

The following Motions and Documents were considered by the GFC Facilities Development Committee at its Thursday, February 14, 2019 meeting:

Agenda Title: **Faculty of Rehabilitation Medicine - Functional Program**

CARRIED MOTION:

THAT the GFC Facilities Development Committee approve, under delegated authority from General Faculties Council and on the recommendation of Planning and Project Delivery, the proposed Faculty of Rehabilitation Medicine – Functional Space Program (as set forth in Attachment 1) as the basis for further planning.

Final Item: 4

Governance Executive Summary
Action Item

Agenda Title	Faculty of Rehabilitation Medicine – Functional Program
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Motion

<p>THAT the GFC Facilities Development Committee approve, under delegated authority from General Faculties Council and on the recommendation of Planning and Project Delivery, the proposed Faculty of Rehabilitation Medicine – Functional Space Program (as set forth in Attachment 1) as the basis for further planning.</p>

Item

Action Requested	<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Recommendation
Proposed by	Lorna Baker Perri, Director, Space Management, Facilities and Operations
Presenter(s)	Robert (Bob) Haennel, Dean, Faculty of Rehabilitation Medicine Janet Koshuta, Principle, HFKS Architects Ltd. Lorna Baker Perri, Director, Space Management, Facilities and Operations

Details

Responsibility	Vice President, Facilities and Operations
The Purpose of the Proposal is <i>(please be specific)</i>	The proposal is before the committee because it seeks approval for further planning for the Faculty of Rehabilitation Medicine (FRM).
Executive Summary <i>(outline the specific item – and remember your audience)</i>	<p>Following the development of a General Space Program (GSP) in 2017, the University (UofA) and FRM identified a need to further understand the detailed space needs of three distinct areas of growth. It was recommended that a Functional Program (FP) be developed to include these key areas. This does not mean that the other spaces within FRM are not an important part of the Faculty, however the areas of greatest risk or need have been previously identified through the GSP. These areas, also referred to as Functional Components includes:</p> <ol style="list-style-type: none"> 1. Interdisciplinary Clinic 2. Instructional Spaces (both classrooms and clinical teaching spaces) 3. Research Laboratories (wet bench only) <p>A FP will provide the Faculty with an understanding of the space needs, as projected over the next five (5) years. The FP includes all space components required to accommodate FRM’s wet laboratories, teaching spaces including clinical space, particularly the Interdisciplinary Clinic.</p> <p><i>Objective of the Study</i></p> <ol style="list-style-type: none"> 1. Through a consultative process, determine the anticipated growth for the FRM within a five (5) year planning horizon. 2. Identify opportunities to optimize space to accommodate expansion of key program areas, identified to require the highest level of growth. 3. Better position the Faculty for a future opportunity by clearly articulating their growth needs.

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	<p>4. The proposed strategies must outline the proposed distribution of the space requirements to enhance the overall cohesiveness of the Faculty.</p> <p><i>Challenges</i></p> <p>The Faculty is located in many buildings across many campuses and cities. As a result, some growth has been limited simply due to current space constraints. The satellite programs must maintain connectivity. A significant investment has been made into the information technology infrastructure which allows programs to run concurrently in two or three locations. This must be maintained as it is a critical aspect of the Faculty's programs.</p> <p><i>Next steps</i></p> <p>The development of the Functional Program aligns with other high-level planning activities which are focused on the UA North Campus and the University Hospital (Walter C. Mackenzie, Kaye Edmonton Clinic and other adjacent sites occupied by Alberta Health Services). Due to the linkages between FRM and AHS there is some advantage to confirm a vision for the Faculty so that it is poised to grow accordingly and in support of the health care services that are provided on adjacent sites.</p> <p>Once approved, the Functional Program outlines a proposed strategy to be used as the basis of space allocation and planning to move forward; the process would be led under the responsibility of the UA Space Management portfolio. It would be used as a founding document to further develop and/or identify a project for the Faculty of Rehabilitation Medicine.</p>
Supplementary Notes and context	N/A

Engagement and Routing (Include meeting dates)

<p>Consultation and Stakeholder Participation (parties who have seen the proposal and in what capacity)</p> <p><For information on the protocol see the Governance Resources section Student Participation Protocol></p>	<p><u>Those who are actively participating:</u></p> <ul style="list-style-type: none"> · Stakeholders, user groups and representatives from the Faculty of Rehabilitation Medicines' departments, centres and institutes. <hr/> <p><u>Those who have been consulted:</u></p> <ul style="list-style-type: none"> · Dean, Faculty of Rehabilitation Medicine · Director, Space Management · Associate Vice-President, Planning and Project Delivery <hr/> <p><u>Those who have been informed:</u></p> <ul style="list-style-type: none"> · Vice-President, Facilities and Operations · Deputy Provost
Approval Route (Governance) (including meeting dates)	January 24, 2019 – GFC Facilities Development Committee - Approval

Strategic Alignment

Alignment with <i>For the Public Good</i>	<u>Institutional Strategic Plan – For the Public Good</u>
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Item No. 4

	<p>SUSTAIN our people, our work, and the environment by attracting and stewarding the resources we need to deliver excellence to the benefit of all.</p> <p>23. Objective: Ensure that the University of Alberta’s campuses, facilities, utility, and information technology infrastructure can continue to meet the needs and strategic goals of the University.</p> <p>i. Strategy: Secure and sustain funding to plan, operate, expand, renew, and optimize the use of campus infrastructure to meet evolving teaching and research priorities.</p>		
<p>Alignment with Institutional Risk Indicator</p>	<p>Please note below the specific institutional risk(s) this proposal is addressing.</p> <table border="0" data-bbox="570 630 1541 840"> <tr> <td data-bbox="570 630 1088 840"> <input checked="" type="checkbox"/> Enrolment Management <input checked="" type="checkbox"/> Faculty and Staff <input type="checkbox"/> Funding and Resource Management <input type="checkbox"/> IT Services, Software and Hardware <input type="checkbox"/> Leadership and Change <input checked="" type="checkbox"/> Physical Infrastructure </td> <td data-bbox="1088 630 1541 840"> <input type="checkbox"/> Relationship with Stakeholders <input type="checkbox"/> Reputation <input checked="" type="checkbox"/> Research Enterprise <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Student Success </td> </tr> </table>	<input checked="" type="checkbox"/> Enrolment Management <input checked="" type="checkbox"/> Faculty and Staff <input type="checkbox"/> Funding and Resource Management <input type="checkbox"/> IT Services, Software and Hardware <input type="checkbox"/> Leadership and Change <input checked="" type="checkbox"/> Physical Infrastructure	<input type="checkbox"/> Relationship with Stakeholders <input type="checkbox"/> Reputation <input checked="" type="checkbox"/> Research Enterprise <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Student Success
<input checked="" type="checkbox"/> Enrolment Management <input checked="" type="checkbox"/> Faculty and Staff <input type="checkbox"/> Funding and Resource Management <input type="checkbox"/> IT Services, Software and Hardware <input type="checkbox"/> Leadership and Change <input checked="" type="checkbox"/> Physical Infrastructure	<input type="checkbox"/> Relationship with Stakeholders <input type="checkbox"/> Reputation <input checked="" type="checkbox"/> Research Enterprise <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Student Success		
<p>Legislative Compliance and jurisdiction</p>	<p>Post-Secondary Learning Act (PSLA):</p> <p>The PSLA gives GFC responsibility, subject to the authority of the Board of Governors, over academic affairs (Section 26(1)) and provides that GFC may make recommendations to the Board of Governors on a building program and related matters (Section 26(1) (o)).</p> <p>Section 18(1) of the PSLA give the Board of Governors the authority to make any bylaws “appropriate for the management, government and control of the university buildings and land.”</p> <p>Section 19 of the Act requires that the Board “consider the recommendations of the general faculties council, if any, on matters of academic import prior to providing for (a) the support and maintenance of the university, (b) the betterment of existing buildings, (c) the construction of any new buildings the board considers necessary for the purposes of the university [and] (d) the furnishing and equipping of the existing and newly erected buildings [.] [..]”</p> <p>Section 67(1) of the Act governs the terms under which university land may be leased</p> <p>GFC Facilities Development Committee Terms of Reference</p> <p>1.Mandate and Role of the Committee</p> <p>The GFC Facilities Development Committee (FDC) is a standing committee of GFC with delegated authority to make recommendations to General Faculties Council and the Board of Governors. The committee reviews and recommends on general space and functional programs, the design and use of facilities, and policies related to facilities and planning.</p> <p>2.Areas of Responsibility</p> <p>a. Policy with respect to planning and facilities</p>		

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	<p>b. General Space Programs for Academic Units c. Design and use of all new facilities and repurposing of existing facilities d. Other matters within the purview of the committee</p> <p>4. Delegated Authority from General Faculties Council and/or the Board of Governors 4.1 To approve proposed General Space Programs for academic units</p> <p>UAPPOL Space Management Policy and Space Management Procedure</p> <p>The respective roles of GFC FDC and the Vice-President (Facilities and Operations) with regard to institutional space management are set out in the Board-approved Policy and attendant Procedure.</p>
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Attachments:

1. Attachment 1 – Functional Program University of Alberta Faculty of Rehabilitation Medicine- 30 November 2018 (66 pages)

Prepared by:

Kelly Anderson, Space Planner
Space Management
Planning and Project Delivery
Facilities and Operations
kja2@ualberta.ca



Functional Program

University of Alberta

Faculty of Rehabilitation Medicine

Submission – 30 November 2018

FINAL



COVER PAGE

Photograph: Corbett Hall, photo courtesy of Faculty of Rehabilitation Medicine
 Photograph: Clinic Space, photo courtesy of Faculty of Rehabilitation Medicine
 Photograph: Students, photo courtesy of Faculty of Rehabilitation Medicine

All photographs provided by FRM Marketing & Communications

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FUNCTIONAL PROGRAM

Overview

The University of Alberta (UA) is home to North America's only free-standing Faculty of Rehabilitation Medicine (FRM). It is a world class post-secondary institution that provides academic education in rehabilitation science, physical therapy, occupational therapy and speech-language pathology. A research leader in musculoskeletal health, neuroscience, children's health, aging, military health and rehabilitation technology; this is the institution of choice for rehabilitation professionals, researchers, students and scientists.

The Faculty is headquartered in the historic Corbett Hall at UA's North Campus however the Faculty, both teaching and research is accommodated across three campuses and over 10 buildings. In order to provide a link between campuses, classes (lectures, seminars and labs) are delivered either face-to-face or by real-time web/video cast technology on 60-inch plasma screens to view professors from other campuses. State-of-the-art technology is employed to ensure that students have real time communication with lecturers based in Edmonton, Camrose or Calgary. While the majority of classes are broadcast from Edmonton, faculty will broadcast from all campuses throughout the program. In-person faculty members are present at all campuses during all lectures, seminars and labs.

Purpose of the Study

Following the development of a General Space Program (GSP) in 2017, the University and FRM identified a need to further understand the detailed space needs of three distinct areas of growth. It was recommended that a Functional Program be developed to include these key areas. This does not mean that the other spaces within FRM are not an important part of the Faculty, however the areas of greatest risk or need have been previously identified through the GSP. These areas, also referred to as Functional Components includes:

1. Interdisciplinary Clinic
2. Instructional Spaces (both classrooms and clinical teaching spaces)
3. Research Laboratories (wet bench only)

A Functional Program (FP) will provide the Faculty with an understanding of the space needs, as projected over the next five (5) years. The Functional Program includes all space components required to accommodate FRM's wet laboratories, teaching spaces including clinical space, particularly the Interdisciplinary Clinic.

Objectives of the Study

1. Through a consultative process, determine the anticipated growth for the FRM within a five (5) year planning horizon. The consultative process included three (3) rounds of user group meetings which were formed to capture each identified functional component within the Faculty. User group participants were chosen upon recommendations from Department Chairs and members of the Administrative User Group. Each participant was provided the opportunity to comment on space usage and needs within their current lab space.
2. Identify opportunities to optimize space to accommodate expansion of key program areas, identified to require the highest level of growth.
3. Better position the Faculty for a future opportunity by clearly articulating their growth needs.

4. The proposed strategies must outline the proposed distribution of the space requirements to enhance the overall cohesiveness of the Faculty.

Deliverables

The final deliverable at this stage is the detailed report, contained herein. As per the original Scope of Work description provided by Space Management, the report will:

- Provide a written description of the scope, activities and design criteria of each Functional Component in their current and projected states.
- Provide and articulate conceptual solutions. These solutions/strategies must address key priority needs, be cost effective, functionally viable and based upon supported space requirements.
- Update and provide a space inventory with corresponding floor plan diagrams.

Challenges

The Faculty is located in many buildings across many campuses and cities. A map of FRM's locations is provided on page 44. As a result, some growth has been limited simply due to current space constraints. The satellite programs must maintain connectivity. A significant investment has been made into the information technology infrastructure which allows programs to run concurrently in two or three locations. This must be maintained as it is a critical aspect of the Faculty's programs.

Corbett Hall is the main building for FRM; it is the administrative hub for the Faculty. Teaching, clinical/practicum education, research, professional development/continuing education and all administrative functions for the Faculty and all three Departments occurs within Corbett Hall. One of the oldest and iconic buildings on UA North Campus, Corbett Hall does have limitations on what activities can be accommodated here. Some examples include:

- There are currently wet bench research labs within Corbett Hall however the current infrastructure cannot support any additional wet lab space.
- The building can also be quite challenging for people with accessibility issues to enter and move throughout. This includes limited barrier free access and elevator that does not provide easy access for all.
- Wide interior corridors are nice but inefficient; these corridors are often used as clinic walking space which often conflicts with building circulation.
- Traditional tiered lecture theatres do not provide a flexible enough space for the Departments' needs.

Opportunities

- The development of an Interdisciplinary Student Clinic would provide the ability to share common resources among the Departments. This would provide both a space efficient solution and provide a better practice and teaching environment for all students within the Faculty.
- An integrated, multidisciplinary lab model would provide common lab resources and equipment to all research teams within the Faculty. This would be modelled to support the translation of

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research to clinical practice with a strong focus on collaboration between researchers and disciplines.

- Provide flexible teaching spaces to accommodate current and future teaching pedagogy.

Outcomes

Through the development of the Functional Program, the Institute for Reconstructive Sciences in Medicine (iRSM) was included with the Research User Group. iRSM is a joint initiative of UA, Covenant Health and Alberta Health Services and occupies space within several facilities throughout Edmonton. Some of their labs studied are currently located at the Misericordia Hospital. Due to the complexity of this group, it was determined that a more comprehensive space study should be initiated to fully explore the entire future space needs for the Institute. This falls outside of this Functional Program and will be undertaken as a separate initiative. The space needs are captured within the Research component but are excluded from the overall projected needs.

Design Principles

In June 2016, the General Faculties Council and the Board of Governors unanimously passed the new UA Institutional Strategic Plan (ISP). This document, titled “For the Public Good”, outlines the institution’s strategic goals: build, experience, excel, engage and sustain. There are defined objectives and working strategies outlined throughout the ISP, encouraging inclusivity and challenging active engagement. A copy of the ISP can be found: <https://www.ualberta.ca/strategic-plan/overview>.

The Faculty has developed a new Strategic Plan 2017-2020, titled “Advancing the Art & Science of Rehabilitation”. This plan outlines the Faculty’s vision, mission, values and goals which are aligned with the new UA Institutional Strategic Plan. A series of goals are outlined and summarized to include (excerpts as presented in the Strategic Plan):

1. **Culture:** *build an organization and workplace culture that values integration across disciplines at the faculty level, staff level and student level. FRM workplaces will be vibrant, effective, positive and respectful.*
2. **Research:** *develop a vibrant research environment that supports the creation and dissemination of knowledge.*
3. **Education:** *attract and support outstanding students and enhance the collective FRM student learning experience through quality interdisciplinary activities.*
4. **Profile:** *increase the profile of FRM within UA and beyond.*

A copy of the FRM Strategic Plan can be found on the UA website at: <https://www.ualberta.ca/rehabilitation>.

Through the process of developing both the General Space Program (2017) and this Functional Program there is a linkage back to an understanding that the vision of space is supported by the strategic plans at both the Faculty and institutional level. Both documents include goals to support research and education by providing the necessary resources needed for growth. This drove the identification of the three (3) specific Functional Components in which the Functional Program is based. These are key areas of growth in which both the Faculty and the University strive to reach the goals set out.

In the case of Rehab Medicine, as a specialty profession that is driven by the need of a region based on population, there are published metrics that provide context of this need. This becomes a critical factor in determining the current and projected requirements for professionals and how the various regions in Canada are responding to fulfilling the need. These metrics drive the academic programs across the country and provide rationale as to the demand on a particular program, such as those at UA. This is further addressed in the Introduction Section.

Anticipated Growth

Student Growth:

The planning horizon for this study is five years, with growth projected out to the 2022/2023 academic year. Within five years, it is anticipated that annual student enrollment will rise to 398 students. This represents a growth of approximately 15% or 52 students over five years. The most significant growth is anticipated in the Graduate Programs, which could see growth as high as 51%.

Additional detail is provided in the Introduction Section.

Staff Growth:

Additionally, staff for these three key components only, is anticipated to increase 58% or from 79 current staff to a total of 125 (increase of 46 people). This increase includes academic, support staff and graduate students (in the case of research). The largest increase in staff growth is for the Research Component, resulting in a potential doubling of staff due to new recruits. There is no staff growth projected for the Instructional Space component as academic staff would continue to primary staff users of the space. Growth is based on student growth, as outlined in the previous paragraph.

A summary of the projected staff growth, by Functional Component, is provided below. A more detailed staff breakdown is provided in each of the Functional Component Sections.

Table i: Occupant Summary

User Group	Current		Future		Total Projected 2022/23	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Interdisciplinary Clinic	26.79	31	1.00	1	27.79	32
Instructional Space	n/a	n/a	n/a	n/a	n/a	n/a
Research	46.00	48	45.00	45	91.00	93
TOTAL	72.79	79	46.00	46	118.79	125

Space Growth:

The resultant anticipated space requirement is determined to be an approximate 64% increase – from an existing 3,587 net square meters (nsm) to 5,867.0nsm. This is a total growth of approximately 2,280nsm.

A space summary table is provided on the following page and a detailed space list is provided in each of the Functional Component Sections.

Table ii: Total Space Requirements

	2017/18	2022/23
	Existing	Projected
Interdisciplinary Clinic		
Administrative Space	114.4	186.0
Clinic Space	625.2	973.0
Audiology	0.0	110.0
Total, Interdisciplinary Clinic	739.6	1,269.0
Instructional Spaces		
Instruction - Laboratory, Shop and Studio Space (Clinical Teaching)	2,147.5	3,030.0
Total, Instructional Spaces	2,147.5	3,030.0
Research Space		
FRM Wet Bench Research	355.3	1,006.0
Audiology (New Recruit)	0.0	129.0
Rehabilitation Robotics	345.0	433.0
Total, Research Space	700.3	1,568.0
TOTAL SPACE REQUIREMENTS	3,587.4	5,867.0
Table Notes:		
1. A reduction of space in some areas can be attributed to the application of UA space standards (existing spaces may exceed the current standards).		
2. Excludes space projections for iRSM; this will be addressed through a follow up programming exercise for that component.		

Next Steps

The development of the Functional Program aligns with other high-level planning activities which are focused on the UA North Campus and the University Hospital (Walter C. Mackenzie, Kaye Edmonton Clinic and other adjacent sites occupied by Alberta Health Services). Due to the linkages between FRM and AHS there is some advantage to confirm a vision for the Faculty so that it is poised to grow accordingly and in support of the health care services that are provided on adjacent sites.

The Functional Program will ultimately be submitted to the Facilities Development Committee (FDC), a division of the General Facilities Council (GFC), which is responsible for campus planning and facilities. Once approved, the Functional Program outlines a proposed strategy to be used as the basis of space allocation and planning to move forward. It would be used as a founding document to further develop and/or identify a project for the Faculty of Rehabilitation Medicine.

BACKGROUND & PURPOSE OF STUDY

Functional Programs describe and quantify the activities of a particular department or unit (it can be all of these combined) and the student, staffing and support requirements to properly carry out these activities. University Space Standards are used to develop the overall net assignable space that might be required.

Space Management benchmarks these results against the requirements of other faculties and units on campus as well as against spaces of similar types within our Universities and within Industry to determine that the space requirements are reasonable, fair and a proper utilization of available resources.

The ongoing planning of facilities at the university involves developing Functional Programs, whether for the functional renewal and/or repurposing of existing space, the allocation of space within the university inventory, or the development of new building space. The preparation of a Functional Program is a collaborative process that is undertaken within the context of assessing the overall needs of the university as outlined in strategic documents such as the Comprehensive Institutional Plan (CIP), Capital Plan and Faculty Academic Plans. A functional Program identifies supported requirements and normally includes:

- A description of the scope and activities of Functional Component as they currently are and how they are envisioned to be over the planning horizon - usually 5 or 10 years. This will include a projection of current and future trends within the field.
- A quantification of the number of students, faculty, staffing and supports needed to carry out these functions properly.
- An identification of the current space locations and allocations by type/function and position in the form of a current inventory.
- Summary of requirements in table format which outlines the current, immediate and future space needs.
- Identification of key special relationships and adjacencies.
- Inclusion of spatial relationship diagrams, such as blocking or stacking diagrams.
- Potential implementation strategies or concepts, possibly with decant plans.

Depending on scale, the Functional Program is subject to an approval process that includes sign off by the faculty or department, by Space Management, by Facilities and Operations executive, and ultimately by the Facilities Development Committee (FDC).

The University has given high priority to complete an update of the space requirements for the Faculty of Rehabilitation Medicine. It has been some time since the last space program developed for this Faculty. The outcome of this planning exercise is to provide the University with a clear understanding of the Faculty's long-term space requirements and thereby assist the University's long-range planning goals.

HFKS Architects Inc. has been retained to work with the Faculty of Rehabilitation Medicine to prepare a Functional Program. The following

document captures the summary of discussions and outlines the specific space requirements.

METHODOLOGY

Between March and October 2018, this study was undertaken using the following methodology:

- Existing documents were provided to the consultant team and used to provide background information. This included:
 - CAFM drawings and an existing space inventory list, from 2017.
 - Additional drawings were accessed through the University's UIRAP.
- The consultant team was toured through the buildings at the beginning of the project.
- The Faculty provided a list of current staff and space for the Functional Components.
- The consultant team led three rounds of User Group meetings. Prior to the first meeting, an agenda and description of methodology was circulated so that the Groups could prepare themselves with required information and responses. Meeting notes were prepared and circulated following each meeting.
 - The first round of meetings focused on developing an understanding of the definition of each User Group (i.e. responsibilities, scope of services, etc.), confirming the current and future staffing and discussing the future growth requirements within the planning horizon.
 - The second round of meetings confirmed the information that was collected and documented at the first meeting but focus shifted to discuss impact to space and improved functional adjacencies.
 - The third round of meetings was focused on confirming student/program projections and the resulting space implications.
- Two additional User Group meetings were held to further discuss the future growth and development of Research Labs, iRSM and Rehabilitation Robotics. A cross section of Faculty was assembled for each meeting so that many views could be represented, providing a comprehensive level of visioning.
- In November 2018, a draft submission of the Functional Program was circulated within the User Group contacts and the FRM Facilities Committee. Comments received were incorporated into the final document.

FORMAT AND TERMINOLOGY

For purposes of space planning and programming, the following widely accepted definitions of building space are frequently used:

Net Assignable Square Metres (NASM) - is the floor area of space assigned to a specific use/function, measured to the inside face of walls, i.e. the internal size of a room/space. NASM are used to identify and tabulate the detailed space requirements in General Space Programs and Functional Programs.

Component Gross Square Metres (CGSM) - differs from NASM in that it includes internal circulation, i.e. it represents the 'footprint' of an occupant's space.

Non-Assignable Areas - are building areas unavailable for assignment to an occupant, but necessary for the general support of a building. There are four categories of Non-Assignable Area: Building Service/Custodial Area, Mechanical Area, General Circulation Area, and Residual/Structural Area.

Gross Square Metres (GSM) - is the total of all Assignable and Non-Assignable areas. GSM calculations tend to be most useful for the purposes of planning, capital funding and construction.

Non-Supported Space - is university space normally out-of-scope for government funding grants and utilization reporting. It includes various types of ancillary space such as cost-recovery/revenue-generating functions, residences, parkades and leased space. Selected portions of a building may be classified as non-supported space.

COMMON ACRONYMS

A number of acronyms are commonly used by the Faculty. Frequently used terms are provided below.

AHS = Alberta Health Services
 BSC = Biological Safety Cabinet
 BSL = Biological Safety Level
 CAFM = Computer-Aided Facility Management
 CFI = Canada Foundation for Innovation
 cgsm = component gross square meters
 CH = Corbett Hall
 CHEEP = Corbett Hall Early Education Program
 CIHI = Canadian Institute for Health Information
 CIP = Comprehensive Institutional Plan
 CP = College Plaza
 CSB = Clinical Sciences Building
 CSD = Department of Communication Sciences and Disorders
 ECHA = Edmonton Clinic Health Academy
 ENG = electronystagmography
 FDC = Facilities Development Committee
 FoMD = Faculty of Medicine & Dentistry
 FRM = Faculty of Rehabilitation Medicine
 FP = Functional Program
 FTE = Full Time Equivalent
 GFC = General Faculties Council
 gsm = gross square meters

GSSMC = Glen Sather Sports Medicine Clinic
GSP = General Space Program
HSLAS = Health Sciences Laboratory Animal Services
HMRC = Heritage Medical Research Centre
iRSM = Institute for Reconstructive Sciences in Medicine
ISP = Institutional Strategic Plan
ISTAR = Institute for Stuttering Treatment & Research
MBA = Master of Business Administration
MSc = Master of Science
MScOT = Master of Science in Occupational Therapy
MScPT = Master of Science in Physical Therapy
MScSLP = Master of Science in Speech Language Pathology
nsm (or asm) = net square meters (or assignable square meters)
OPAU = Occupational Performance Analysis Unit
OT = Department of Occupational Therapy or Occupational Therapist
PDF = Post-Doctoral Fellow
PI = Principle Investigator
PhD = Doctor of Philosophy
PT = Department of Physical Therapy or Physical Therapist
PTSC = Corbett Hall Physical Therapy Student Clinic
RMTG = Rehab Medicine Technology Group
RRC = Rehabilitation Research Centre
SCN = Strategic Clinical Network
SLP = Speech Language Pathology
SOP = Standard Operating Protocol
UA = University of Alberta
UIRAP = University Infrastructure Records Access Program
VR = Virtual Reality

PROJECT OVERVIEW

The following list of User Groups were interviewed as part of the data collection for this study:

- Research Laboratories (wet bench only)
- Teaching Spaces
- Interdisciplinary Clinic

STUDENT PROJECTION

For the purpose of this study within the five-year planning horizon, it is not anticipated that there will be any significant growth of students enrolling in the entry to practice MSc programs. It is anticipated that there will be more substantial growth in the number of students enrolling in the Rehabilitation Sciences (MSc and PhD) Graduate programs, by as much as 51%.

The following table illustrates the anticipated growth, by program. The figures represent the number of students that entered the program during that academic year. Most of the Masters level programs are 24-28 months in duration. This data was provided by the Office of the Dean.

Table 1: Student Projections by Program

Program	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2022-23	Remarks
Masters Programs ²								
MSc Occupational Therapy (OT)								
North Campus	101	90	90	98	99	100	100	15 seats in Edmonton are for Saskatchewan students
Calgary Campus	0	12	15	22	26	20	20	
MSc Physical Therapy (PT)								
North Campus	82	80	83	80	80	79	80	
Calgary Campus		18	19	18	18	14	18	
Augustana Campus	12	12	12	12	12	12	12	
MSc Speech-Language Pathology (SLP)	53	52	54	52	50	56	58	course based option
MSc Speech-Language Pathology (SLP)	4	5	4	5	8	incl. above	incl. above	thesis based option (students apply to course based on entry, 3-6 per year)
MSc Audiology	-	-	-	-	0	0	12	pending approval
Subtotal, Masters Programs	252	269	277	287	293	281	300	
Graduate Programs ³								
	0	0	0	0	0	0	incl. above	combined degree students apply at time of admission to the MScSLP program or during the first semester of study, 2-3 per year
Combined MSc/PhD (SLP)	-	-	-	-	-	-	2	future consideration
Combined MSc/PhD (PT)	-	-	-	-	-	-	40	
MSc Rehabilitation Science	20	22	22	21	29	29	2	
Specialism in Surgical Design and Simulation	1	0	1	1	0	0	2	in collaboration with iRSM & Dept of Art & Design, Faculty of Arts
PhD in Rehabilitation Science	34	36	38	36	36	36	50	
Doctor of Audiology (AuD)	-	-	-	-	-	-	4	future consideration
Subtotal, Graduate Programs	55	58	61	58	65	65	98	
TOTAL	307	327	338	345	358	346	398	

Quotas

The Faculty of Rehabilitation Medicine's professional programs – MScOT, MScPT, MScSLP – are all quota programs with annual target enrollments. The GFC Manual describes board approved entrance quotas as follows: *Due to the nature of the placements required and/or agreements with Provincial Health Authorities, the Health Sciences Faculties have specific entrance quotas in addition to their Faculty targets within the overall University enrolment management. (GFC Manual 50.7).* As such, funding for rehabilitation programs evolves from discussions with government health and education ministries regarding projections for population demographics, population health, and health professions work force statistics. Operationally, due to recently approved enrollment expansion and additional government funding, the satellite sites have specific quotas for enrollment within the professional programs' overall targets.

Program	Quota	Edmonton	Calgary	Camrose
MScSLP	56 seats	56 seats	-	-
MScOT	120 seats	100 seats (15 Sask.)	20 seats	-
MScPT	105 seats	79 seats	14 seats	12 seats

Table 2A: Number of Professionals by Region (OT & PT)						
Province	Population, 2014	Number of Professionals per Region ¹				Remarks
		OT		PT		
Alberta	4,120,900	1,947	47	2,477	60	
British Columbia	4,638,400	2,025	44	3,288	71	
Saskatchewan	1,122,300	341	30	680	61	
Manitoba	1,280,200	635	50	689	54	
Ontario	13,677,700	5,226	38	7,815	57	
Quebec	8,214,900	4,711	57	4,464	54	
New Brunswick	754,600	329	44	493	65	
Nova Scotia	942,400	481	51	639	68	
PEI	146,200	51	35	-	-	
Newfoundland	529,100	192	36	259	49	includes Labrador
Yukon	37,000	-	-	38	103	
Northwest Territories	44,000	39	33	-	-	OT includes all Territories
Nunavut	36,100	-	-	-	-	
Total	35,543,800	15,977	45	20,842	59	
<i>Sources:</i>						
<i>Statistics Canada, July 1, 2014</i>						
<i>Health Workforce Database, 2014 from CIHI (Canadian Institute for Health Information)</i>						
<i>Notes:</i>						
<i>1. Under each discipline, the column on the left represents the actual number of professionals; the column on the right represents the number of professionals per 100,000 population.</i>						

Table 2B: Number of Professionals by Region (SLP & Audiology)						
Province	Population, 2013	Number of Professionals per Region ¹				Remarks
		SLP		Audiology		
Alberta	4,007,700	1,303	33	161	4	
British Columbia	4,582,600	1,064	23	259	6	
Saskatchewan	1,106,100	320	29	35	3	
Manitoba	1,265,300	376	30	63	5	
Ontario	13,551,000	3,014	22	657	5	
Quebec	8,154,800	2,234	27	401	5	
New Brunswick	755,700	221	29	70	9	
Nova Scotia	943,000	233	25	72	8	
PEI	145,400	39	27	7	5	
Newfoundland	528,000	141	27	30	6	includes Labrador
Yukon	36,400	-	-	-	-	
Northwest Territories ¹	43,900	28	24	4	9	see note 2 below
Nunavut	35,400	-	-	-	-	
Total	35,155,300	8,973	26	1,759	5	
<i>Sources:</i>						
<i>Statistics Canada, July 1, 2013</i>						
<i>Canada's Health Care Providers: Provincial Profile, 2013 from CIHI (Canadian Institute for Health Information)</i>						
<i>Notes:</i>						
1. Under each discipline, the column on the left represents the actual number of professionals; the column on the right represents the number of professionals per 100,000 population.						
2. For Territories, estimated number of professionals calculated by subtracting number from all ten provinces of Canadian total.						

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Province	University	Program Admissions				Remarks
		MScOT	MScPT	MScSLP	Audiology	
Alberta	University of Alberta	120	110	58	-	awaiting approval for Audiology
British Columbia	University of British Columbia	48	80	30	12	SLP increasing to 36 in 2016
Saskatchewan	University of Saskatchewan	-	40	-	-	
Manitoba	University of Manitoba	50	50	-	-	
Ontario	Western University	57	55	33	19	SLP increasing to 36 in 2016
	McMaster University	65	70	-	-	SLP program approved
	University of Toronto	89	85	50	-	
	Queen's University	74	73	25	-	
	University of Ottawa	36	36	66	10	French SLP/ Audiology
Quebec	Laurentian University	-	-	10	-	French SLP
	Université de Montreal	120	115	-	19	French SLP/ Audiology
	McGill University	75	61	28	-	
	Université de Sherbrooke	55	42	-	-	
	Université Laval	95	100	50	-	French SLP
	Université du Quebec à Trois-Rivières	34	-	20	-	French SLP
Nova Scotia	Dalhousie University	66	57	25	13	
Total, Students at Canadian Institutions		984	974	395	73	
<i>Sources:</i>						
<i>OT information: Association of Canadian Occupational Therapy University Programs (ACOTUP), December 2015</i>						
<i>PT information: June 2015 reports</i>						
<i>SLP information: May 2015 report from Canadian Council of University Programs in Communication Sciences & Disorders (CCUP-CSD)</i>						

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OVERVIEW

The basic “building block” for physically organizing facilities projects is the FUNCTIONAL COMPONENT. A functional component can be defined as a grouping of activities and assigned spaces which are physically related by their common mission to satisfy a specific group of functions or operations. A functional component may or may not be synonymous with a department, since the term “department” refers to an administrative organizational structure and not a physical planning structure.

Information for each functional component is presented under the following headings:

FUNCTIONAL DESCRIPTION provides information on the general services or activities of the component and the primary operational concepts or systems which support the functional activity or component.

WORKLOAD – EXISTING AND PROJECTED ACTIVITY summarizes existing and projected workload in appropriate units. This information is used to estimate the space requirements of the component. Not all components have quantifiable workloads.

STAFFING & OCCUPANCY ESTIMATES summarizes future estimated staffing in terms of Full Time Equivalents (FTEs) where relevant, as well as total headcount and maximum occupancy staffing.

DESIGN CRITERIA presents information as follows:

External Relationships indicates the priorities of the component for its location relative to other components.

“Direct access by internal circulation” refers to components which are horizontally contiguous and linked internally. This form of access avoids movement through the general circulation system of the facility.

“Direct access by general circulation” refers to components linked by a minimal amount of horizontal and/or vertical general circulation.

“Convenient access by general circulation” refers to components linked by substantial horizontal and/or vertical general circulation.

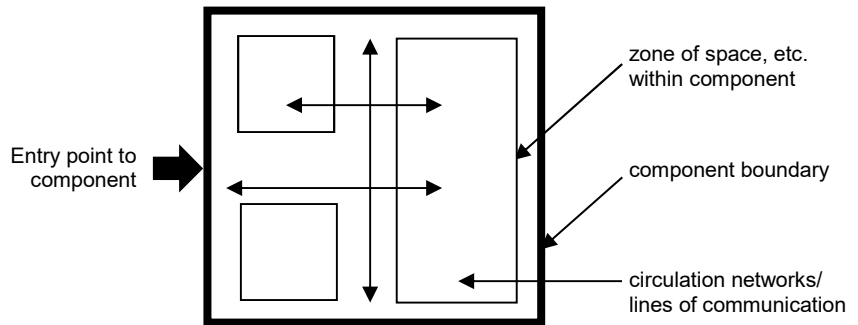
Internal Relationships/Concepts indicates basic criteria and concepts for the organization or environmental design of space (i.e. zoning, flexibility, segregation, environmental ambience, privacy, sound attenuation, safety features, etc.). It also includes a conceptual diagram showing organizational principles to be pursued in the design of the component.

The content of the diagrams is generally reflective of the headings used in the narrative and in the space requirements lists referring to ‘zones’ of space, groups of rooms and in some

cases, individual rooms for which important internal relationships need to be emphasized. In general, thin lines terminating in arrows are used to indicate principal circulation networks or lines of communication between zones of space, groups of rooms or individual rooms. Continuous/unbroken bold lines forming rectangles typically indicate zones or rooms.

Example:

Diagram 1: Example of Internal Relationship Diagram



Space Requirements are tabulated to indicate the number of rooms or spaces (units), the net/assignable square meters per unit (nsm/unit), the total assignable square meters for each room or space (nsm) and explanatory or supplementary remarks (Remarks). Indented line items indicate a close adjacency with the preceding line item.

At the end of each space list the total net space is multiplied by an appropriate 'factor' to produce a component gross square meters (CGSM) which includes an allowance for partitions, circulation corridors and small service ducts. CGSM is rounded to the nearest 5 square meters.

FUNCTIONAL DESCRIPTION**INTERDISCIPLINARY CLINIC**

Experiential learning has always been a significant component of health professional education. Clinical fieldwork, practicums and placements are required and a key learning context for students in rehabilitation medicine professions. As frontline care has evolved, interprofessional (IP) collaborative teams have become an essential care model for most patient populations. Educational accreditation bodies and national and global health care organizations promote and expect health professional students and clinicians to have a high level of competency in IP collaborative practice.

To offset some of the general practicum needs, several Canadian rehabilitation professional programs have developed student clinical services. These services are offered at in-house Faculty clinics or affiliated clinical sites. They have added needed clinical placements and concurrently, can increase the overall patient workload generated by one supervising therapist. These outputs are beneficial for the student learners, the patients who can attend these clinics and for the University.

Source: "Proposal for a Faculty of Rehabilitation Medicine Student Rehabilitation Clinic, 2018"

Service

The development of a new interdisciplinary clinic would provide an opportunity to consolidate and/or absorb current clinics. This would include:

- PT Student Clinic
- Corbett Clinic
- Occupational Performance Analysis Unit (OPAU)

CHEEP, ISTAR and an Audiology Clinic (proposed new program) would also benefit from being consolidated with the interdisciplinary clinic or at the very least, be co-located with it, benefitting from shared resources.

Corbett Hall Physical Therapy Student Clinic (PTSC)

The PTSC is a non-profit clinic operated within the Department of Physical Therapy. Physical therapy students take primary responsibility for providing assessment or rehabilitation under the supervision of licensed physical therapists. This interdisciplinary clinic may also provide services from students in other disciplines such as physical therapy assistant or pharmacy.

Source: <https://www.ualberta.ca/physical-therapy/corbett-hall-student-physical-therapy-clinic>

The current PTSC is located on the lower level of Corbett Hall. The space has been configured to accommodate plinths and open exam areas. One significant limitation is the lack of walking space, so the main corridor is often used for this activity.

Corbett Hall Speech-Language Clinic

The Corbett Clinic is operated within the Faculty of Rehabilitation Medicine. Students in the Master of Speech-Language Pathology program provide assessment and treatment for clients of all ages under the supervision of staff in the Department of Communication Sciences and Disorders.

Source: <https://www.ualberta.ca/communications-sciences-and-disorders/clinical-component>

Corbett Clinic is located on Level 1 and Level 2 of Corbett Hall. As all CSD students must complete two (2) in-house placements through Corbett Clinic, it is undersized for a cohort. Additional space is leased at College Plaza Level 6 across the street from UA North Campus. The Clinic is comprised of a number of small exam rooms with adjacent observation. Some rooms are very small and do not properly accommodate children, who also have parents or guardians attend with them. There is also a need for larger treatment rooms to accommodate group sessions with adults and children.

Occupational Performance Analysis Unit (OPAU)

OPAU's clinical practice encompasses four general areas: functional capacities and cost of future care (medical-legal) evaluations; interdisciplinary rehabilitation services delivered on-site at the Kehewin First Nation; interdisciplinary rehabilitation for Veterans of the Canadian Armed Forces; physical therapy for members of the public (i.e. sports injuries, motor vehicle accident injuries, post-surgical, etc.). Occupational therapy students at the Faculty of Rehabilitation Medicine utilize the OPAU lab to learn how to administer and interpret common work evaluation instruments. OPAU also makes its professional expertise, library, equipment and clinical data available to students who are pursuing projects of research in the areas of functional evaluation, disability management, First Nations health, Fetal Alcohol Spectrum Disorder and rehabilitation of Canadian Forces Veterans.

Source: <https://www.ualberta.ca/rehabilitation/about-us/student-resources/student-clinics-and-programs/occupational-performance-analysis-unit>

This clinic is located on the lower level of Corbett Hall. The space includes a clinical space in which to meet and assess clients, storage for equipment and materials and an office.

CHEEP

The Corbett Hall Early Education Program (CHEEP) provides exceptional preschool programming to children, aged two and a half to five years, diagnosed with developmental delays. Typically developing children (called community children) are included in the classroom in a reverse integration model. Community children provide peer modelling and benefit from exposure to a language rich preschool setting with a high adult-child ratio.

Source: <https://www.ualberta.ca/communications-sciences-and-disorders/corbett-hall-early-education-program>

Currently located on Level 2, this program is challenged by space constraints in Corbett Hall. Since preschool-aged children are participating in this program it may not be ideal to consolidate with the interdisciplinary clinic however there are some spaces/resources that could be shared, such as an Activity Room.

The growth of space for this clinic is provided to address the current space limitations and does not reflect a growth in the program. Those space increases include:

- appropriately number and size of administrative space (workstations)
- larger classroom
- larger observation room for students/parents
- larger playroom/quiet activity space
- a new toy storage/cleaning room
- a new dedicated children's washroom (accessible to the classroom).

ISTAR

The Institute for Stuttering Treatment and Research (ISTAR) is a self-funded institute of the University of Alberta's FRM. It offers specialized treatment to children, teens and adults who stutter. In addition, they conduct research into stuttering, offer advanced professional training of speech-language pathology students and clinicians and promote public awareness of stuttering and its treatment.

Source: <https://www.ualberta.ca/stuttering-speech-therapy>

ISTAR is located in leased space on Level 15 of College Plaza in Edmonton and is adequately accommodated in its current location. Growth plans include a larger group room and lab equipment/file storage. This is another clinic that could benefit from shared clinic resources, such as group therapy rooms and exam /treatment rooms with observation.

Clinical/Practicum Education

The Faculty has envisioned an interdisciplinary clinic so that students can learn as they would practice once they are out in the field – as members of an interdisciplinary team. FRM has envisioned a clinic that has flexibility to be used by all disciplines and can be used for clinical education. A summary of the clinical education requirements, by department, are outlined below.

CSD: Clinical placements are taken at approved clinical facilities under the supervision of qualified professional staff. The first experience is in-house at Corbett Clinic during spring/summer term of the first year. Students also complete a second introductory placement in-house at Corbett Clinic or with a designated community partner. The addition of the Audiology Program will increase the needs for clinical education and placements.

OT: Clinical Education is the practical application of academic coursework in a real-life clinical setting. Under the mentorship and guidance of a licensed occupational therapist, occupational therapy students are able to put into practice the knowledge, skills and behaviours learned in the classroom. Students in the occupational therapy program participate in a minimum of 28 weeks of clinical education experiences in a wide range of practice settings and content areas including (but not limited to) rehabilitation facilities, schools, private clinics, home care, long term care centres and acute care hospitals.

PT: Clinical Education is the practical application of academic coursework in a real-life clinical setting. Under the mentorship and guidance of a

licensed physical therapist, physical therapy students are able to put into practice the knowledge, skills and behaviours learned in the classroom. Students in the physical therapy program participate in 31 weeks of clinical education experiences in a wide range of practice settings and content areas including private musculoskeletal practices, rehabilitation facilities and acute care hospitals. Over the 28-month period, and by integrating the academic and clinical components of the MSc PT program, students begin the professional socialization and learn what it means to be a physical therapist.

Audiology (Proposed New Program)

There is a planned expansion for CSD to include an Audiology program. The program has been developed and has received approval through the UA Board of Governors however is still pending approval from the Government of Alberta, Advanced Education.

Part of the program would include the need for clinic space and would benefit from being integrated within the Interdisciplinary Clinic. In addition to sharing the use of exam/treatment/viewing rooms, there would be a specific need to include:

- sound booths (3)
- hearing aid analysis room
- ENG Room
- office for a Clinical Audiologist

Research

An interdisciplinary clinic will be a hub of clinical research. A living lab of integrated knowledge translation – where patients, students, clinicians and researchers are all involved in the generation and dissemination of new knowledge. Researchers affiliated with the clinic recruit participants through the clinic and have a place to discuss research with participant groups. Clinical students work with research graduate students–reinforcing the concepts and importance of “every day” evidence-based practice.

The current FRM clinical services offer an excellent venue for clinically based health research but also for research about student learning and innovations in clinical services administration and delivery. To date the FRM clinics have done some evaluation of the student learning experience and have participated in a number of research protocols for FRM and external researchers. The clinics could expand the use of innovative communication and treatment technologies. For example, students in the FRM clinics have already used novel walking technologies (exoskeleton) that were concurrently studied in one of the FRM labs. ISTAR’s use of tele-rehabilitation could be applied to other patient populations. The opportunity for direct knowledge translation from the research to the clinical setting is excellent.

Clinical/Practicum

The patient populations seen within the FRM clinical services range from pediatric preschoolers with language delay to seniors who have balance issues. For some clinical services, the patients are matched to the specific learning needs of the students while the PTSC, CHEEP, OPAU and ISTAR operate on either referral or self-referral/direct access by patients. Many of the current FRM clinical services involve care for patients who are living in the community and do not have easy access to

FUNCTIONAL PROGRAM

rehabilitation. They may no longer qualify for publicly funded programs and/or have no funding for private care. The FRM clinical services, particularly those lead by the students offer a perfect match of free or minimal fee care for these patient populations.

The FRM clinical services that involve students can contribute needed services and have demonstrated steady growth. As an example, the PTSC 2018 patient/visits and student placement data is included here to illustrate current volume for 1 of the FRM clinics:

- 668 new patients
- 1066 total patients
- 8169 total visits
- 46 Physical Therapy and 3 Physical Therapy Assistant student placements (total of 230 weeks)

Note: the total PTSC revenue was approximately \$82,000 for 2018 even with very low fees of \$10 per visit on average.

STAFFING & OCCUPANCY ESTIMATES

Position Type	Current		Future		Total Projected 2022/23	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
PTSC						
PT	1.20	2			1.20	2
Admin Assistant	0.50	1			0.50	1
Student PT	7.00	7			7.00	7
Corbett Clinic						
SLP	3.63	4			3.63	4
Admin Assistant	1.86	2			1.86	2
OPAU						
OT	0.90	1			0.90	1
PT	1.00	1			1.00	1
Admin Manager	0.50	1			0.50	1
CHEEP						
Licensed Teacher	1.00	1			1.00	1
SLP	1.00	1			1.00	1
Rehab Assistant	1.00	1			1.00	1
OT	0.20	1			0.20	1
PT	0.20	1			0.20	1
ISTAR (Edmonton)						
Clinical Director	1.00	1			1.00	1
SLP	4.00	4			4.00	4
Admin Staff	1.80	2			1.80	2
SUBTOTAL	26.79	31	0.00	0	26.79	31
Audiology (proposed)						
Clinical Audiologist			1.00	1	1.00	1
SUBTOTAL	0.00	0	1.00	1	1.00	1
TOTAL	26.79	31	1.00	1	27.79	32

Table 4: Interdisciplinary Clinic Staffing & Occupancy Estimates

DESIGN

CRITERIA

External Relationships

1. Provide direct access by general circulation to a ground floor main entry for the movement of clinic subjects/patients.
2. Provide convenient access by general circulation to the clinic and research spaces for the movement of staff and students.
3. Provide convenient access by general circulation to the clinic and teaching spaces for the movement of staff and students.
4. Provide convenient access by general circulation to the clinic and the Administrative Centre (Corbett Hall) for the movement of staff and students.

Internal Relationships/Concepts

The Interdisciplinary Clinic is intended to accommodate the following key spaces:

Administrative Space:

- common entry
- reception desk/station
- waiting area, including children's space
- change rooms/washrooms
- lockers
- Offices & workstations
- Work room

Clinic Space:

- open treatment area with plinths, chairs and exercise equipment
- walking space
- equipment space
- activity room
- interdisciplinary charting areas
- private exam/treatment rooms
- observation rooms
- specialty rooms dedicated for particular disciplines
- group therapy rooms
- kitchen area

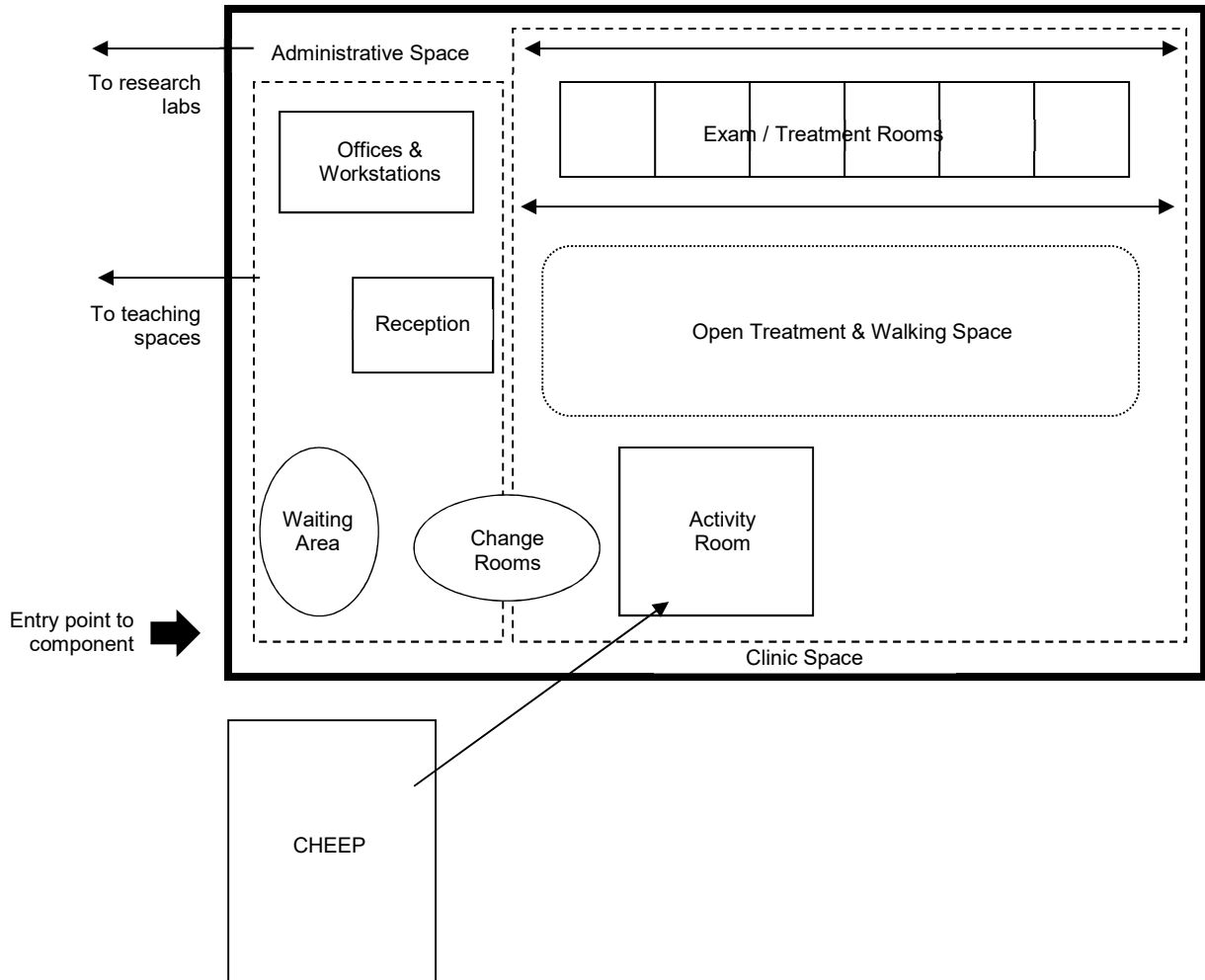
Audiology Space:

- dedicated space, such as sound booths and hearing aid analysis
- office space

Functional Relationship Diagram

The spatial organization of this component will be generally as shown in the diagram below.

Diagram 2: Interdisciplinary Clinic Functional Relationship Diagram



Space Requirements

Table 5: Interdisciplinary Clinic Space List

Space Use/Function	Space Category		Staff Name	Current Area			Functional Program Area			Comments/Space Attributes
	Position Type	Functional Unit		Bldg	Room No.	Area (nsm)	Space Standard	Unit/Qty.	Area (nsm)	
Administrative Space:										
Reception		FRM		CH	2-78	70.5			15.0	two workstations, desk, file storage
Waiting Area		FRM		CP	6-04				50.0	seating for 20 people; includes separate children's area
Change Room		FRM					10.0	2	20.0	women/men; 2 cubicles/rooms
Washroom		FRM		CH	2-76 2-74	8.3	6.0	4	24.0	women, men, gender inclusive, family (child-friendly)
Lockers		FRM					0.5	40	20.0	space to accommodate 40 half-height lockers adjacent to reception and washrooms
Office	Coordinator	FRM					9.0	1	9.0	
Office	Clinical Educator	FRM		CP	604E	21.1	12.0	1	12.0	
Office	Students	FRM		CH	1-25	14.5	3.0	6	18.0	open workstations, touch-down
Workstation	Admin. Assistant	FRM					6.0	1	6.0	
Work Room		FRM							12.0	photocopies, office supplies, files
Subtotal, Administrative Space						114.4			186.0	
Clinic Space:										
Open Exam Area		FRM		CH	1-26 1-30 1-78	188.8			120.0	total of 20 plinths, with privacy curtains (12 regular size; 8 oversized)
Walking Space		FRM							60.0	contiguous walking space 40-60m long
Equipment Space		FRM							70.0	treadmills, weights, bikes, etc.
Activity Room		FRM		CH	1-88 1-88A 1-86	73.4			80.0	open area for activity/exercise based seminars
Splinting Area		OT							12.0	next to open plinth area
Garment Fitting Room		OT							15.0	
Kitchen		FRM		CP	604D	10.2			24.0	for therapy, cooking classes
Charting Area		FRM					40.0	2	80.0	confidential interdisciplinary work area near open plinths (8-10)
Hand Hygiene Station		FRM					2.0	2	4.0	
Exam/treatment		FRM		CH	1-103 2-77 2-81 2-85 2-87 2-95 604A 604G 604J 604L	149.9	12.0	18	216.0	two (2) with telehealth; four (4) with sinks
Viewing Rooms		FRM		CH	1-101 2-83 2-89 2-97 604B 604F 604H 604K	66.6	12.0	6	72.0	
Control/Server Room		FRM					6.0	1	6.0	for all viewing rooms
Meeting/Seminar		FRM					24.0	4	96.0	could be used for group therapy
Equipment Storage		CSD/OT/PT		CP CH	604C 1-25A 1-26A 1-36 1-36A 1-78A 1-102 1-102A 1-104	136.3	30.0	3	90.0	
Clean Utility Room		FRM							12.0	
Soiled Utility Room		FRM							9.0	
Housekeeping		FRM							7.0	
Subtotal, Clinic Space						625.2			973.0	

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Table 5: Interdisciplinary Clinic Space List (continued)

Space Use/Function	Position Type	Functional Unit	Staff Name	Bldg	Room No.	Area (nsm)	Space Standard	Unit/Qty.	Area (nsm)	Comments/Space Attributes
Audiology:										
Office	Clinical Audiologist	CSD						12.0	1	12.0
Sound Suite		CSD						24.0	3	72.0 <i>3 sound booths; near hand hygiene sink</i>
Hand Hygiene Station		FRM						2.0	1	2.0
ENG Room		CSD								12.0 <i>ENG=Electronystagmography</i>
Hearing Aid Analysis Room		CSD								12.0
Subtotal, Audiology						0.0				110.0
Total, Interdisciplinary Clinic						739.6				1,269.0

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FUNCTIONAL PROGRAM

FUNCTIONAL DESCRIPTION
INSTRUCTIONAL SPACE
Service

All programs within FRM involve course-based learning and clinical education, through clinic placements. Although it varies between disciplines, there is a requirement for classroom-based learning and then more hands-on learning for labs. In addition, there is significant group work and a need to accommodate students in small break out spaces near or adjacent a classroom or lecture theatre.

Education
CSD:

1. MSc SLP Course-Based Option: *The course-based option is a 2-year continuous program with a break in August between Year 1 and Year 2. There are both day and evening courses scheduled in Year 1 and first term of Year 2, along with two introductory in-house placements. The remainder of Year 2 is spent at external placement sites. The program integrates academic and clinical skills needed for practice in speech-language pathology. It involves a required course of study, a minimum of 350 hours of clinical experience and a major scholarly project (84 credits total).*
2. MSc SLP Thesis-Based Option: *During the first term of study, students in the MSc SLP program may choose the optional thesis track. Students taking the thesis option will complete the same coursework and clinical placements as students in the course-based option, with the exception of CSD 900, the course associated with the research project. Instead of enrolling in CSD 900, students will enroll in Thesis research (THES 906). Thesis track students also complete an additional course in advanced statistics.*

Source: <https://www.ualberta.ca/communications-sciences-and-disorders/msc-in-speech-language-pathology>

3. Combined MSc/PhD Program: *The combined MSc/PhD program allows a select group of highly motivated students to complete the MSc in speech-language pathology and the PhD in rehabilitation sciences within a single integrated program of study. Students may indicate their interest in the combined program at the time they apply to the MSc-SLP program, or during the first semester of the MSc-SLP program. Students in the combined program will complete all of the academic coursework and clinical placements for the MSc-SLP program, as well as all of the coursework and research requirements for the PhD-RS program. Rather than completing the two-degree programs sequentially, coursework, clinical placements, and research requirements will be integrated into a single 5-yr plan of study. Graduates will be eligible to apply for registration to practice as a speech-language pathologist and will also be prepared for entry level academic and research careers.*

Source: <https://www.ualberta.ca/communications-sciences-and-disorders/msc-in-speech-language-pathology/combinemsc-phdprogram>

4. Audiology: *The Master of Science in Audiology is proposed as a two-year program parallel to the existing MSc SLP program. The proposed program will have an intake of 12 students per year (24 students total in year 1 and 2). The Msc Aud, an entry-level professional program, will include an educational experience that*

integrates a scientific base with concepts and practical applications in caring for patients and also specific procedure-based teaching that is discipline specific. The program will include academic courses as well as internal and external clinical practica. Similar to the MSc SLP program both course-based (90 credits) and thesis-based (90 credits + thesis) options will be offered. The Msc Aud program will prepare students for the National certification examination and for licensure with a provincial regulatory body.

OT:

1. MSc in Occupational Therapy: *The Master of Science in Occupational Therapy program is designed to address practice and theoretical issues within a broad range of settings. It is a year-round, full-time program (80 credits total) and can be completed within 26 months of study in either Edmonton or Calgary.*

PT:

1. MSc in Physical Therapy: *The Master of Science in Physical Therapy program is an accredited, professional, entry-level physical therapy program with approximately 110 students admitted per year to 3 campuses (Edmonton, Calgary and Camrose). The MSc PT integrates academic courses and clinical practicums to prepare students for physical therapy practice. The program is year-round, full-time and can be completed in 28 months (96 credits total).*

Source: <https://www.ualberta.ca/physical-therapy/msc-in-physical-therapy>

2. Combined MScPT/PhD: *Beginning with admissions for 2018, the Department of Physical Therapy will offer a combined MScPT/PhD degree. The combined MScPT/PhD program brings together two programs to achieve efficiencies that help exceptional students seamlessly complete combined clinical and research studies. Each year, two seats will be held for student's admissions into the combined MScPT/PhD program. The program is expected to take between 5-6 years to complete.*

Source: <https://www.ualberta.ca/physical-therapy/msc-in-physical-therapy/combined-mscpt-phd>

3. The Certificate in Bridging to Canadian Physical Therapy Practice: *This 12-month program, offered in a blended format, consists of five courses: 2 academic courses, 2 clinical mentorship courses and 1 clinical placement (14 credits total). Academic courses are completed partially online and partially in-person with several laboratory sessions in Edmonton. The Bridging Certificate operates in a cohort model with 1 intake per year.*

Source: <https://www.ualberta.ca/rehabilitation/professional-development/certificate-in-bridging-to-canadian-physical-therapy-practice>

Rehabilitation Science:

1. MSc in Rehabilitation Science: *The MSc in Rehabilitation Science (MScRS) program is designed for graduate students*

interested in careers in academic and non-academic health and related interdisciplinary fields. The MScRS can serve as a stepping stone on the pathway to advanced research training for students planning to pursue a PhD in Rehabilitation Science or related fields. MSc Rehabilitation Science students have backgrounds in clinical areas (e.g., physical therapy, occupational therapy, communication sciences, kinesiology, law, public health or other health-related fields). The program consists of course work (a minimum 15 credit units at the graduate level, including three mandatory courses) and a thesis (including proposal and defense of thesis research). Students also take training in ethics and scientific integrity. The Faculty of Graduate Studies and Research (FGSR) has a professional development requirement designed to help you determine your career path in both academic and non-academic settings.

Source: <https://www.ualberta.ca/rehabilitation/programs/msc-in-rehabilitation-science>

2. *PhD in Rehabilitation Science: The PhD in Rehabilitation Science (PhD RS) program provides training for future rehabilitation scientists who seek to discover, integrate, and apply knowledge to improve the health and wellness of people with health conditions and disabilities. The program consists of course work (a minimum 18 credit units at the graduate level, including four mandatory courses), candidacy examination, and thesis (including proposal and defense of thesis research). Students also take training in ethics and scientific integrity. The Faculty of Graduate Studies and Research (FGSR) has a professional development requirement designed to help you determine your career path, in both academic and non-academic settings.*

Source: <https://www.ualberta.ca/rehabilitation/programs/phd-in-rehabilitation-science>

Clinical/Practicum Education

Clinical Education is a part of learning within all disciplines of FRM. Each program requires the students to receive training within the clinical setting. A summary of the clinical education requirements, by department, are outlined within the Interdisciplinary Clinic overview.

Table 6: Clinical/Practicum Education Programs

Program	Year 1												Remarks	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
CSD:														
MSc SLP (course-based)														
MSc SLP (thesis-based)														
MSc/PhD (combined SLP)														5 year +
MSc Aud (course-based)														
MSc Aud (thesis-based)														
OT:														
MSc OT														
PT:														
MSc PT														
MSc/PhD (combined PT)														5 year +
	Year 2													
CSD:														
MSc SLP (course-based)														
MSc SLP (thesis-based)														
MSc/PhD (combined SLP)														5 year +
MSc Aud (course-based)														
MSc Aud (thesis-based)														
OT:														
MSc OT														
PT:														
MSc PT														
MSc/PhD (combined PT)														5 year +
	Year 3													
CSD:														
MSc SLP (course-based)														
MSc SLP (thesis-based)														
MSc/PhD (combined SLP)														5 year +
MSc Aud (course-based)														
MSc Aud (thesis-based)														
OT:														
MSc OT														
PT:														
MSc PT														
MSc/PhD (combined PT)														5 year +
Legend:														

FUNCTIONAL PROGRAM

OCCUPANCY ESTIMATES
Table 7: Instructional Occupancy Estimates

Programs	Annual Admissions 2016/17	Total current Headcount 2016/17	Future Admissions 2022/23	Total Projected Headcount 2022/2023
CSD:				
MScSLP (course-based)	50	168	50	150
MScSLP (thesis-based)	5	17	5	15
MSc/PhD (combined SLP)	3		3	9
MSc Audiology			12	12
OT:				
MScOT	120	360	120	360
PT:				
MScPT	105	314	99	297
MSc/PhD (combined PT)	1	1	2	6
MBA/MScPT (combined)			5	15
Rehabilitation Science:				
MSc in Rehab Science	37	32	40	40
PhD in Rehab Science	39	35	50	50
TOTAL	360	927	386	954
Table Notes:				
.1 Data provided by SADW (Statistics & Data Warehouse) and verified by the Dean's Office.				

DESIGN CRITERIA
External Relationships

1. Provide convenient access by general circulation to the classrooms and teaching labs for the movement of staff and students.
2. Provide direct access by general circulation to the classrooms and teaching labs for the storage of teaching materials.
3. Provide convenient access by general circulation between the classrooms/teaching labs and IT services (RMTG) for support of technology systems, including Lifesize.
4. Provide direct access by internet to the classrooms and teaching labs between the satellite sites (Corbett Hall, Calgary Campus, Augustana Campus).
5. Provide convenient access by general circulation from the classrooms to small group rooms for the movement of staff and students.

Internal Relationships/Concepts Current Teaching Practices

All programs teach in lecture, seminar (group-based activities), and laboratory settings (i.e., practice of clinical skills). Generally, due to the nature of graduate programming, there are less lecture and more seminar-type classes, involving group learning activities during and in between classes.

Current Technology and Materials Needs: Implications and Challenges:

- All programs benefit from the ability to easily connect via Lifesize™ to Calgary and Camrose. For both PT and OT, the connections from Edmonton to Calgary (and for PT, Camrose as well) are essential to the functioning of the programs. The Lifesize™ connections also allow Rehabilitation Science students to connect easily with their supervisors in Edmonton, and to connect in for course work.
- Depending on the discipline, equipment varies. For PT and OT some of the equipment needed is quite large (plinths, wheelchairs, walkers) and is difficult to store (and/or to transport). For CSD, portable but expensive/sensitive equipment would need to be transported back and forth, if labs were scheduled in other buildings on campus.
- Computers/Laptops are routinely used by students in classes and for the majority of examinations. Classroom desks currently are designed for paper note taking not laptops.
- Breakout space for seminars and group work is very limited so students tend to sit on floor in hallways, etc.
- Many labs have been retrofitted which is not adequate (i.e. 1-10 needs plugs in the floor)
- Space and furniture are outdated (i.e. CSD lab computer stations required upgrading)

Lectures/Classroom Teaching:

In general, the current configuration of the classrooms and lecture theatres are not appropriate for the type of teaching that is pursued today for FRM programs. It is more important that the teaching spaces allow for flexible layouts to meet the needs of each discipline. This could require demonstrations with equipment, people and groups.

In the past, the classrooms and lecture theatres have been fixed with audio visual equipment (Lifesize) in order to connect to the Satellite facilities in Augustana and Calgary campuses. As this technology is evolving, it is possible to consider booking spaces within other facilities, so long as the connection to the Satellites is maintained.

Other details and considerations include:

- Tiered lecture theatres are not the most flexible layout, but it is important to have spaces that can accommodate each cohort.
- The current classrooms/lecture theatres are too small. Consider the size of the lecture theatres and even consider alternative furniture arrangements to help facilitate group work/break-out.

- Consider technology and connectivity to the Lifesize Audio Visual system and ensure there is better compatibility so there is more flexibility in booking lecture theatre spaces throughout the Campus. This would be possible if other rooms on Campus were made compatible with the Lifesize system.
- The Lifesize system requires adequate space for set-up and to ensure that the speaker(s)/presenter(s) are seen properly at both sites. This often requires additional space to accommodate the appropriate sightlines.
- Other details to consider for the classroom spaces include:
 - Acoustics
 - Ample space for teaching demonstrations
 - Infrastructure that allows for charging of student computers and tablets
 - Comfortable and flexible furniture
 - Flat floor preferred

Lab Teaching:

- For PT and OT it is ideal to have a lab that can accommodate 100 students as a larger classroom group but typically use the space as a lab for 40-50 students, by subdividing the larger room when necessary.
- Plinth space is important for OT and PT teaching labs, although PT is a primary user of the plinth set-up. Consider one plinth room to be shared. Then provide more flexible teaching lab spaces for flexible teaching for all disciplines.
- Requirement for clear walking space in addition to plinth space.
- Adequate space for storage.
- OT has a space in which Virtual Reality (VR) is being used. It is presumed that there will be an increase in this type of space being required for teaching.
- CSD Department has a specialized Speech and Hearing Science Teaching Lab with 15 fully equipment workstations containing computers with specialized hardware and software for analyzing speech and voice production, all connected through a network with master computer and projector. The Teaching Lab also has a large double-walled sound booth. This teaching lab will be used by both SLP and Audiology students.
- Additional Teaching Lab space will be required for the Audiology program.

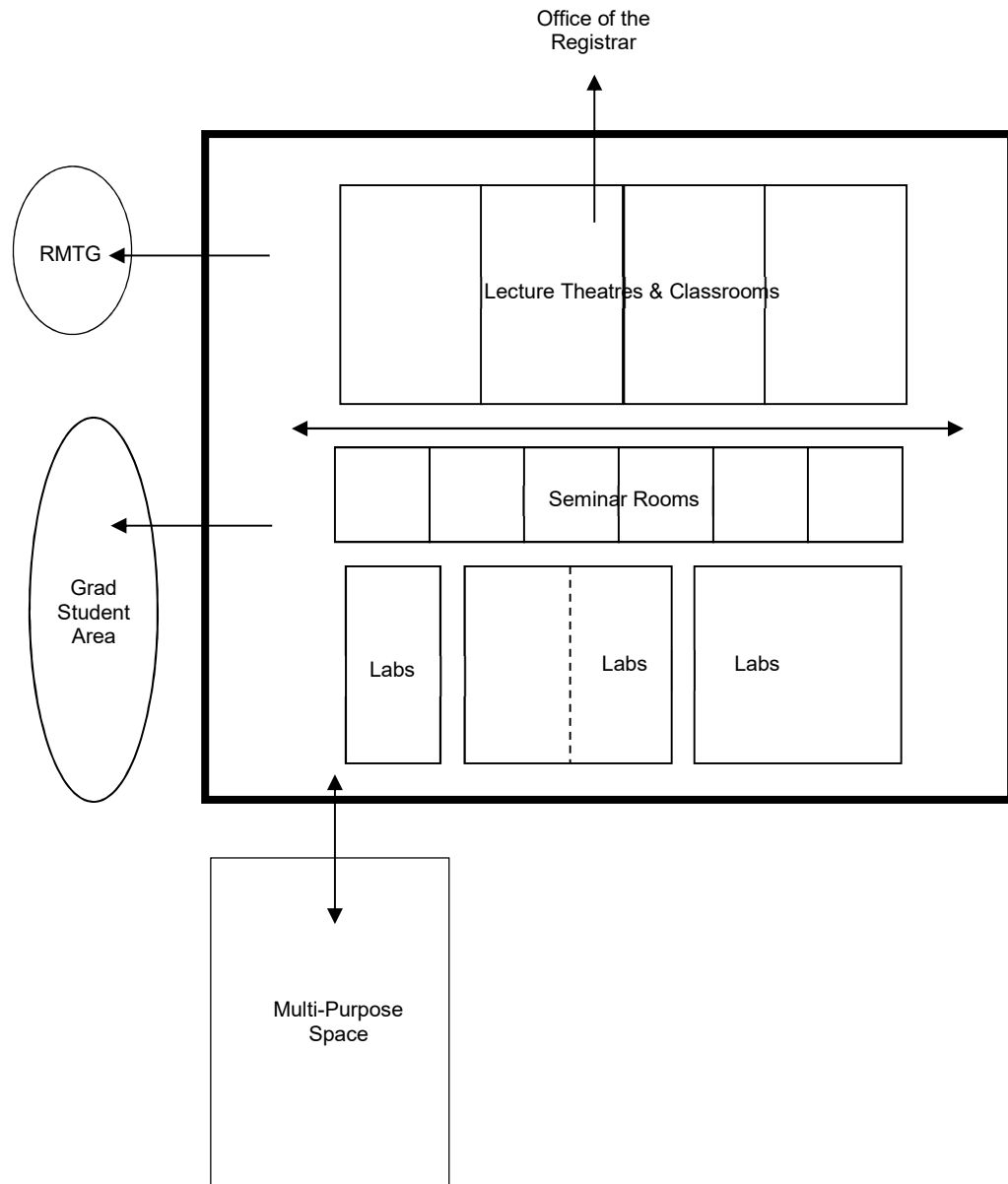
Graduate Studies:

- Requirement for smaller classrooms (12-15 people) or seminar rooms.
- Dedicated space that is assigned to graduate students, who currently occupy space in their Supervisor's labs.

Functional Relationship Diagram

The spatial organization of this component will be generally as shown in the diagram below.

Diagram 3: Instructional Space Functional Relationship Diagram



FUNCTIONAL PROGRAM
Space Requirements
Table 8: Instructional Space List

Space Use/Function	Space Category		Staff Name	Current Area			Functional Program Area			Comments/Space Attributes	
	Position Type	Functional Unit		Bldg	Room No.	Area (nsm)	Space Standard	Unit/Qty.	Area (nsm)		
Lecture Theatre		PT/CSD		CH	2-07	101.6			130.0	82 seats; centrally booked through the Office of the Registrar	
Lecture Theatre		PT/OT		CH	2-41	109.7			160.0	105 seats; centrally booked through the Office of the Registrar	
Lecture Theatre		OT		CH	2-39	221.4			330.0	220 seats; centrally booked through the Office of the Registrar	
Lecture Theatre		CSD		CH	3-26	87.5			100.0	66 seats; centrally booked through the Office of the Registrar	
Classroom		FRM						30.0	1	30.0	Audiology Program, 12-15 seats
Seminar Room		FRM		CH	2-15	25.0		18.0	2	36.0	6-8 seats
Seminar Room		FRM		CH	2-22	22.2		24.0	2	48.0	8-10 seats
Seminar Room		FRM		CSB	6-120 6-126B	63.0		30.0	5	150.0	12-14 seats
Seminar Room		FRM						36.0	1	36.0	18-20 seats
Teaching Lab		CSD		CH	1-105	86.5				250.0	speech, language, hearing teaching lab
Sound Booth		CSD		CH	1-108B	9.8		10.0	2	20.0	
Teaching Lab		OT		CH	1-80	41.4				40.0	share with OPAU
Teaching Lab		OT		CH	1-84	42.1		40.0	2	80.0	
Teaching Lab		OT		CH	3-01	103.4				120.0	divisible; 100 students when opened up with 3-07
Teaching Lab		OT		CH	3-07	151.6				180.0	divisible; 100 students when opened up with 3-01
Teaching Lab		OT		CH	3-21	72.3				120.0	ADL suite
Teaching Lab		PT		CH	1-10	267.8				380.0	Plinth Set-up (40); change room adjacent; exercise equipment and walking space
Teaching Lab		OT		CH	2-75	79.8				80.0	VR Room; 25-40 students max.
Storage		PT		CH	1-10A 1-10B 1-10C 1-10D 1-10E 1-10F	89.9				90.0	
Student Practice Lab		FRM		CH	1-58	67.0				75.0	
Student Study Area		FRM		CH	2-26 2-29	154.9		87.5	2	175.0	
Multi-Use Space		FRM		CH	2-44	299.0				350.0	divisible
Storage		FRM		CH	2-44A	51.6				50.0	storage of tables, chairs, etc.
Total, Instructional Space						2,147.5				3,030.0	

FUNCTIONAL DESCRIPTION

RESEARCH LABORATORIES

This component is comprised of:

- FRM wet bench research laboratories
- iRSM, labs only
- Rehab Robotics

Research

Wet Bench Research - FRM

The goal of research at the Faculty of Rehabilitation Medicine is to improve the lives of individuals living with disabilities through prevention and evidence-based treatment strategies. Researchers work collaboratively in a variety of research initiatives to translate their findings into solutions for the health, education and policy sectors.

Source: <https://www.ualberta.ca/rehabilitation/research>

For FRM, nearly every Professor is conducting research in his or her area of expertise. In addition, there is also research undertaken as part of the Institutes and Centres. Five (5) current Faculty members have been identified as high service wet lab researchers that require wet laboratory space. Within the planning horizon, it is anticipated that there will be growth of one researcher in Audiology (CSD) and another within the Office of the Dean.

Many of those researchers have been relocated to buildings outside of Corbett Hall – a building that does not accommodate wet labs. This also means that there is no means of accommodating any future growth for wet lab space in Corbett Hall. FRM research labs have been allocated space in buildings that are assigned to other Faculties and there are no formal space agreements or processes being followed, besides ‘good will’ through existing research collaborations. There is concern that this is not sustainable and use of valuable research lab space could be lost, should those Faculties have other pressing space demands.

Current space is accommodated within Level 5 of HMRC and Level 1 and 3 Corbett Hall.

Current research focuses on rodent models (rats and mice) of spinal cord injury, investigating the impact of injury and recovery on sensory-motor function and mental health. Rehabilitative training and pharmacological treatments are combined to overcome lesion induced deficits and to study mechanisms of functional and behavioral recovery. Cell cultures are also utilized in screening the viability of new treatments to promote neural repair.

Vivarium

The work that is undertaken is varied in scope but does involve the use of animals to support the research. This requires vivarium support, of which FRM is currently supported by Health Sciences Laboratory Animal Services (HSLAS) either in dedicated or satellite facilities (there is one in Corbett Hall and another in HMRC). The scope in which HSLAS is responsible to support FRM includes the following.

Corbett Hall site:

- delivering food, water and bedding (twice per week)

FUNCTIONAL PROGRAM

- exchanging dirty cages with clean cages (twice per week)
- laundry services (twice per week)
- contract services (e.g. gavage feeding) and veterinary oversight (as needed)
- provision of medications (as required)

HMRC site:

- Cage cleaning (twice per week)
- cage rack cleaning (annually)
- laundry services (every two weeks)
- veterinary oversight including provision of medications (as required)

Institute for Reconstructive Sciences in Medicine (iRSM)

The Institute for Reconstructive Sciences in Medicine (iRSM) is an internationally recognized clinic and research institute focused on medical reconstructive sciences. Established in 1993, iRSM is a joint initiative of the University of Alberta, Covenant Health and Alberta Health Services, based at the Misericordia Hospital in Edmonton, Alberta. iRSM has an interdisciplinary team providing expertise in surgery, medicine, dentistry, rehabilitation medicine, engineering and computing science for head and neck reconstructive treatments and rehabilitative care. The experts are fully integrated to provide clinical care, research, education and training in reconstructive medicine and technology.

Source: <https://www.ualberta.ca/reconstructive-medical-sciences>

Key areas of research within the wet bench research laboratories:

- Advanced technologies for surgical intervention
- Reconstructive and bio-implantable materials
- Outcomes and health care analytics
- Implantable hearing solutions

Current lab space is set up on Level 6 of CSB and in the Misericordia Hospital. There is concern that iRSM is not consolidated and that it is lacking proximity to the UA Hospital.

Rehabilitation Robotics

The Rehabilitation Robotics Group is an interdisciplinary research group focused on improving the quality of life through robotics and technology. Our research focuses on wheelchair biomechanics, new technologies to assess spinal structure and function, assistive robotics and virtual reality in rehabilitation medicine.

Source: <https://www.ualberta.ca/rehabilitation/research/rehabilitation-robotics>

The current lab space is located on Level 2 ECHA and is comprised of three primary spaces:

- A graduate student workspace for about 10 graduate students
- A conference room equipped with Lifesize videoconferencing and a hot desk used by the two academic leads when working in the lab. The conference room is used for multiple team meetings, meetings with collaborators and for videoconference meetings

when the PIs are out of town and with the Executive of the Bone and Joint SCN

- A multipurpose laboratory comprising well in excess of \$1.5M in equipment provided by various CFI and LOF Tri-Council grants. The laboratory is configured as a “sandbox” with the view to inviting collaborators from across multiple faculties to use the facilities for biomechanical studies, including very high end immersive virtual reality and clinical simulation. The laboratory is undertaking ground-breaking research relating to the management of low back pain, rehabilitation assessment of patients in remote communities using advanced tele-rehabilitation technologies and virtual reality. The motion capture systems installed in the lab are configured for large volume, high resolution measurement of a wide range of functional activities in rehabilitation. A large immersive VR Cube is installed in the space along with a wheelchair ergometer providing a unique facility to study wheelchair biomechanics for wheelchair users whose capacities range from everyday mobility to elite athletes. A wheelchair lift is installed in the laboratory to enable wheelchair users to access the VR environment.

FUNCTIONAL PROGRAM
STAFFING & OCCUPANCY ESTIMATES

A list of projected staff is based upon the number of future recruits, as outlined in the GSP. An assumption regarding the size of research team is put forward, knowing that a new recruit, depending on experience level, will likely not arrive with this size team, but could potentially grow within a five year timeline.

Table 9A: Research Staffing & Occupancy Estimates (FRM Wet Bench)

Position Type	Current		Future		Total Projected	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
FRM Wet Bench Research						
Bennett Lab:						
Principle Investigator	1.00	1			1.00	1
Lab Technician	1.00	1			1.00	1
Research Associate	1.00	2			1.00	2
Post-Doctoral Fellow			1.00	1	1.00	1
Graduate Student	3.00	3			3.00	3
Undergraduate Student	1.00	1			1.00	1
Fouad Lab:						
Principle Investigator	1.00	1			1.00	1
Lab Technician	2.00	2			2.00	2
Research Associate	0.50	1			0.50	1
Post-Doctoral Fellow			1.00	1	1.00	1
Graduate Student	3.00	3			3.00	3
Undergraduate Student	0.50	1			0.50	1
Misiaszek Lab:						
Principle Investigator	1.00	1			1.00	1
Research Associate	1.00	1			1.00	1
Post-Doctoral Fellow	1.00	1			1.00	1
Graduate Student	1.00	1	1.00	1	2.00	2
Undergraduate Student			2.00	2	2.00	2
New Recruits (FRM, OT, PT):						
Principle Investigator			3.00	3	3.00	3
Research Assistant			3.00	3	3.00	3
Post-Doctoral Fellow			6.00	6	6.00	6
Graduate Student			12.00	12	12.00	12
Undergraduate Student			6.00	6	6.00	6
Subtotal, FRM Wet Bench Research	18.00	20	35.00	35	53.00	55
New Recruit (Audiology):						
Principle Investigator			1.00	1	1.00	1
Research Assistant			1.00	1	1.00	1
Post-Doctoral Fellow			2.00	2	2.00	2
Graduate Student			4.00	4	4.00	4
Undergraduate Student			2.00	2	2.00	2
Subtotal, Audiology Research	0.00	0	10.00	10	10.00	10

Rehabilitation Robotics is broken out separately and the only represents FRM staff.

Table 9B: Research Staffing & Occupancy Estimates (Rehabilitation Robotics)

Position Type	Current		Future		Total Projected	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Rehabilitation Robotics						
Principle Investigator	3.00	3			3.00	3
Research Assistant	1.00	1			1.00	1
Post-Doctoral Fellow	2.00	2			2.00	2
Graduate Student	9.00	9			9.00	9
Undergraduate Student	13.00	13			13.00	13
Subtotal, Rehabilitation Robotics	28.00	28	0.00	0	28.00	28

The staff list of iRSM is noted within this report but not included within the overall staff growth. This count does not represent the entire staff list of iRSM but only those directly engaged in research.

In addition, it has been determined that a separate planning and programming exercise will be initiated specifically to define the space needs for iRSM in its entirety. The information contained below is for information only.

Table 9C: Research Staffing & Occupancy Estimates (iRSM)

Position Type	Current		Future		Total Projected	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
iRSM						
Principle Investigator	4.00	4			4.00	4
Research Assistant	4.00	4			4.00	4
Post-Doctoral Fellow	3.00	3			3.00	3
Engineer	1.00	1			1.00	1
Graduate Student	12.00	12			12.00	12
Undergraduate Student	10.00	10			10.00	10
Subtotal, Rehabilitation Robotics	34.00	34	0.00	0	34.00	34

DESIGN CRITERIA

External Relationships

1. Provide convenient access by general circulation between research laboratories for the movement of materials and staff.
2. Provide convenient access by general circulation to Faculty offices and Grad Student spaces for the movement of staff and students.
3. Provide all research laboratories with convenient access by dedicated circulation to vivarium facilities.
4. Provide convenient access by general circulation between research lab consultation space for access by patients (iRSM).

Internal Relationships/Concepts Laboratory Module:

For the purposes of planning, it is envisioned that laboratories could be conceived in the form of 'modules'. Based on the size of a particular research team, more than one 'module' could be assigned to a research group.

In order to accommodate a range of activities, a standard laboratory module should be developed based on the requirement for the highest technological use of the space. Specific attributes for the lab module should be carefully considered to optimize long term use of lab space.

The module should be considered a basic laboratory building block which can be modified to suit the unique functional requirements of each type of activity. The module will provide regularity and repetition in size, shape and arrangement of programmed space. The spatial configuration of the lab modules will remain constant wherever possible with modifications allowable in the lab benching and servicing in order to meet the varying requirements of the different research programs. The lab module should be based on a planning grid to allow for space to be easily reconfigured (i.e. free of closed stairwells, shafts, elevators and other building obstructions).

Ideally, the width of the module should not be less than 3.2m to allow for a choice between lab bench depths ranging from 750mm to 900mm, a range of equipment sizes, both floor and bench mounted, and the convenient movement of people and small mobile equipment along the aisles between occupied lab benches. The module should also not be too wide in order to maintain efficient use of space and to minimize the use of module floor space to 'park' equipment.

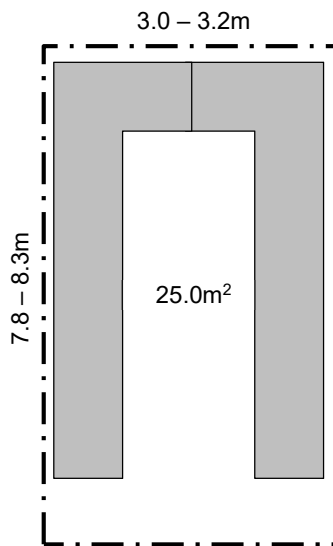


Diagram 4: Lab Module

For the purpose of the functional program, a basic lab module is defined as approximately 25ns²m (3.2m x 7.8m). This size of module can accommodate approximately four (4) research team members. Refer to the diagram.

For programming purposes, Principal Investigators requiring wet lab space will be assigned three (3) modules (75ns²m in area). In practice, actual space assignments during the building occupancy stage will vary based on the specific requirements of the PI, depending on the size of their team and funding. Within the wet lab space, PIs will have the flexibility to create small lab support spaces (microscope room, cell culture room, etc.). It is also planned there would also be common or shared lab support spaces available to more than one PI. *The module size and dimensions included herein will require testing and refinement during the design stage.*

Structural Bay:

The dimension of the structural bay, both vertical and horizontal, must be carefully evaluated with respect to the laboratory planning module, mechanical distribution and future expansion plans. Due to the importance of the lab planning module to function (considering safety and flexibility) the lab planning module should be considered as the primary building (structural) module. Other structural considerations:

- Horizontal dimension of structural by must be a multiple of the lab planning module dimension to provide for maximum flexibility and regular window placement and allow uniform points of connection for lab services with respect to the lab planning module.
- Columns must not fall within the lab planning module to prevent interference with lab layouts and cause inefficient use of valuable lab space.
- Close coordination between structural and mechanical disciplines is critical to minimize interference of piping and ventilating systems with the structural framing.

Lab Support Spaces:

There should be three levels of support space:

- Inter-laboratory support space oriented adjacent to labs, typically with direct internal circulation.
- Zoned or floor level support functions which are shared at a floor level or among a group of laboratories.
- Centralized support functions which are shared among all laboratories.

Some of the special lab support spaces could include the following:

- Equipment Rooms: space for common equipment, accessible to many researchers; in addition, to remove noise and heat from the labs.
- Controlled Temperature Rooms (cold or freezer)
- Microscope Rooms
- Cell culture Rooms
- Histology
- 3D printing, computers
- Autoclave(s)
- Faraday cage
- Sound booth
- Consult space

Circulation:

- Adequate separation of work areas from circulation areas in labs is required to allow for the delivery and maintenance of equipment and prevent disturbance of equipment.
- The potential routing or pathways for the addition or relocation of heavy/large equipment should be reviewed at the design stage.
- Doors into labs should generally be a minimum of 1.2m wide; this could be a single door or a door plus leaf. The height of doors should be a minimum of 2.1m to accommodate lab equipment.
- Doors to labs should be recessed and swing outward in the direction of egress. There should be a closers and locks.
- Main corridors in lab areas should be a minimum of 1.8m to facilitate movement of equipment and carts. The width should not be oversized, preventing the corridor from being lined with equipment and carts.

Lab Casework:

Modular lab casework provides the most flexibility for the research labs. It would be best to consider using a number of component types that are the same size so that there are some options in fitting out the lab specific to a research team without 'customizing' the lab.

Finishes and Materials:

Work surfaces, casework, floor and wall finishes should be non-porous, non-staining and resistant to corrosion by acids, reagents and other chemicals.

Biological Safety Cabinets & Fume Hoods:

Biological Safety Cabinets (BSCs) are safety devices used primarily for the containment of biohazardous materials.

Fume hoods should be used for the isolation and extraction of volatile and/or toxic fumes. It is important that these are maintained and certified routinely.

Chemicals used in labs should be held close to the point of use in vented cabinets in accordance with non-compatibility requirements. The vented cabinets should be located under fume hoods.

Animal Facilities:

Any work that involves animals at the University has a requirement for oversight. Animal Care and Use Committees (ACUC) have the delegated responsibility for reviewing and managing animal use applications and report to the University Animal Policy and Welfare Committee (UAPWC) which is a standing committee of the Vice-President Research. This oversight is in place to ensure the Institutional standards are in place to meet or exceed the Canadian Council for Animal Care (CCAC).

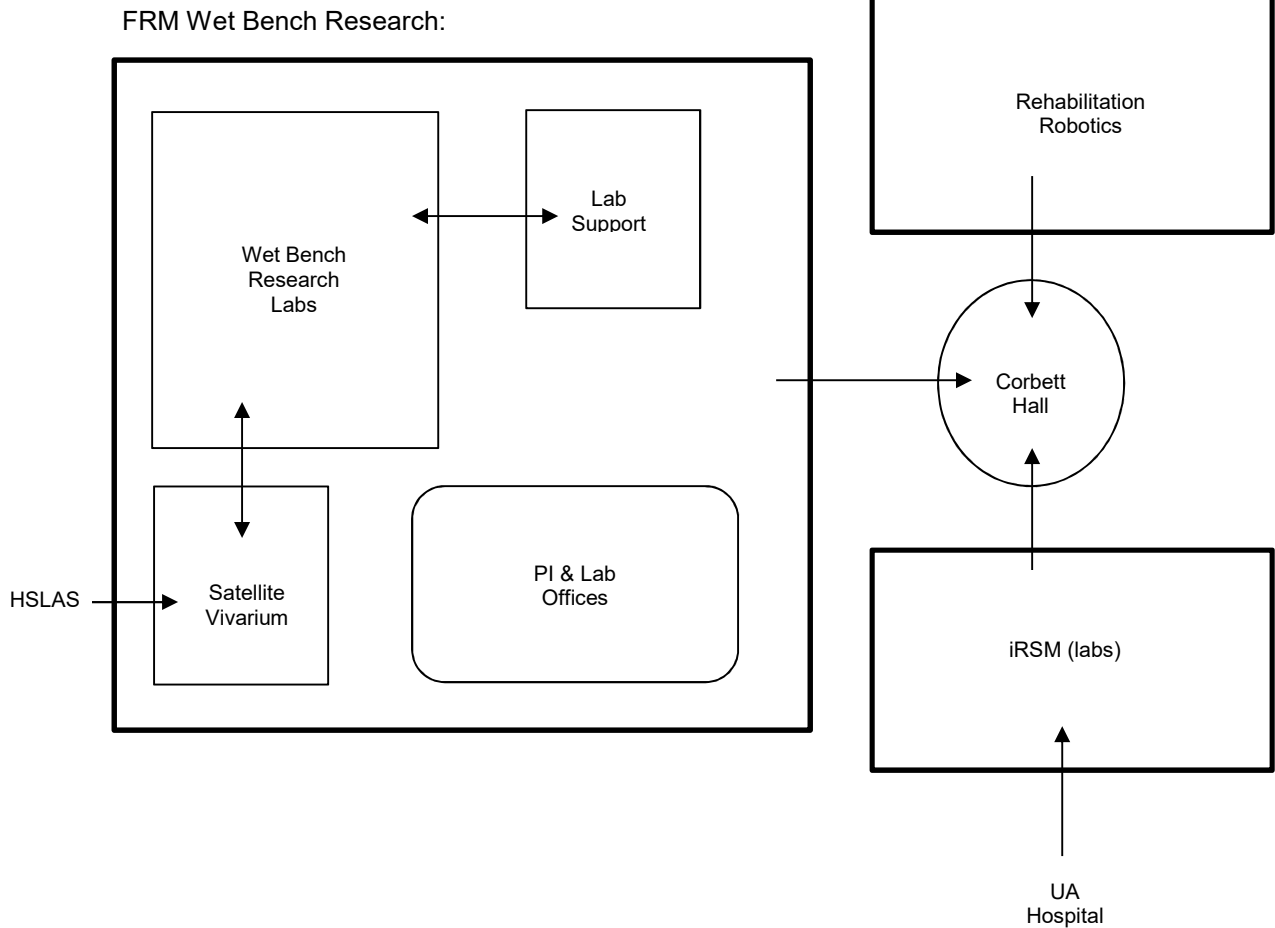
Animal work is generally completed in established purpose-built animal facilities, or purpose built smaller Alternate Animal holding facilities. If the procedures will keep the animal in the lab for less than 12 hours, generally facilities will be reviewed and tested to ensure lab is at a negative air pressure relationship to surrounding areas to control animal allergens.

Standard Operating Protocols (SOPs) should be prepared that are specific to the research labs. These SOPs become an integral part of the lab operation.

Functional Relationship Diagram

The spatial organization of this component will be generally as shown in the diagram below.

Diagram 5: Research Functional Relationship Diagram



FUNCTIONAL PROGRAM
Space Requirements
Table 10: Research Space List

Space Category			Staff	Current Area			Functional Program Area			Comments/Space Attributes
Space Use/Function	Position Type	Functional Unit	Staff Name	Bldg	Room No.	Area (nsm)	Space Standard	Unit/Qty.	Area (nsm)	
FRM Wet Bench Research:										
<i>Office Space:</i>										
Office	Principle Investigator	FRM		CH	3-48E 3-87	52.1	12.0	6	72.0	
				HMRC	513					
Office, shared	Research Associate	FRM					12.0	3	36.0	<i>two workstations</i>
Office, shared	Lab Technician	FRM					12.0	2	24.0	<i>two workstations</i>
Workstation	Post Doctoral Fellow	FRM					6.0	9	54.0	
Workstation	Graduate Student	FRM					3.0	20	60.0	
Workstation	Undergraduate Student	FRM					3.0	10	30.0	
Workroom		FRM							10.0	<i>shared space for printer, supplies, files, etc.</i>
Wet Research Labs:										
Lab Module	Principle Investigator	FRM	Fouad	CH	1-74 1-74A 1-74B 1-74C 1-74D	88.5	75.0	1	75.0	
Lab Module	Principle Investigator	FRM	Fouad/ Misiaszek	HMRC	506 506A	78.9	75.0	1	75.0	<i>includes satellite animal facility</i>
Lab Module	Principle Investigator	FRM	Bennett	HMRC	526	59.4	75.0	1	75.0	<i>includes satellite animal facility</i>
Lab Module	Principle Investigator	FRM	Misiaszek	CSB	2-51	-	75.0	1	75.0	<i>shared space</i>
Lab Module	Principle Investigator	FRM	Fouad	CH	3-88 3-88A 3-88ZZ	42.2	75.0	1	75.0	<i>includes satellite animal facility</i>
Lab Module	Principle Investigator	FRM	future				75.0	3	225.0	<i>Future recruits: FRM, OT, PT</i>
Microscope Room		FRM		CH	1-93	34.2	15.0	1	15.0	
Histology Lab		FRM					15.0	1	15.0	
Equipment Room		FRM					15.0	4	60.0	<i>shared</i>
Storage Room		FRM					15.0	2	30.0	<i>shared</i>
Subtotal, FRM Wet Bench Research						355.3			1,006.0	
Audiology Research (future recruit):										
Office	Principle Investigator	FRM					12.0	1	12.0	
Office, shared	Research Associate	FRM					12.0	1	12.0	<i>two workstations</i>
Workstation	Post Doctoral Fellow	FRM					6.0	2	12.0	
Workstation	Graduate Student	FRM					3.0	4	12.0	
Workstation	Undergraduate Student	FRM					3.0	2	6.0	
Lab Module	Principle Investigator	FRM					75.0	1	75.0	
Subtotal, Audiology Research						0.0			129.0	
Rehabilitation Robotics Space:										
<i>Office Space:</i>										
Office	Principle Investigator	FRM					12.0	3	36.0	
Workstation	Graduate Student	FRM		ECHA	2-545	45	3.0	9	27.0	
Meeting/Seminar Room		FRM		ECHA	2-545A	18.8			30.0	<i>10-12 people</i>
<i>Research Labs:</i>										
Lab Module	Principle Investigator	FRM	Adams	CH	3-59	50.8	75.0	1	75.0	
Lab Module	Principle Investigator	FRM	Hebert	Katz	5-005	12.0	40.0	1	40.0	<i>BLINC</i>
Lab Module	Principle Investigator	FRM		ECHA	2-555	218.4	75.0	3	225.0	<i>Robotics Lab</i>
Subtotal, Rehabilitation Robotics Space						345.0			433.0	

Table 10: Research Space List (continued)

Space Category			Staff	Current Area			Functional Program Area			Comments/Space Attributes
Space Use/Function	Position Type	Functional Unit	Staff Name	Bldg	Room No.	Area (nsm)	Space Standard	Unit/Qty.	Area (nsm)	
iRSM:										
Exam & Testing	HNSFAL								50.0	<i>Head & Neck Surgery Functional Assessment Lab</i>
Treatment Room	HNSFAL						15.0	2	30.0	
Stomatognathic Function Lab	HNSFAL								35.0	
Diagnostics Lab	FFVN								20.0	
Computer Lab	MMRL								60.0	
3D Printer Room	MMRL								10.0	
VR Cube	MMRL								10.0	
Consult Room	MMRL								12.0	
Bone Conduction Biomechanics Lab	BCAL								100.0	<i>assessment/treatment room, sound booth, bench space, workstations (4), table/chairs</i>
Neurotology Lab									48.0	<i>sound booth, bench space, workstations (4), table/chairs</i>
Interfacial Biomechanics Lab	IBL								25.0	
Biomechanics Testing	IBL								25.0	
Subtotal, iRSM						150.0			425.0	<i>Note the existing area has been approximated; no detailed plans were available</i>
Total, Research Space						850.3			1,864.0	

FUNCTIONAL PROGRAM
SPACE SUMMARY

The space projections indicate growth for all three Functional Components that have been studied within this Functional Program. The space summary overview is presented below. Key observations include:

- The most significant projected growth is within Research Space. This trends towards a doubling of space, mostly attributed to a plan to recruit new researchers within each Department.
- The Interdisciplinary Clinic is a new initiative however, there are existing clinics that would be amalgamated or absorbed into this integrated space. There may to an opportunity to renew or repurpose some existing space in Corbett Hall and/or eliminate the need for leased space off campus.
- There is a smaller projected growth for the instructional spaces. Some of the projection is new classroom and teaching lab space and the remaining is increasing the size to meet the current UA recommended space standards.

Table 11: Projected Space Requirements

	2017/18	2022/23
	Existing	Projected
Interdisciplinary Clinic		
Administrative Space	114.4	186.0
Clinic Space	625.2	973.0
Audiology	0.0	110.0
Total, Interdisciplinary Clinic	739.6	1,269.0
Instructional Spaces		
Instruction - Laboratory, Shop and Studio Space (Clinical Teaching)	2,147.5	3,030.0
Total, Instructional Spaces	2,147.5	3,030.0
Research Space		
FRM Wet Bench Research	355.3	1,006.0
Audiology (New Recruit)	0.0	129.0
Rehabilitation Robotics	345.0	433.0
Total, Research Space	700.3	1,568.0
TOTAL SPACE REQUIREMENTS	3,587.4	5,867.0
Table Notes:		
1. A reduction of space in some areas can be attributed to the application of UA space standards (existing spaces may exceed the current standards).		
2. Excludes space projections for iRSM; this will be addressed through a follow up programming exercise for that component.		

CONCEPTUAL SOLUTIONS

There are opportunities which can be further explored in order to address the requirement for additional space for FRM. There are two key assumptions that have been previously stated:

- Corbett Hall is the central administrative hub for FRM; this would remain moving forward.
- Corbett Hall cannot accommodate additional wet bench research laboratories.

Given those two assumptions, there are high level planning strategies in which to move forward and explore in greater detail.

1. Accommodate Growth in Existing Allocated Space:

- Retain wet bench research labs, both in Corbett Hall and HMRC.
- Work towards developing a formal space agreement with the Faculty of Medicine and Dentistry (FoMD) to secure the use of the existing labs.
- Explore options to accommodate new recruits in a nearby lab building (HMRC, Katz, Li Ka Shing, MSB, etc.) with the health sciences precinct.
- Instructional spaces would need to be renewed in existing space.
- The Interdisciplinary Clinic would need to operate within Corbett Hall and functions would need consolidation.

2. Expansion Adjacent Corbett Hall:

- Develop an expansion to Corbett Hall in which the Interdisciplinary Clinic is the major occupant. The consolidation of existing clinics would provide some space for the growth of Instructional spaces.
- The wet bench research labs would need to be addressed as outlined in Option 1.
- This is likely to the west of one of the existing wings of the building.

3. Accommodate Growth in a New Building with Another Major Occupant:

- The overall growth in projected space does not warrant a new, stand-alone building. However, there may be another Faculty, Department, Institute or Group who may have a cross-over of multi-disciplinary activity that may, combined, provide the space demand that will facilitate a new building located somewhere within the health sciences precinct (within the large red circle in the following diagram).
- Potential co-occupants with a common healthcare-based focus could be: iRSM, Biomedical Engineering, Nursing, FoMD, etc.
- A purpose-built facility could accommodate wet bench research labs and the Interdisciplinary Clinic from FRM.
- Space vacated within Corbett Hall can be repurposed for Instructional Spaces and potentially absorb some of the functions that are in leased space. There would be the potential for expansion space for other functions, like Graduate Studies, CHEEP, dry lab research, etc.

A graphic representation of the Conceptual Solutions is provided on the next page.

FUNCTIONAL PROGRAM

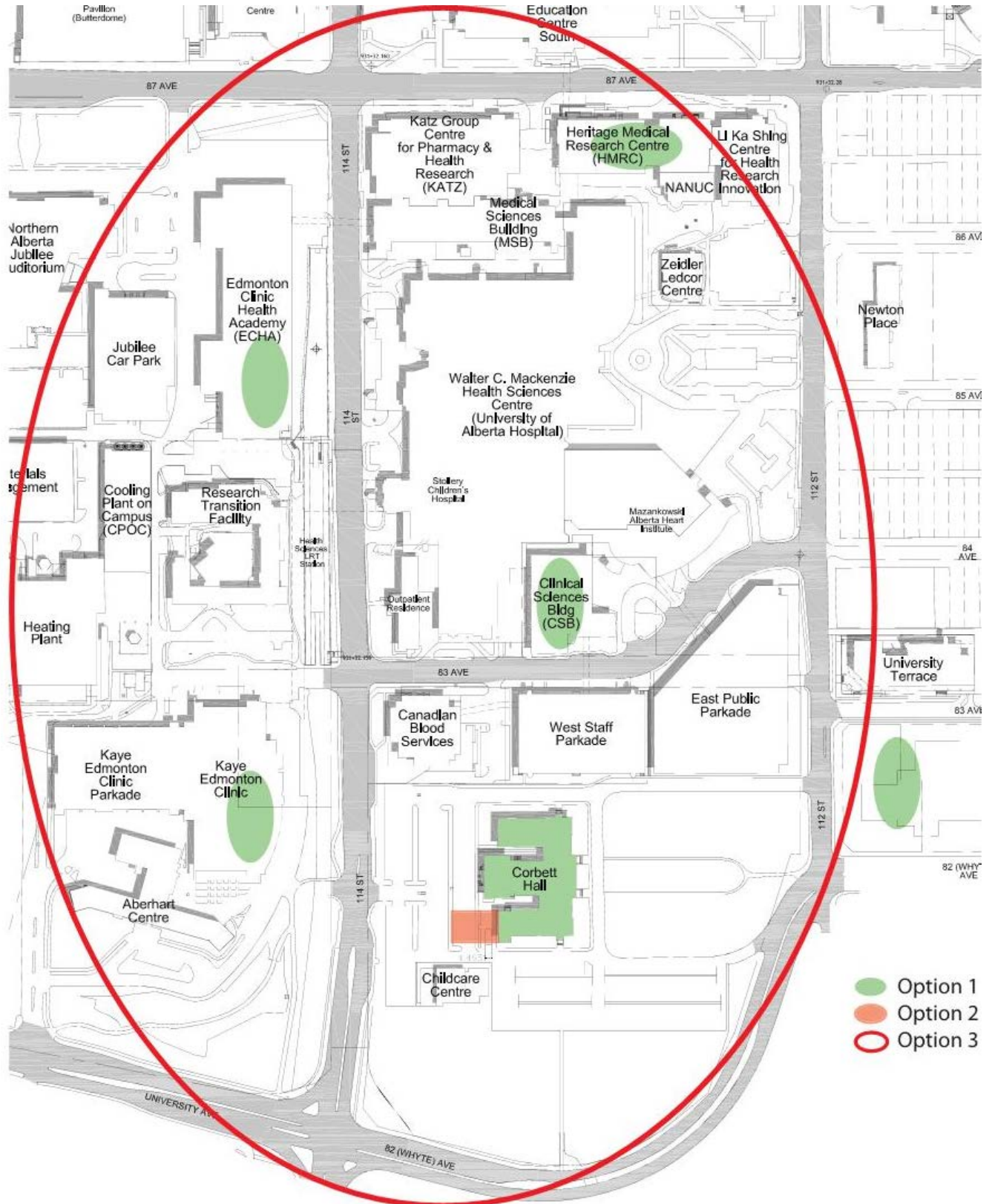


Diagram 6: Partial Campus Map & Conceptual Solutions

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FUNCTIONAL PROGRAM

RECOMMENDATION

It is recommended that the Functional Program for the Faculty of Rehabilitation Medicine (FRM) be approved so that it can be used as the basis for further developing accommodation plans for both the immediate and long term.

The development of the Functional Program aligns with other high-level planning activities which are focused on the UA North Campus and the University Hospital (Walter C. Mackenzie, Kaye Edmonton Clinic and other adjacent sites occupied by Alberta Health Services). Due to the linkages between FRM and AHS there is some advantage to confirm a vision for the Faculty so that it is poised to grow accordingly and in support of the health care services that are provided on adjacent sites.

The Functional Program will ultimately be submitted to the Facilities Development Committee (FDC), a division of the General Faculties Council (GFC), which is responsible for campus planning and facilities. Once approved, the Functional Program represents the projected space needed by the Faculty to fulfill its proposed mandate. It is therefore used as the basis of space allocation and planning moving forward.

PARTICIPANTS

This document was prepared with the help and participation of members of the Faculty of Rehabilitation Medicine. The members are listed below for reference:

University of Alberta

Kelly Anderson
Kelly Pederson
Lorna Baker-Perri

Faculty of Rehabilitation Medicine (FRM) User Groups:Project Steering Committee

Robert Haennel
Trish Manns
Bernadette Martin
John Misiaszek
Deborah Palmer

Interdisciplinary Functional Component

Kim Dao
Bernadette Martin
Lu-Anne McFarlane
Cori Schmitz

Instructional Functional Component

Geoff Bostick
Shaniff Esmail
Trish Manns
Bernadette Martin
Lu-Anne McFarlane

Research Functional Component

Kim Adams, Rehabilitation Robotics
Martin Ferguson-Pell, Rehabilitation Robotics
Karim Fouad, FRM Research
Vanessa Hearn, iRSM
Greg Kawchuk, Rehabilitation Robotics
Hameed Khan, iRSM
John Misiaszek, FRM Research
Jana Rieger, iRSM

Consultant Team (HFKS Architects Inc.)

Janet Koshuta

FUNCTIONAL PROGRAM

SIGN-OFF SHEET

In accordance with the Agreement, we are submitting for review and approval the Functional Program. We respectfully request that copies of the report be circulated to the appropriate departments and individuals who are the key stakeholders in this project. Comments can be made and noted on this report and the documents will be revised or amended accordingly, with the approval of the Client.

The undersigned have reviewed the Functional Program contained herein and accept its contents as representing the requirements.

Faculty of Rehabilitation
Medicine:



Bob Haehnel, Dean

University of Alberta,
Facilities & Operations:



Lorna Baker-Perri, Director, Space Management








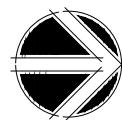
Pat Jansen, Associate Vice President, Planning & Project Delivery

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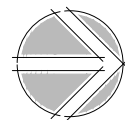
Existing Floor Plans





The following pages contain the existing floor plans for the spaces currently occupied by FRM and as it relates to the Functional Program. These drawings were assembled by Space Management's CAFM group.

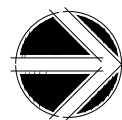
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	DPT OF OCCUPATIONAL THERAPY 372.42
	DPT OF PHYSICAL THERAPY 991.14
	OPAU 84.76
	REHAB MEDICINE 351.60
TOTAL: 2,276.92	
Floor Gross: 3,866.34	




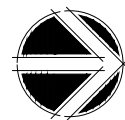
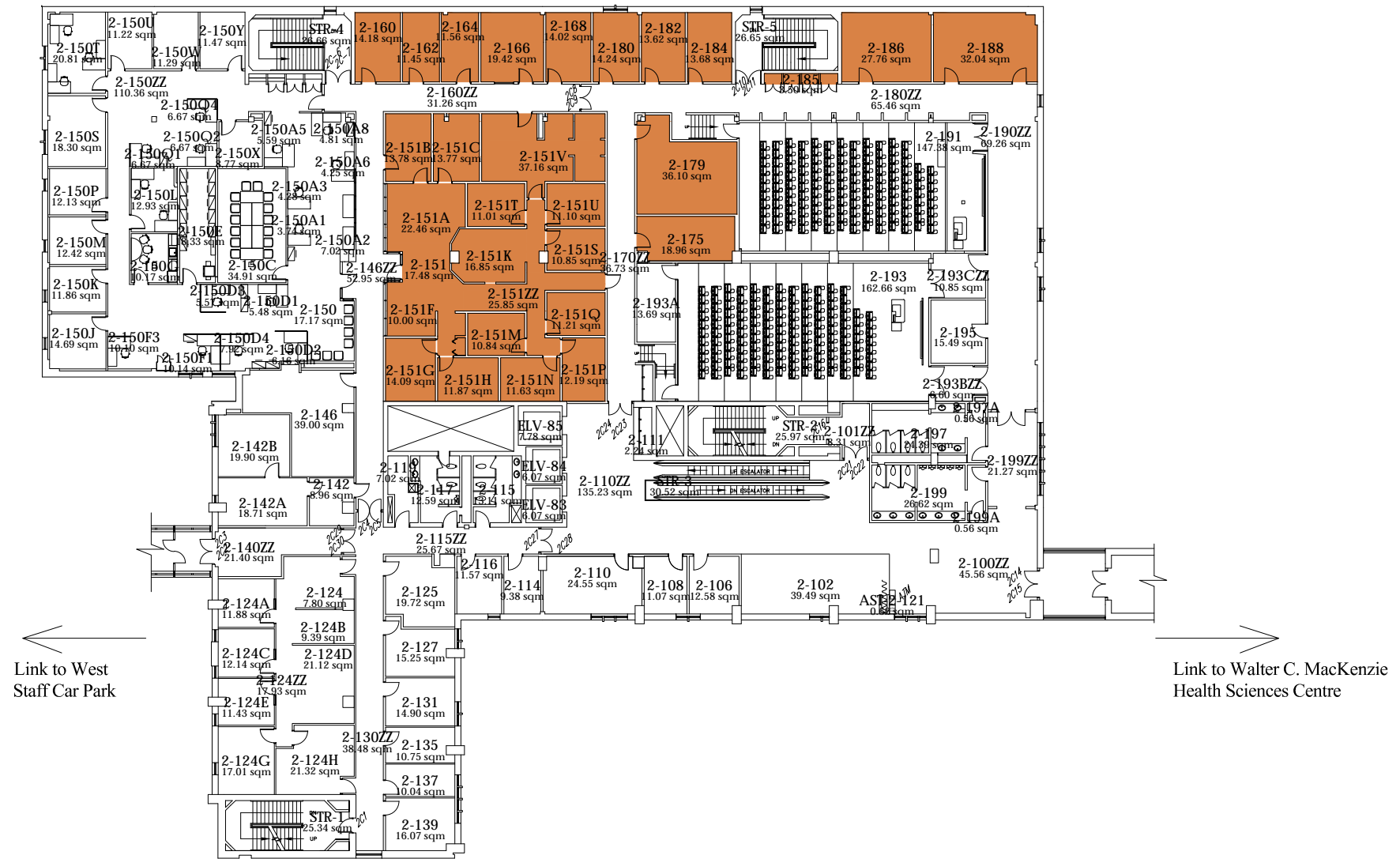
ORGANIZATION		AREA
■	CHEEP ALBERTA LEARNING	95.98
■	COMMUNICATION SCIENCES AND DISORDERS	349.04
■	DPT OF OCCUPATIONAL THERAPY	348.82
■	DPT OF PHYSICAL THERAPY	193.96
■	REHAB MEDICINE	848.31
TOTAL:		1,835.91
Floor Gross:		3,851.50









ORGANIZATION	
	COMMUNICATION SCIENCES AND DISORDERS 211.25
	DPT OF OCCUPATIONAL THERAPY 540.25
	DPT OF PHYSICAL THERAPY 556.05
	REHAB MEDICINE 727.83
TOTAL: 2,035.38	
Floor Gross: 3,776.26	



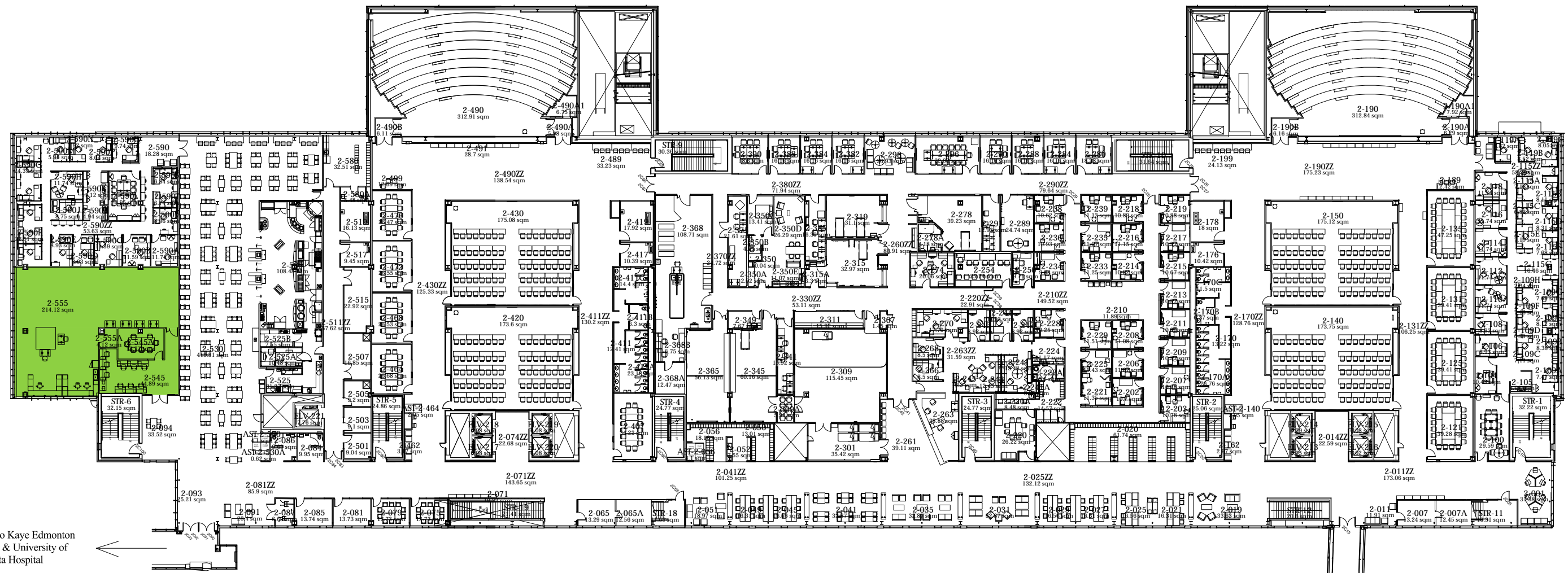
ORGANIZATION	
	LAYOUT TO BE DETERMINED
	AREA
	508.16
TOTAL:	508.16
Floor Gross:	2,830.03



ORGANIZATION		AREA
	COMMUNICATION SCIENCES AND DISORDERS	136.89
	DPT OF OCCUPATIONAL THERAPY	7.11
	DPT OF PHYSICAL THERAPY	328.45
	INSTITUTE FOR RECONSTRUCTIVE SCIENCES IN MEDICINE (RSM)	190.59
	REHAB MEDICINE	63.01
	ISTAR	60.58
TOTAL:		786.63
Floor Gross:		1,237.17

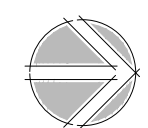





ORGANIZATION	
 DPT OF PHYSICAL THERAPY	AREA 140.95
TOTAL:	140.95
Floor Gross:	9,193.22



Link to Kaye Edmonton Clinic & University of Alberta Hospital

Link to Medical Sciences Building



ORGANIZATION		AREA
	DIV OF PHYSICAL MEDICINE & REHABILITATION	162.40
	DPT OF OCCUPATIONAL THERAPY	35.32
	DPT OF PHYSICAL THERAPY	121.46
TOTAL:		319.18
Floor Gross:		3,662.87

