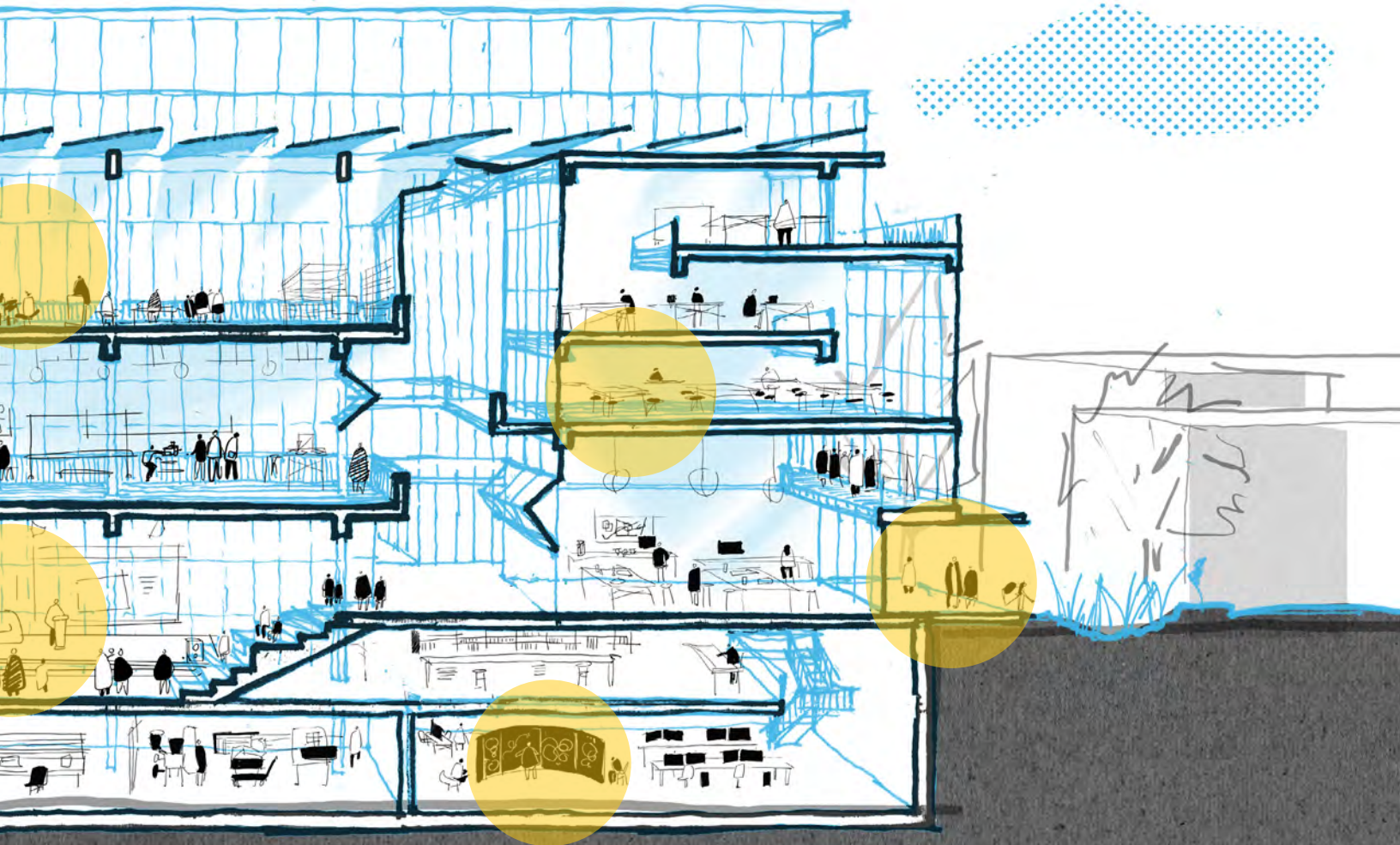


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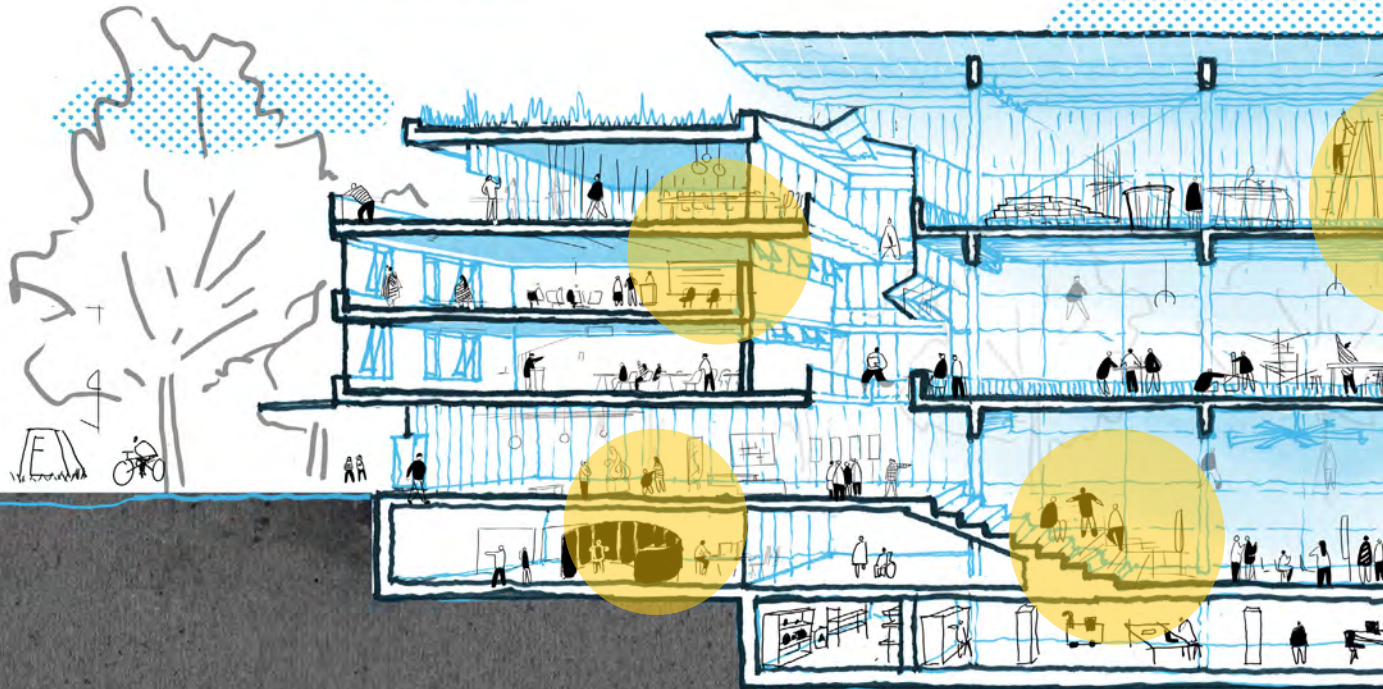
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THRIVING COMMUNITIES



Applied Science

There is a buzz of excitement as a group of students are gathered near the Hangar of Applied One outside the large lecture theatre awaiting the start of the much-talked about interprofessional, community engaged learning program - *Community Action*.

While waiting, they peer into the Community Innovation Studio, to view leading-edge research and the experimental apparatus, prototypes and models of their fellow students – and are inspired by the entrepreneurs in the HATCH - Community ventures, UBC's latest venture accelerator.

The globally unique *Community Action* program is a partnership with community leaders throughout BC and leverages our strength and expertise in community planning to identify the disparate challenges in a community and to create prioritized projects for teams of students across professions of Planning, Architecture, Engineering, Nursing, well as, Business, Law and others.

Impacts/Outcomes

- Meets the Faculties commitments of ensuring community impact on society
- Inspires leadership, community service, partnership and innovation, as well as, in our students.

UBC

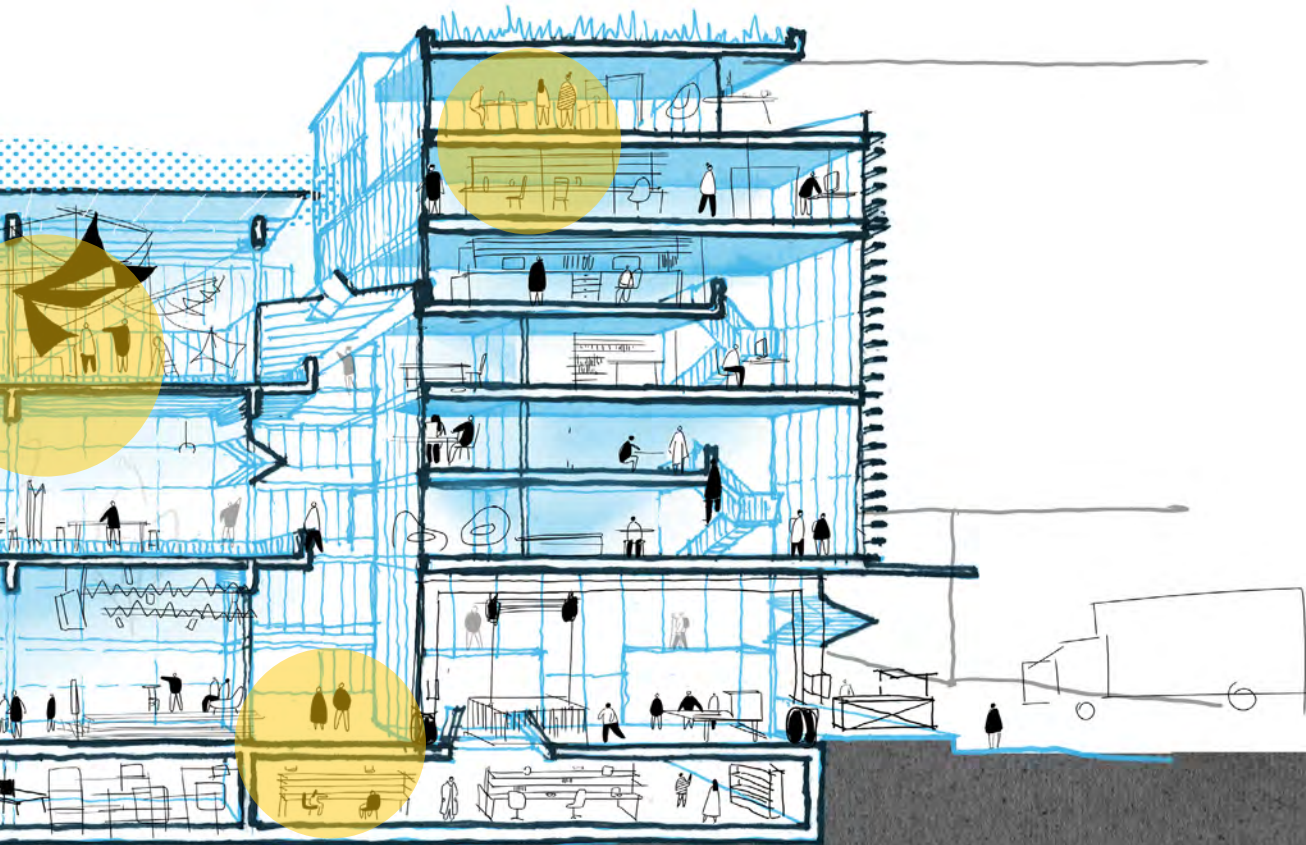
The *Community Action* program finds a home at Applied One, and gets to work - their interdisciplinary approach that blends cultural competence, design excellence and technological innovation inspires a stronger partnership with local businesses in the Vancouver area, as well as international corporations looking to establish a presence in the city.

Applied One becomes a university hub for community engaged learning across the diversity of disciplines at UBC and mobilizes more than a million hours per year of student, faculty, and staff service to solve our most vexing challenges.

Graduates who had experimented, designed, and learned in the collaborative hangars of Applied One forge lifelong connections and create new interdisciplinary ventures of their own.

Impacts/Outcomes

- Community inspired research results in an expansion of scholarly inquiry that blends deep science and leading-edge social science with real societal impact.
- UBC creates an interdisciplinary Community Action PhD program to foster and advance its global leadership position on scholarship and education.
- UBC is recognized and ranked #1 for community impact globally, increased the university's reputation and leads to increased research investment, philanthropic contributions and attraction of the best and brightest student and faculty minds.



External Partnerships

With its flexible and bookable office and meeting space community partners are welcomed and have a home in Applied One. Applied One and its programs provides an exciting new pathway for community partnerships across all scales from municipalities, to rural communities, to at-risk and vulnerable communities here in Vancouver.

Today, a *Community Action* program team of UBC students are excited to be working with a rural community in northern BC, who have identified and prioritized a need for social housing as part of their community plan. Through partnership with community leaders, the team identifies a startup concept for highly sustainable manufactured homes that utilizes local indigenous materials, designs and knowledge: a new company enters HATCH - Community Ventures and is launched.

Impacts/Outcomes

- Community partnership and engagement in research, education and innovation increases ten-fold.
- UBC's graduates are sought after by industry and community both local and global for their creativity, interdisciplinarity and leadership.
- Community challenges inspire the development of innovative technologies and ventures that stimulate economic development and high-quality jobs in BC.

Global Platform

On the global stage, Applied One represents a realized commitment to creating impact on society across scales of people, place and planet. Applied One accelerates the Faculty of Applied Science to become a worldwide leader in a movement to pivot universities to serve society.

The community challenges that manifest themselves locally have globally relevance and made at UBC solutions draw international attention of academics and practitioners in the Applied Science fields who come to UBC to learn about bridging the urban/rural divide and enacting equitable change in all built environments.

The new venture to create spectacular, indigenous inspired homes has now expanded to 100 high paying manufacturing jobs resulting in a vibrant and prosperous rural community and creating low-cost, sustainable housing to remote communities all over the world.

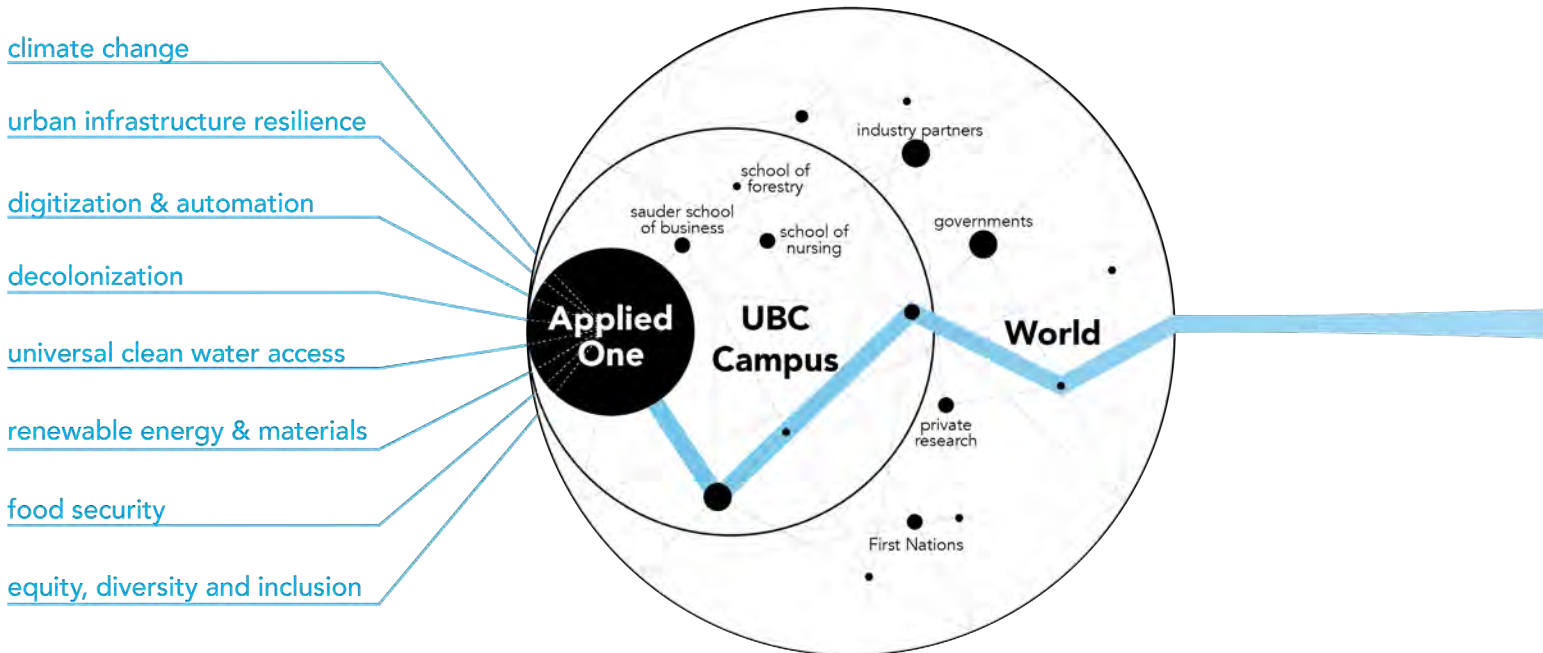
Impacts/Outcomes

- APSC's unique approach of integrated disciplines across the built environment and community engaged learning to solve local challenges with global impact are recognized for innovation an impact on climate and equity.
- UBC emerges as a global convener and leader in Thriving Communities.

OUTCOMES & IMPACTS

Continuing development of interdisciplinary ways of teaching and research are core to the growth of Applied Science and UBC on the global stage. Applied One represents an opportunity to formalize and grow these linkages between all Applied Science schools and departments, encouraging the creation of new, yet-unrealized connections. Although it is impossible to tell what new inventions, ventures, or projects will be born at Applied One in years to come, this project represents an investment in positioning the Applied Science community in service to the world, interweaving expertise across disciplines to solve pressing and emerging global challenges.

Complex problems require complex solutions. Applied One is a project conceived during a time when intersections between global grand challenges are more complicated than ever - the COVID-19 pandemic, systemic social injustices, climate change, and urbanization are all mutually-reinforcing, mounting crises that converge and feed back into one another. Through its intentional commitment to a collaborative mode of teaching and research, Applied One aims to create an environment where a similarly-complex ecosystem of researchers, designers, teachers, programs, processes, infrastructure and leaders can cultivate work that rises to meet these grand challenges. Thoughtfully creating space for intentional collisions between faculty, students, staff and community members is an investment in resilience in a changing world - shaping future leaders who are up to the grand challenges at hand.



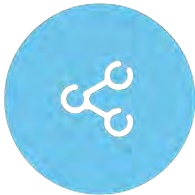
Applied One as a gateway to addressing grand challenges on multiple scales through interdisciplinary collaboration.

Applied One embodies the core vision and mission of the faculty of Applied Science by creating a space to shape future leaders who will transform the world.



University of the future.

To create professional leaders who can critically balance ethics, design, technical and social elements, Applied One is a place where new modes of teaching that leverage evolving technology come to life. Dedicated spaces for distance learning and experiential learning broaden the Faculty's reach to engage a talented, global student base. By providing spaces for emerging curricula that cultivate technical skills, critical thinking and intercultural competence simultaneously, Applied One manifests the Applied Science vision for "the university of the future."



Future of work.

Applied One enables the Faculty of Applied Science to best prepare students for a future, changing global workplace - with dedicated spaces to forge lifelong industry and community connections, and cultivate research and design that directly tackle global grand challenges. The nature of work, the tools and the ways of working are changing at an unprecedented rate; Applied One will support students, faculty and staff by equipping them with technical and cultural skills to face these professional expectations in a changing world.



Inclusive leadership and respectful engagement.

The Applied One project is an opportunity to exhibit UBC leadership in equity, inclusion and respect for human rights. Specifically, Applied One can deliver on the goals set out by the UBC Indigenous Strategic Plan - both through an intentionally inclusive design process and through providing room for Applied Science research and design work that promote justice, decolonization, and equitable access to healthy environments to all in British Columbia and beyond.

GRAND CHALLENGES



Solutions for people.

Beyond a transformational research & teaching facility, Applied One is a home for people. Applied One will demonstrate the Applied Science and UBC's commitment to human wellbeing by providing building occupants with exceptional, universally-accessible environments to work, learn, pray, relax, eat and share. By focusing on wellness and health as a key driver for the design, Applied One will connect the user to the natural ecosystems of the site, provide program areas dedicated to wellness and health and support the social dynamism of a vibrant and thriving collaborative hub.



Thriving cities and communities.

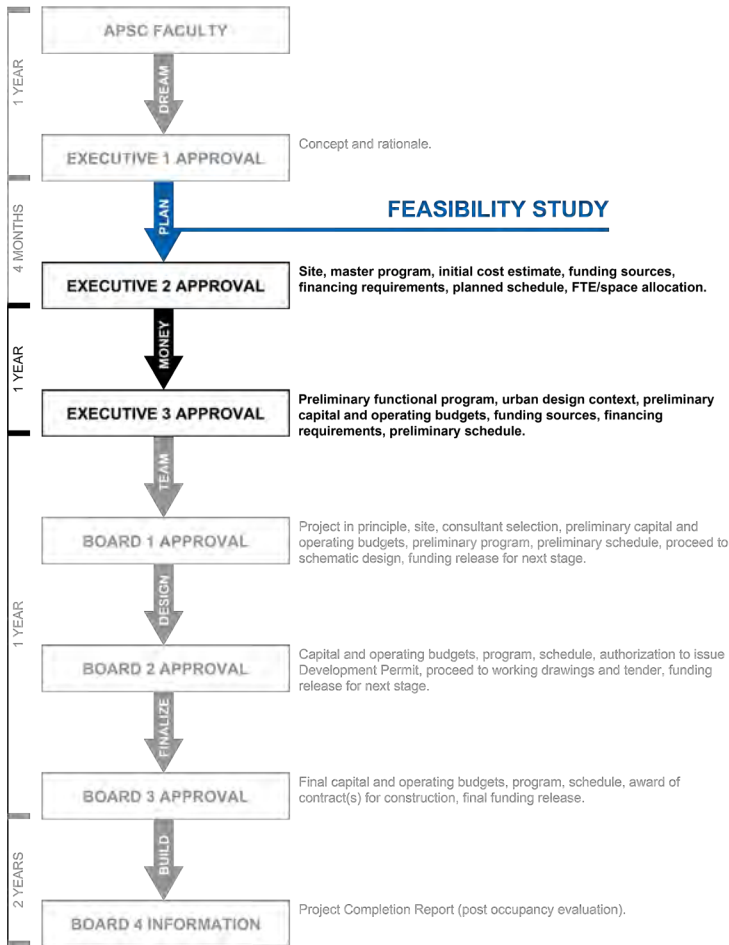
The Faculty of Applied Science is uniquely positioned to create city-scale impact across all disciplines that touch built environments. Applied One is a manifestation of this expertise, and a place that inspires change in surrounding cities - raising the bar, once more, for what a regenerative building can do for occupants, neighbours, and beyond. Applied One will host the research infrastructure for advancing the health of all types of communities, starting by demonstrating these principles as a Living Lab within the UBC campus and community.



Planetary health.

Building on existing expertise at UBC on climate change, Applied One puts lessons learned into action. A transparent, integrated design process will carefully track and document greenhouse gas emissions during design, construction and operation - valuing this information on-par with other project KPIs to make climate-smart decisions that reinforce climate action goals at UBC. The building is connected to the campus systems and contributes to the net-positive goal of the Green Building Action Plan.

NEXT STEPS



Executive 2 Approval

The process undertaken by this feasibility study has assisted in fulfilling various requirements of Executive 2 submittal for the project - such as generating the master program deliverable and the ongoing consultation with groups such as UBC Campus & Community Planning (C&CP), UBC Properties Trust (UBCPT), and members of the Faculty. Additional deliverables required for Executive 2 Approval that will be informed by this feasibility report include an initial cost estimate, and the identification of funding and financing sources.

Executive 3 Approval

Once the project moves past Executive 2 Approval, Applied One will require the input and consultation of Property & Planning Advisory Committee, Senate Academic Building Needs Committee, C&CP, and UBCPT as well a set of deliverables providing further information on items such as program, budget, funding, and project risks. This Feasibility Report will live as a document separate from Executive 2 submittal and will hopefully continue to assist the Applied One Steering Committee in Executive 3 approval, as well as the socialization of this project to generate interest and excitement in the UBC community of students, faculty, industry partners, and donors.

Key Considerations

During the course of this study, some key considerations for the success of future work were identified. As the project moves forward past the scope of the feasibility study, it is recommended that project teams and Applied Science leadership consider the soft infrastructure required to make this project a success. The Faculty cannot expect a different result if they are not willing to change the way they work; this is why fundamental changes in pedagogy and culture as well as shifts in operational structure are required to support the envisioned program for Applied One. The cultivation of Applied One's soft infrastructure may include additional studies to examine possible operational staffing models, the extent and gradation to which departments share resources and pedagogical programs, and level of access to shared equipment, staffing, maintenance/responsibility, among others. It is important to note that in order to enable true collaboration across the different schools and departments of Applied Science, Applied One must deliberately create an equal space for all disciplines.

Another key consideration for further development of Applied One is meaningful engagement with the Musqueam First Nation. The reality of the project is that the building will sit on unceded Indigenous land territories, and will be home to unique UBC professional partnerships with Musqueam through its work such as SCARP's Indigenous Community Planning (ICP) program. Due to the project's culturally-significant location on UBC's Main Mall, as well as the Faculty's commitment to decolonizing the curriculum, it is imperative that the project undergoes meaningful engagement with Musqueam prior to Executive 2 approval. Beyond this milestone, Applied One has a responsibility to promote reconciliation and adhere to the institutional commitment of UBC to self-determination of First Nations people in particular, through campus design - outlined by Action 19 of UBC's Indigenous Strategic Plan.

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