The following Motions and Documents were considered by the GFC Facilities Development Committee at its Thursday, May 22, 2014 meeting:

**Agenda Title: Accommodation Plan for Repurposing the Telus Centre For Use as An International Centre**

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 Accommodation Plan for the repurposing of the Telus Centre for use as an International Centre (as set forth in Attachment 1), excluding specifics related to the siting of this facility, as the basis for further planning and design.

Final Item: 4.

**Agenda Title: Saskatchewan Drive Students’ Residence – Design Development Report**

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 Saskatchewan Drive Students’ Residence – Design Development Report (as set forth in Attachment 2) as the basis for further engineering and development of contract documents.

Final Item: 5.
OUTLINE OF ISSUE

Agenda Title: Accommodation Plan for Repurposing the Telus Centre For Use as An International Centre

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 Accommodation Plan for the repurposing of the Telus Centre for use as an International Centre (as set forth in Attachment 1), excluding specifics related to the siting of this facility, as the basis for further planning and design.

Item

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<th>[ ] Approval</th>
<th>[ ] Recommendation</th>
<th>[ ] Discussion/Advice</th>
<th>[ ] Information</th>
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<td>Associate Director, Accommodation Planning and Programming, Office of the University Architect, Facilities and Operations</td>
<td></td>
<td></td>
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<tr>
<td>Presenters</td>
<td>Britta Baron, Vice-Provost and Associate Vice-President (International); Lorna Baker Perri, Associate Director, Accommodation Planning and Programming, Office of the University Architect, Facilities and Operations; and Shannon Loughran, Planning Officer, Accommodation Planning and Programming, Office of the University Architect, Facilities and Operations</td>
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Details

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<tr>
<th>Responsibility</th>
<th>Vice-President (Facilities and Operations)</th>
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<tr>
<td>The Purpose of the Proposal is (please be specific)</td>
<td>To seek approval for the Accommodation Plan for repurposing the Telus Centre for use as an International Centre.</td>
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<tr>
<td>The Impact of the Proposal is</td>
<td>To transform the Telus Centre for use as an International Centre which will allow the University to achieve its vision, accommodate the international portfolio in a centralized, consolidated venue, gain a prominent presence, and improve space efficiencies.</td>
</tr>
<tr>
<td>Repurposing the Telus Centre provides many benefits for the University with regard to space alignment for departments and effective use of space. It establishes a cohesive presence for the University's international portfolio, refocuses the use of the Telus Centre, enlivens the currently-underutilized atrium, addresses outstanding programming and growth requirements for the key occupants, and alleviates facility space pressures in other locations across the North Campus.</td>
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<td>Replaces/Revises (eg, policies, resolutions)</td>
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<td>Target date to begin: November, 2014.</td>
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<td>Sources of Funding</td>
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Alignment/Compliance

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<th>Dare to Discover; Academic Plan (Dare to Deliver); University of Alberta Comprehensive Institutional Plan (CIP)</th>
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<td>Compliance with Legislation, Policy and/or Procedure</td>
<td>1. Post-Secondary Learning Act (PSLA): The PSLA gives GFC responsibility, subject to the authority of the Board of Governors, over</td>
</tr>
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<td>Relevant to the Proposal (please quote legislation and include identifying section numbers)</td>
<td>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)). 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.” 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 […]” Section 67(1) of the Act governs the terms under which university land may be leased.</td>
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<td>2. GFC Facilities Development Committee (FDC) Terms of Reference – Section 3. Mandate of the Committee: “[…]”</td>
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<td>2. Delegation of Authority</td>
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<td></td>
<td>Notwithstanding anything to the contrary in the terms of reference above, the Board of Governors and General Faculties Council have delegated to the Facilities Development Committee the following powers and authority:</td>
</tr>
<tr>
<td></td>
<td>A. Facilities</td>
</tr>
<tr>
<td></td>
<td>1. To approve proposed General Space Programmes (Programs) for academic units.</td>
</tr>
<tr>
<td></td>
<td>2. (i) To approve proposals concerning the design and use of all new facilities and the repurposing of existing facilities and to routinely report these decisions for information to the Board of Governors.</td>
</tr>
<tr>
<td></td>
<td>(ii) In considering such proposals, GFC FDC may provide advice, upon request, to the Provost and Vice-President (Academic), Vice-President (Facilities and Operations), and/or the University Architect (or their respective delegates) on the siting of such facilities. (GFC SEP 29 2003)</td>
</tr>
<tr>
<td></td>
<td>B. Other Matters</td>
</tr>
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<td></td>
<td>The Chair of FDC will bring forward to FDC items where the Office of the Provost and Vice-President (Academic) and/or the Office of the Vice-President (Facilities and Operations), in consultation with other units or officers of the University, is seeking the advice of the Committee. […]”</td>
</tr>
<tr>
<td></td>
<td>3. UAPPOL Space Management Policy and Space Management Procedure: The respective roles of GFC FDC and the Vice-President (Facilities and Operations) with regard to institutional space management are set out in this Board-approved Policy and attendant Procedure.</td>
</tr>
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</table>
Routing (Include meeting dates)

Consultative Route
(parties who have seen the proposal and in what capacity)

- University of Alberta International (UAI): Vice-Provost and Associate Vice-President (International), Administrative Officer, Executive Director for Student Programs and Services;
- China Institute at the University of Alberta (CIUA): Director, Associate Director;
- Prince Takamado Japan Centre: Director;
- Centre for Teaching and Learning (CTL): Interim Director;
- Library Services and Information: Facilities Director, Vice-Provost and Chief Librarian;
- Information Services and Technology: Team Lead Network Operations, Team Lead Depot Operations and Classroom Technology;
- Facilities and Operations: Team Members from Planning and Project Delivery

Approval Route (Governance)
(including meeting dates)

GFC Facilities Development Committee (May 22, 2014) – for approval

Final Approver

GFC Facilities Development Committee

Attachments

1. Attachment 1 (pages 1 – 38) - Accommodation Plan for Repurposing the Telus Centre for Use as An International Centre (May 22, 2014)

Prepared by: Shannon Loughran, Planning Officer, Accommodation Planning and Programming, Office of the University Architect, Planning and Project Delivery, Facilities and Operations, shannon.loughran@ualberta.ca
ACCOMMODATION PLAN FOR
REPURPOSING THE TELUS CENTRE
FOR USE AS AN INTERNATIONAL CENTRE

MAY 22, 2014
TABLE OF CONTENTS

Letter of Support from University of Alberta International

1.0 EXECUTIVE SUMMARY

2.0 INTRODUCTION
   2.1 Acknowledgements
   2.2 Purpose
   2.3 Background
   2.4 Project Goals
   2.5 Overview of Recommended Occupants

3.0 FUNCTIONAL PROGRAM
   3.1 University of Alberta International (UAI)
   3.2 China Institute at the University of Alberta (CIUA)
   3.3 Prince Takamado Japan Centre for Teaching and Research (Japan Centre)
   3.4 The India Institute and Other Emerging Institutes

4.0 RECOMMENDED ACCOMMODATION PLAN
   4.1 Recommended Space Allocations
   4.2 Recommended Functional Space Use

5.0 SUMMARY

6.0 FINAL RECOMMENDATION

7.0 APPENDICES OVERVIEW
   7.1 Appendix A: Detailed Space Programs
   7.2 Appendix B: Related Floor Plans
   7.3 Appendix C: Other Background Information
Letter of Support from University of Alberta International

University of Alberta International
3-600 Enterprise Square
10230 Jasper Avenue
Edmonton, Alberta, Canada T6G 2E1

Tel: 780.492.3600
Fax: 780.492.1488
info@international.ualberta.ca
www.international.ualberta.ca

Date: Tuesday, January 7, 2014

To: Dr. Colleen Skidmore
    Vice-Provost & Associate Vice-President (Academic)

From: Britta Baron
    Vice-Provost & Associate Vice-President (International)

Re: Letter of Support for TELUS space allocation to University of Alberta International (UAI)

Dear Colleen,

On behalf of University of Alberta International, I am writing in support of the proposed allocation of TELUS space and usage to UAI. Allotment of space within TELUS will enable UAI to consolidate to one location on North Campus, while providing an exceptional gathering space for international students, faculty and staff.

International activities at the University of Alberta are of key importance for the overall development of the University. The University's international reputation depends to a significant extent on our ability to build meaningful and productive international partnerships and research collaborations and to attract highly qualified international students and faculty to our campus. High quality education abroad programs will be critical to the success of our domestic recruitment efforts and will attract excellent students from all over Canada to the University.

Currently UAI is spread out in three locations: Enterprise Square, HUB, and TELUS. The allocation of space in TELUS will bring all UAI units together, for increased collaboration and enhanced international student services. Also, as a service unit for Faculties and students, UAI will benefit from a north campus location. UAI's services include supporting institutional level development and implementing international strategy including managing partnerships and Faculty-based plans and initiatives which further the University of Alberta's international goals and objectives.

In order to continue to contribute effectively and to further enhance its impact with a view to strengthening the UofA's academic success and its national and international reputation, UAI will benefit from a unified location that is easily accessible on campus to faculty members, students, administrators and visitors.

Please contact me if you have any questions.

Sincerely,

[Signature]

Britta Baron
Vice-Provost and Associate Vice-President (International)
1.0 **EXECUTIVE SUMMARY**

The senior executive team of the University of Alberta has recently developed a new vision to transform the Telus Centre for use as an international centre. The Telus Centre initiative aligns with the strategic goals outlined in the institution’s academic plan by building our international portfolio with a centralized, consolidated venue for international student services and programming. It will consolidate existing and emerging international institutes to strengthen their collective presence and support their outreach and research initiatives.

Repurposing the Telus Centre provides many benefits for the university with regard to space alignment for departments, and effective use of space. It establishes a cohesive presence for the university’s international portfolio, refocuses the use of the Telus Centre, enlivens the currently under-utilized atrium, addresses outstanding programming and growth requirements for the key occupants, and alleviates facility space pressures in other locations across campus.

Targeted occupants who specialize in international activities share common space requirements ranging from holding special events, seminars, conferences, hosting international visitors and welcoming students from abroad. Level 1 will predominantly house a large portion of shared event space dedicated to these services and programs. The recommended anchor occupant is the department of University of Alberta International (UAI) who will occupy a large portion of Level 2. The international institutes, as a collective, are a highly complementary occupant group to UAI. These groups will be encouraged to work together to achieve common goals and advance the presence of the international portfolio. The Telus Centre initiative will provide a facility that is a welcoming, consolidated, collaborative and effective working environment for international students, staff, researchers and visitors.

Related to the Telus Centre initiative, the Centre for Teaching and Learning (CTL) will be relocated from the Telus Centre to Cameron Library. This relocation will accommodate CTL’s supported program and growth requirements in appropriate space.
2.0 INTRODUCTION

2.1 Acknowledgements

The preparation of this document was a collaborative effort with contributions from:

Britta Baron, Vice-Provost and Associate Vice-President (International) UAI
Doug Weir, Director, International Student Services, UAI
Amber Holder, Administrative Office, Office of the Vice-Provost and Associate Vice-Provost and Associate Vice-President (International), UAI
Gordon Houlden, Director, China Institute, CIUA
Jia Wang, Associate Director, China Institute, CIUA
Dr. Kaori Kabata, Director, Prince Takamado Japan Centre for Teaching and Research
Lorna Baker Perri, Associate Director, Accommodation Programming and Planning, Planning and Project Delivery, F & O
Shannon Loughran, Accommodation Planner, Accommodation Programming and Planning, Planning and Project Delivery, F & O
Jodi DeAlexandra, Architectural and Planning Technologist, Design and Technical Services, Planning and Project Delivery, F & O

2.2 Purpose

The purpose of this document is to recommend the approval of the accommodation plan that will allow the targeted international departments to reach the university’s vision of repurposing the Telus Centre for use as an international centre. The accommodation plan is based on each unit’s supported programmatic space requirements. This document will present project goals, space requirements for the key recommended occupants, and recommended space allocations. It will also summarize overall benefits achieved by the Telus Centre repurposing initiative.

2.3 Background

2.3.1 Location

The Telus Centre is located in a prominent location at the east entrance of campus along 87 Avenue. It is across the street from International House, a residence exclusively housing a mix of international students and other students who are looking for internationally-related experiences. This residence is within two blocks of HUB Mall, which houses a large number of undergraduate international students. The proximity of the Telus Centre to these internationally-focused student residences provides optimal access for international student services, support and community events.
2.3.2 Physical Space

The Telus Centre is an open concept facility originally constructed to serve as a conference centre for professional programs. It has two levels and has a total gross building area of approximately 5,500 square metres. Its unique architecture features a large, curved, glass atrium, which is abundant in natural light, providing a bright and uplifting atmosphere.
2.4 Project Goals

Building on the University of Alberta’s vision and strategic goals for internationalization, the senior executive at the University of Alberta is intent on creating a centralized location for all international affairs. This will include a new international concierge-like service area that will, in effect, become an International Student Welcome Centre.

In order to reach the vision of creating an International Centre, the accommodation plan follows a holistic approach to ensure the benefits are comprehensive for the entire university.

The primary goals of this project are to:
- consolidate the presence of the international portfolio;
- centralize services to international students;
- enhance international community connections;
- ensure space adjacencies in the building are functionally appropriate;
- utilize this architecturally significant building with existing event space for prominent events and hosting international visitors; and
- relieve space pressures in other buildings across campus by consolidating related occupants who require similar type of space.

2.5 Overview of Recommended Occupants

2.5.1 University of Alberta International (UAI)

UAI’s mandate is to support the institution’s internationalization strategy. It provides a variety of services and programs to international and domestic students, institutional partnerships, and faculty initiatives.

The department of UAI is comprised of five units:
1. Office of the Associate Vice-Provost and Associate Vice-President, International (OAVP): provides leadership and administrative support to the department.
2. International Relations and Recruitment (IRR): works with international partners in developing and transitional countries to promote knowledge exchange and active learning approaches to build capacities in educational institutions, professional bodies and government decisions.
3. International Student Services (ISS): provides critical support to international students to assist in the transition to Canada, Edmonton and the University of Alberta.
4. Education Abroad Program (EAP): aligns students with opportunities to study, work and/or volunteer abroad.
5. Global Education Program (GEP): provides educational opportunities for students, faculty, staff and the community to explore issues of global importance and to gain the knowledge,
skills and understanding required to become global citizens. GEP also hosts the flagship event, International Week, which takes place annually.

UAI estimates that through its programming activities, an attendance of approximately 27,000 students, colleagues and visitors is expected in the coming years.  
(See Appendix C for a detailed list of the types of services and activities programmed and hosted by the respective UAI units, pages 35-36)

2.5.2 The China Institute
The China Institute at the University of Alberta (CIUA) constitutes one of the most prominent international institutes at the University of Alberta. Its mandate is “to advance scholarship at the University of Alberta, to enhance and support new teaching and research activities between Canada and China, and to promote strong academic linkages between the University of Alberta and Chinese universities” (http://www.china.ualberta.ca/About.aspx). They host an annual conference and offer many seminars throughout the year to scholars and students. CIUA’s staff complement is currently comprised of 13 staff members, which includes: a director, an associate director, three visiting scholars, a post-doctorate fellow, four research assistants and three administrative staff.

2.5.3 The Prince Takamado Japan Centre for Teaching and Research (Japan Centre)
The Japan Centre offers support and outreach to researchers and students whose work specialty focuses around Japan. Currently the administration consists of a full-time administrative assistant and a part-time director. Eventually, the director position will become full-time and additional administrative and/or research assistant positions may be added.

2.5.4 The India Institute and Other Emerging Institutes
The India Institute offers support and outreach to researchers and students whose work specialty focuses around India. It has a part-time director who presently conducts his institute work in his faculty office. Future projected positions include the addition of a full-time administrative assistant.

2.5.5 Existing Occupants to Remain
The 300 seat lecture theatre on the north-east side of the building as well as the Level 1 classrooms 134, 143 and 145 will remain centrally-scheduled and managed by the Office of the Registrar. The department of Museums and Collections Services (MACS) manages the south-west portion of Level 1 which accommodates a large U of A collection. These groups will remain as occupants in their existing spaces.
3.0 FUNCTIONAL PROGRAM

Each department’s functional program is based on thorough discussions of their respective space needs and function within the Telus Centre. All groups have a common requirement for administrative space as well as event space to host frequent and diverse conferences, seminars, information sessions, etc. Dedicated departmental space will be allocated to focus on their respective day to day operational functions and shared space will be allocated to accommodate student services, hosting and educational requirements. The shared space is intended to encourage effective use of space, as well as foster collegiality and collaboration where possible.

3.1 University of Alberta International (UAI)

UAI’s departments have been spread across campus since its inception in 1991. They are presently accommodated in an office suite in HUB Mall, a portion of the 2nd floor of the Telus Centre and an office suite in Enterprise Square. While UAI has adapted to this arrangement, it has been detrimental to the scope and efficiency of its services and administrative processes.

In 2010, General Faculties Council Facilities Development Committee (FDC) approved the General Space Program (GSP) for UAI, which described its existing space accommodation, projected vision and related growth. The total projected space requirement from the 2010 GSP was 1417.0 net square metres, based on a model of departmental consolidation.

One of UAI’s top priorities is to consolidate the department under one roof in the Telus Centre to increase opportunity for cross-collaboration and administrative efficiencies. Consolidating UAI in the Telus Centre allows for many space efficiencies, improves the physical layout of space as well as the provides opportunity to consolidate support space such as, copy rooms, waiting areas, and storage and meeting rooms.

Another significant gain in space efficiency is the shift away from having large amounts of UAI-dedicated event space to a shared event-space model. This is afforded due to the amount and configuration of existing event space on Level 1 of the Telus Centre.

The total departmental space requirement for UAI to consolidate into the Telus Centre is 907.5 net square metres. This reflects changes in staffing levels since 2010 and includes growth projections. The table below compares the projected space requirements from the 2010 General Space Program to the functional space requirements for UAI to consolidate into the Telus Centre. (See Appendix A for UAI’s detailed space program, pages 16-19).
<table>
<thead>
<tr>
<th>UAI Work Units</th>
<th>Projected Space Requirement from 2010 General Space Program (NSM*)</th>
<th>Functional Space Program subtotals for UAI Consolidation into Telus Centre (NSM*)</th>
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<tr>
<td>Office of the Associate Vice-President (OAVP)</td>
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<td>81.0</td>
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<tr>
<td>International Relations and Recruitment (IRR)</td>
<td>203.0</td>
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</tr>
<tr>
<td>International Student Services (ISS)</td>
<td>229.0</td>
<td>146.5</td>
</tr>
<tr>
<td>Education Abroad Program (EAP)</td>
<td>225.0</td>
<td>78.5</td>
</tr>
<tr>
<td>Global Education Program (GEP)</td>
<td>91.0</td>
<td>58.0</td>
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<tr>
<td>Support Space</td>
<td>557.0</td>
<td>374.0</td>
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<td><strong>TOTAL NSM</strong>*</td>
<td><strong>1417.0</strong></td>
<td><strong>907.5</strong></td>
</tr>
</tbody>
</table>

*NSM: Net Square Metres

3.2 **The China Institute at the University of Alberta (CIUA)**

CIUA’s projected space program requirement is 173.1 net square metres for the office components. This does not include meeting and event space requirements which would be accommodated in the shared event/meeting space on Level 1 and a smaller, shared meeting room on Level 2.

(See Appendix A for CIUA’s detailed space program, pages 20-21).

3.3 **The Prince Takamado Japan Centre for Teaching and Research (Japan Centre)**

The Japan Centre’s projected space program requirement is 20.5 net square metres for the office components. An additional 36.8 net square metres is required for a shared copy area and small meeting room.

(See Appendix A for the Japan Centre’s detailed space program, page 22).

3.4 **The India Institute and Other Emerging Institutes**

The India Institute’s projected space program requirement is 20.5 net square metres plus the aforementioned 36.8 net square metres for a shared copy area and small meeting room.

(See Appendix A for India Institute’s detailed space program, page 23).
4.0 RECOMMENDED ACCOMMODATION PLAN

4.1 Recommended Space Allocations

The following table compares the functional space program requirements to the recommended space allocations for the targeted occupants for the proposed international centre.

Functional Requirements compared to Proposed Locations in the Telus Centre

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<th>International Centre Occupants</th>
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<tr>
<td>UAI:</td>
<td>NASM*</td>
<td>CGSM**</td>
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<td>China Institute</td>
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<tr>
<td>Japan Centre</td>
<td>20.5</td>
<td>27.7</td>
<td>Suite 201</td>
</tr>
<tr>
<td>India Institute</td>
<td>20.5</td>
<td>27.7</td>
<td>Suite 201 incl.</td>
</tr>
<tr>
<td>Shared Copy Area</td>
<td>8.0</td>
<td>10.8</td>
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<td>Shared Mtg Rm.</td>
<td>28.8</td>
<td>38.9</td>
<td>Suite 201 incl.</td>
</tr>
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<td></td>
<td>250.9</td>
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<td>Shared Meeting/Event Space (Centrally scheduled)</td>
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<td>NW Level 1 &amp; atrium</td>
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<td>641.9</td>
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*NASM= net square metres
**CGSM= component gross square metres which includes 35% mark-up for circulation

(See Appendix B for Proposed Space Allocation Diagrams, pages 27-28).

4.2 Recommended Functional Space Use Plan

In order to achieve the consolidation of UAI into the Telus Centre, the recommended Functional Space Use Plan is as follows:
4.2.1 Level 1

The atrium is intended to accommodate concierge services for visitors to the building. The central part of the atrium will be set up as a common lounge space for international students. It will transform into a multipurpose space for event socials, open houses, presentations and/or symposiums, when required.

The atrium and the north-east portion of Level 1 will remain as existing, shared event/meeting/classroom space, managed by the Office of the Registrar’s central booking system, with the recommendation that building occupants are provided the opportunity for first priority booking. The existing shared computer lab and video conference rooms on Level 1 will continue to be available for campus-wide booking and may be re-assessed in the future to accommodate additional international institutes as space requirements continue to grow.

The north end of the atrium will be used for hoteling, study and/or meeting space; the south end of the atrium will have a dedicated UAI reception desk to welcome and assist students/visitors. This area will also have a computing area for advisors to help international students who may need assistance with their visas, housing options, local amenities, etc. UAI will be allocated Suite 1-40 for up to five advising rooms to allow staff advisors to meet with students privately. Room 1-40A has an existing kitchen that will be allocated to UAI for the international student community’s use and will be available for all building occupants to book for special events.

(See Appendix B for Proposed Space Allocation Diagram for Level 1, page 27).

4.2.2 Level 2

The north-east portion of Level 2 will be allocated to UAI to accommodate their consolidated department. Their management team will be housed in enclosed offices and their support staff in open workstations. A large meeting room will allow UAI to host international visitors, staff meetings and hold larger group functions. A project room will allow for the preparation of major annual events such as Welcome Week and International Week. Other support space includes a copy/storage room, and a student hoteling area.

The south-west portion of Level 2 will house the China Institute, consolidated into Suite 2-03. Suite 2-01 will house the Japan Centre, India Institute and other emerging international institutes. Further discussion with the institutes will facilitate the layout for the shared portions of the international institute space.

(See Appendix B for Proposed Space Allocation Diagram for Level 2, page 28).
5.0 SUMMARY

Repurposing the Telus Centre for use as an international centre supports the overall vision of the University of Alberta, and also achieves the following comprehensive benefits:

- **Pertaining to the University of Alberta's international portfolio:**
  - increases international student services and programming;
  - allows for international students to connect with other foreign students, Canadian students, staff and researchers;
  - improves convenient access for students who reside in adjacent student housing;
  - provides a featured Visitor's Meeting Room for international guests; and
  - provides significant event space with inherent to host a wide variety of events.

- **Pertaining to the campus-wide facility accommodation plan:**
  - improves functional use and space allocation of the Telus Centre;
  - provides growth space for all targeted and future occupants related to the international portfolio;
  - consolidates UAI to support their operations and services;
  - consolidates for the China Institute to support their operations;
  - improves the Japan Centre and India Institute’s presence;
  - relocates Centre for Teaching and Learning (CTL) to a more central, improved location and accommodates their programmed growth; and
  - eases space pressures in Enterprise Square, HUB Mall and the future Dent Pharm accommodation programming.

6.0 FINAL RECOMMENDATION

Approve the recommended accommodation plan for repurposing the Telus Centre for use as an international centre.
7.0 APPENDICES OVERVIEW

The following appendices are organized as follows:

7.1 Appendix A: Detailed Space Programs
- UAI Space Program
- China Institute Space Program
- Japan Centre Space Program
- India Institute Space Program

7.2 Appendix B: Related Floor Plans
- Existing Space Allocation Diagrams, Levels 1 & 2
- Proposed Space Allocation Diagrams, Levels 1 & 2
- UAI Program Fit, Levels 1 & 2
- Occupancy Movement Diagrams

7.3 Appendix C: Other Background Information
- Projected Numbers of Participants to Annual UAI Events
- Excerpts from Dare to Discover and Dare to Deliver Regarding: Internationalization, Research Support and Student Experience
7.1 Appendix A: Detailed Space Programs

Please see the following space programs for:

- University of Alberta International (UAI)
- China Institute
- Japan Centre
- India Institute
# UAI Functional Program, Consolidation in Telus

## Detailed Listing of Current and Space Program Requirements

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**3.0 International Student Services**

| 3.1 Executive Director, Student Programs and Services | Doug Weir | closed | 12.0 |
| 3.2 Associate Director | Kumarie Achaibar-Morrison | closed | 10.0 |
| 3.3 Manager, Sponsored Student Program | Dan Fredrick | closed | 10.0 |
| 3.4 Manager, Visiting Students Program | Gretchen Dubois-Phillips | closed | 10.0 |
| 3.5 VSCP Student Advisor | Rod Loyola | open | 6.5 |
| 3.6 International Student Specialist | Leslie Heirath | open | 6.5 |
| 3.7 International Student Specialist | Lubna Ahmad | open | 6.5 |
| 3.8 International Student Specialist | Nora Lambrecht | open | 6.5 |
| 3.9 International Student Specialist | Vacant (to be posted immediately) | open | 6.5 |
| 3.10 International Student Specialist | Vacant (require at least one more by 2016/17) | open | 6.5 |
| 3.11 Work Programs Coordinator | Julia Szveda | open | 6.5 |
| 3.12 SSP Student Coordinator | Lidiane Cunha | open | 6.5 |
| 3.13 Co-Curriculum Coordinator | Scott MacDonald | open | 6.5 |
| 3.14 Communications Coordinator | Vacant - will be filled by 2016-17 | open | 6.5 |
| 3.15 CALDO Coordinator (Support 1) | Abiola Sunmonu | open | 6.5 |
| 3.16 ISA by 2017/18 | additional in ssp | open | 6.5 |
| 3.17 Support 3 | additional in iss | open | 6.5 |
| 3.18 Student / Intern 1 | filled summer 2013 (Aymen) | open | 4.0 |
| 3.19 Student / Intern 2 | filled 2013-14 (Ruslan) | open | 4.0 |
| 3.20 Student / Intern 3 | filled 2013-14 (Denis) | open | 4.0 |
| 3.21 Student / Intern 4 | filled 2013-14 (Leo) | open | 4.0 |
| 3.22 Student / Intern 5 | posted summer/fall 2013 (vscp) | open | 4.0 |

**Subtotal** 169.5

**3.0 International Student Services**

| 3.1 Executive Director, Student Programs and Services | Doug Weir | closed | 12.0 |
| 3.2 Associate Director | Kumarie Achaibar-Morrison | closed | 10.0 |
| 3.3 Manager, Sponsored Student Program | Dan Fredrick | closed | 10.0 |
| 3.4 Manager, Visiting Students Program | Gretchen Dubois-Phillips | closed | 10.0 |
| 3.5 VSCP Student Advisor | Rod Loyola | open | 6.5 |
| 3.6 International Student Specialist | Leslie Heirath | open | 6.5 |
| 3.7 International Student Specialist | Lubna Ahmad | open | 6.5 |
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| 3.12 SSP Student Coordinator | Lidiane Cunha | open | 6.5 |
| 3.13 Co-Curriculum Coordinator | Scott MacDonald | open | 6.5 |
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| 3.17 Support 3 | additional in iss | open | 6.5 |
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| 3.20 Student / Intern 3 | filled 2013-14 (Denis) | open | 4.0 |
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| 3.22 Student / Intern 5 | posted summer/fall 2013 (vscp) | open | 4.0 |

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</tbody>
</table>

| 7.0 Other Support Spaces | | | | | | |
| 7.1 Reception Desk for UAI 'Welcome Ambassador’ | | | | | | |
| 7.2 Delegation/Visitor's Meeting Room | | | | | | |
| 7.3 Computer Assistance Area for students | | | | | | |
| 7.4 Staff Kitchen | | | | | | |
| 7.5 Storage Room (Equip, Chair and Events) | | | | | | |
| **Subtotal** | | | | | **159.0** |

**UAI Allocation Total** | **907.5**
## China Institute at the University of Alberta

### Detailed Listing of Current and Space Program Requirements

<table>
<thead>
<tr>
<th>Position</th>
<th>Occupant</th>
<th>Room</th>
<th>No. Occ.</th>
<th>Area NSM</th>
<th>No. Occ. Allow</th>
<th>Area NSM</th>
<th>Type of Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. General Office</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director (reporting directly to Provost)</td>
<td>Gordon Houlden</td>
<td>203L</td>
<td>1</td>
<td>20.9</td>
<td>1</td>
<td>14.0</td>
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</tr>
<tr>
<td>Associate Director</td>
<td>Jia Wang</td>
<td>203K</td>
<td>1</td>
<td>10.0</td>
<td>1</td>
<td>12.0</td>
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</tr>
<tr>
<td>Deputy Director (Academic)</td>
<td>future 2015</td>
<td>n/a</td>
<td>n/a</td>
<td>0</td>
<td>1</td>
<td>12.0</td>
<td>Closed</td>
</tr>
<tr>
<td>Communications Coordinator</td>
<td>Jingjing Zheng</td>
<td>203H</td>
<td>1</td>
<td>4.7</td>
<td>1</td>
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</tr>
<tr>
<td>Administrative Assistant</td>
<td>Qian Tang</td>
<td>203A</td>
<td>2</td>
<td>13.5</td>
<td>1</td>
<td>6.5</td>
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</tr>
<tr>
<td>Administrative Assistant</td>
<td>Megan Yu</td>
<td>203A (sh)</td>
<td>shared</td>
<td>-</td>
<td>1</td>
<td>6.5</td>
<td>Open</td>
</tr>
<tr>
<td>Postdoctoral Fellow</td>
<td>Nong Hong</td>
<td>203J</td>
<td>1</td>
<td>12.1</td>
<td>1</td>
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</tr>
<tr>
<td>Postdoctoral Fellow</td>
<td>future 2014</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>1</td>
<td>6.0</td>
<td>Open</td>
</tr>
<tr>
<td>Research Associate</td>
<td>Ning Cao</td>
<td>203C</td>
<td>1</td>
<td>7.6</td>
<td>1</td>
<td>6.0</td>
<td>Open</td>
</tr>
<tr>
<td>Research Associate</td>
<td>Ruotao Tang</td>
<td>203D</td>
<td>1</td>
<td>7.5</td>
<td>1</td>
<td>6.0</td>
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</tr>
<tr>
<td>Research Associate</td>
<td>Heather Schmidt</td>
<td>203M</td>
<td>2</td>
<td>15.7</td>
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<td>6.0</td>
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<tr>
<td>Research Associate</td>
<td>Yongjie Wang</td>
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<td>0.0</td>
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</tr>
<tr>
<td>Future R.A.</td>
<td>future 2015?</td>
<td>203Q</td>
<td>shared</td>
<td>7.5</td>
<td>1</td>
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<tr>
<td>Senior Research Fellow (hotelling space)</td>
<td>Ron McIntosh</td>
<td>241 (sh)</td>
<td>3</td>
<td>30.2</td>
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</tr>
<tr>
<td>Senior Research Fellow (hotelling space)</td>
<td>Ken Sunquist</td>
<td>241 (sh)</td>
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<td>0</td>
<td>1</td>
<td>6.0</td>
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<tr>
<td>Senior Research Fellow (hotelling space)</td>
<td>Robert Wright</td>
<td>241 (sh)</td>
<td>shared</td>
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<td>1</td>
<td>6.0</td>
<td>Open</td>
</tr>
<tr>
<td>Hoteling for Research Associates/Visiting Scholars</td>
<td>future 2015</td>
<td>239</td>
<td>3</td>
<td>22.1</td>
<td>3</td>
<td>6.0</td>
<td>Open</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
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<td>151.8</td>
<td>141.5</td>
<td>18.0</td>
<td></td>
</tr>
</tbody>
</table>

20 of 38
### B. Support Spaces

- **Meeting Room** (to use shared meeting space, see Japan Centre)
- **Copy Area**
- **Kitchenette/Work Room/Storage** (to be shared with other institutes)
- **Waiting Area for 3 people**

<table>
<thead>
<tr>
<th>Position</th>
<th>Existing Space in Telus</th>
<th>Projected Need (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Room No.</td>
<td>No. Occ.</td>
</tr>
<tr>
<td></td>
<td>203R</td>
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</tr>
<tr>
<td></td>
<td>203S</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>203</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Program requirements are independent of physical space.
2. Level 1 Meeting rooms and Event Space to be shared building-wide
3. All final space requirements to be confirmed and signed off by the China Institute.
## Prince Takamado Japan Centre for Teaching and Research

### Detailed Listing of Current and Space Program Requirements

<table>
<thead>
<tr>
<th>Position</th>
<th>Occupant</th>
<th>Existing Space in Telus Room</th>
<th></th>
<th></th>
<th></th>
<th>Projected Need (2018)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Type of Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. General Office</td>
<td></td>
<td>No.</td>
<td>Occ.</td>
<td>Area NSM</td>
<td>No.</td>
<td>Unit</td>
<td>Occ.</td>
<td>Area NSM</td>
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<tr>
<td>Director</td>
<td>Kaori Kabata</td>
<td>203W</td>
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<td>12.5</td>
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<tr>
<td>Administrative Assistant</td>
<td>Caelan Marr</td>
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<tr>
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<td>B. Support Spaces</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Copy Area (shared with India Institute)</td>
<td>203R</td>
<td>1</td>
<td>7.5</td>
<td>1</td>
<td>8.0</td>
<td>8.0</td>
<td>Open</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchenette/Work Room/Storage (shared, see China Institute)</td>
<td>203S</td>
<td>20.1</td>
<td>12</td>
<td>2.4</td>
<td>28.8</td>
<td>Closed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Meeting Space (shared with India Institute)</td>
<td>n/a</td>
<td></td>
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<td>36.8</td>
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</table>

**TOTAL DEPARTMENT** | **55.3** | **57.3** |

**Notes:**
1. Program requirements are independent of physical space.
2. Level 1 Meeting rooms and Event Space to be shared building-wide
## India Institute

### Detailed Listing of Current and Space Program Requirements

<table>
<thead>
<tr>
<th>Position</th>
<th>Occupant</th>
<th>Existing Space</th>
<th>Projected Need (2018)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Room No.</td>
<td>Area No.</td>
</tr>
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<td>A. General Office</td>
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</tr>
<tr>
<td>Director</td>
<td>using faculty office</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Administrative Assistant</td>
<td>future</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Support Spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copy Area (shared, see Japan Centre)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchenette/Work Room/Storage (shared, see China Institute)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Small Meeting Space (shared, Japan Centre)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL DEPARTMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

1. Program requirements are independent of physical space.
2. Level 1 Meeting rooms and Event Space to be shared building-wide
7.2 Appendix B: Related Floor Plans

Please see the following floor plans:

- Existing Space Allocation Diagrams,
- Proposed Space Allocation Diagrams,
- Program Fit for UAI, and
- Occupancy Movement Diagrams
STEPS

STEP 1:
- Move Library Services & Information (all) **OUT** of suite 5-02, Cameron Library.
- Move Library Services & Information (HR/Personnel, Facilities, NEOS & Copyright) **IN** to suite 5-07, Cameron Library.
- Move Library Services & Information (Aquisitions) **IN** to open area on 5th floor, Cameron Library.

STEP 2:
- Renovate suite 5-02, Cameron Library (for CTL).

STEP 3:
- Move Centre for Teaching & Learning (CTL) **OUT** of rooms 131 thru 139 & suite 1-40, Telus Centre.
- Move CTL **OUT** of room 2-39, Telus Centre.
- Move CTL **IN** to renovated suite 5-02, Cameron Library.

STEP 4:
- Move China Institute **OUT** of rooms 240 & 241, Telus Centre.
- Move University of Alberta International (UAI) **OUT** of rooms 214 thru 222, Telus Centre.
- Move Information Services & Technology (IST) **OUT** of suite 201, Telus Centre.
- Move China Institute **IN** to rooms 137 & 139, Telus Centre (temporary decant).
- Move UAI **IN** to Level 2 HUB Mall.

STEP 5:
- Renovate northeast side of Level 2, Telus Centre for UAI.
- Renovate suite 140, Telus Centre for UAI Advising Rooms.
- Renovate suite 201 for Japan Centre and other international institutes.

STEP 6:
- Move Japan Centre **OUT** of rooms 203B & 203W, Telus Centre.
- Move Japan Centre (and other institutes) **IN** to suite 201, Telus Centre.
- Move China Institute **OUT** of rooms 137 & 139, Telus Centre.
- Move China Institute **IN** to rooms 203B & 203W, Telus Centre.
- Move UAI **OUT** of Level Three, Enterprise Square.
- Move UAI **OUT** of Level One, HUB Mall.
- Move UAI **OUT** of Level Two, HUB Mall
- Move UAI **IN** to northeast side of Level 2, Telus Centre.
- Move UAI Advising Rooms **IN** to Suite 140, Telus Centre.
### 7.3 Appendix C: Other Background Information

#### 7.3.1 Projected Numbers of Participants to Annual UAI Events

<table>
<thead>
<tr>
<th>Department</th>
<th>Activity/Event</th>
<th>Participants (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Student Services (ISS)</td>
<td>Daily advising and services</td>
<td>5,000</td>
</tr>
<tr>
<td>ISS</td>
<td>Workshops (~25/year)</td>
<td>500</td>
</tr>
<tr>
<td>ISS</td>
<td>Volunteer training (~8/yr)</td>
<td>320</td>
</tr>
<tr>
<td>ISS</td>
<td>Programming (3-5/week)</td>
<td>4,784</td>
</tr>
<tr>
<td>Education Abroad Program (EAP)</td>
<td>Daily advising and services</td>
<td>2,500</td>
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<tr>
<td>EAP</td>
<td>Go Abroad Fair</td>
<td>1,000</td>
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<tr>
<td></td>
<td>Pre-departure orientation</td>
<td>1,000</td>
</tr>
<tr>
<td>U-ARE orientations</td>
<td></td>
<td>225</td>
</tr>
<tr>
<td>U-ARE Certificate Ceremonies</td>
<td></td>
<td>160</td>
</tr>
<tr>
<td>U-ARE poster symposium sessions</td>
<td></td>
<td>325</td>
</tr>
<tr>
<td>EA Info Sessions</td>
<td></td>
<td>1,600</td>
</tr>
<tr>
<td>EA Returned Student Poster Symposium</td>
<td></td>
<td>175</td>
</tr>
<tr>
<td>EA Returned Student Conference</td>
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<td>200</td>
</tr>
<tr>
<td>Global Education Program (GEP)</td>
<td>I-Week</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>Films, panel discussions, etc. (~1/week)</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Info sessions/ consultations</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Orientation and meeting space for International House residents</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Intercultural communication training</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Certificate in International Learning</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>International House hosts World Music Cafes (community concerts)</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>i.e. mid-autumn festival, Asian New Year, etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>International Week volunteer appreciation</td>
<td>100</td>
</tr>
<tr>
<td>Program</td>
<td>Activity</td>
<td>Cost</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>International Relations and Recruitment (IRR)</td>
<td>Delegations &amp; visits (60/year)</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>International Faculty and Staff Development Program – which runs for 12 weeks per group of trainees</td>
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</tr>
<tr>
<td>Sponsored Students Program (SSP)</td>
<td>Orientation for new sponsored students</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Focus group workshops with sponsored student cohorts</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Sponsor visits</td>
<td>50</td>
</tr>
<tr>
<td>Visiting Student Program (VSP)</td>
<td>Non-academic seminars, workshops and orientations</td>
<td>150</td>
</tr>
<tr>
<td>In collaboration with departments, centres and institutes across campus</td>
<td>Events and meetings dealing with international topics, such as events with China Institute, Wirth Institute, Middle-Eastern and Africa Studies, etc.. President’s International Lecture Series.</td>
<td>2,500</td>
</tr>
<tr>
<td>Total Participants</td>
<td></td>
<td>27,000</td>
</tr>
</tbody>
</table>
7.3.2 Excerpts from Dare to Discover and Dare to Deliver Regarding: Internationalization, Research Support and Student Experience

“Dare to Discover: A Vision for a Great University,” outlines the University of Alberta’s values, vision and mission. The vision is based on four cornerstones:

1. Talented people,
2. Learning, Discovery, and Citizenship
3. Connecting Communities
4. Transformative Organization and Support

Dare to Deliver 2011-2015, the Academic Plan for the University of Alberta, expands on the four cornerstones, outlining specific framework and strategies to help guide the University in achieving its vision. It includes the following key strategic concepts that support the vision to transform the Telus Centre into an International Centre:

- **Welcome Centers**: Supporting the creation of physical and virtual welcomes centres for students and alumni (Page 4).
- **Recruitment**: Recruiting exceptional students, staff and faculty, locally, nationally and internationally (Page 4).
- **Research Culture**: Fostering a collegial research culture that attracts and engages undergraduate and graduate students, post-doctoral fellows and faculty to extend the frontiers of knowledge within and across disciplines (Page 4).
- **Leadership and Citizenship Values**: Cultivating Canadian citizenship values of engagement, equality, respect, diversity and community across the University and beyond (Page 7).
- **Advising and Mentorship**: Creating a seamless advising infrastructure for all students across the University (Page 8).
- **Research Constellations**: Encouraging scholars to establish innovative research networks within and across faculties, as well as nationally and internationally, particularly in areas of existing and emerging strength (Page 8).
- **International Expertise**: Strengthening international and intercultural dimensions in teaching and learning in curricular and extra-curricular programming, to prepare students for an increasingly international and intercultural range of career opportunities (Page 9).
- **Global Engagement**: Cultivating a body of globally engage students, alumni and faculty who understand the diverse historical and cultural perspectives of current international issues and relationships and are able to work with integrity and purpose within globalized contexts (Page 9).
• *International scholars:* Celebrating the presence of international students and faculty on our campuses and assisting them with the best possible support for their success and wellbeing (Page 9).

• *International Research:* Nurturing strong international research linkages, collaborations and consortia (Page 10).

• *Social Spaces:* Encouraging the development of social spaces on our campuses that promote interaction and collaboration among members of the University community (Page 10).

• *International Student Services:* Easing the transition for international students into the University of Alberta, and assisting them throughout their programs (Page 13).
OUTLINE OF ISSUE

Agenda Title: Saskatchewan Drive Students’ Residence – Design Development Report

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 Saskatchewan Drive Students’ Residence – Design Development Report (as set forth in Attachment 2) as the basis for further engineering and development of contract documents.

Item

<table>
<thead>
<tr>
<th>Action Requested</th>
<th>Approval</th>
<th>Recommendation</th>
<th>Discussion/Advice</th>
<th>Information</th>
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<td>Proposed by</td>
<td>Doug Dawson, Executive Director, Ancillary Services, Facilities and Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presenters</td>
<td>Doug Dawson, Executive Director, Ancillary Services, Facilities and Operations; Kelly Hopkin, Senior Campus Planner (Architecture), Office of the University Architect, Facilities and Operations; Anastasia Lim, Executive Director, University Relations; and Martin Jones, Principal, GEC Architecture</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Subject</td>
<td>Saskatchewan Drive Students’ Residence – Design Development Report</td>
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Details

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Vice-President (Facilities and Operations)</th>
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<tbody>
<tr>
<td>The Purpose of the Proposal is (please be specific)</td>
<td>This project will increase the amount of purpose-built student housing on campus in alignment with the University’s goal of accommodating 25% of students in residence housing. Students who reside in purpose-built on-campus housing with supportive programming tend to have a more fulfilling and enriching academic experience at the University than those who do not. Expanding on-campus housing assists the University in meeting institutional goals and objectives by providing a learning environment conducive to personal and academic success. Providing smart growth development enhances community building, student life, and campus experience while reducing greenhouse gas emissions. The development will be a financially-viable project that will enhance the residence portfolio through resource stewardship and reduce deferred maintenance cost.</td>
</tr>
<tr>
<td>The Impact of the Proposal is</td>
<td>The University proposes to construct 143 new student spaces in a multi-purpose building on Saskatchewan Drive between 110 Street and 111 Street in ECV. This development will be a multi-purpose residential building featuring bedroom configurations of one and two bedrooms. The residence will have common areas, a dining hall, and the appropriate amount of amenity and programmable space to deliver support services and host lectures. In order to foster a sense of community, students will take meals together in a dining hall (meal plan) to be designed as a “flex” space able to accommodate guest speakers and host functions. A total of seven (7) houses along Saskatchewan Drive between 110 and 111 Streets will be removed to accommodate this development. All students and faculty affected by the construction will be accommodated elsewhere within the institutional building inventory. The proposed residence will contribute 9.6% additional beds towards the 1500 bed full build out of the ECV district. A total of seven (7) houses (11025, 11029, 11039, 11045 and 11051 Saskatchewan Drive and 11044 and 11050 – 90 Avenue) between</td>
</tr>
</tbody>
</table>
Saskatchewan Drive and 90 Avenue and between 110 Street and 111 Street will be impacted as per the Preservation Plan and Sector Plan.

<table>
<thead>
<tr>
<th>Replaces/Revises (eg, policies, resolutions)</th>
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<td>Initial Concept Design – September, 2013 to February, 2014; Schematic Design (now approved) to the GFC Facilities Development Committee – February 27, 2014; Design Development (for approval) to the GFC Facilities Development Committee – May 22, 2014; Construction Start – Fall, 2014; Occupancy – September 2016</td>
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<td>Estimated Cost</td>
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<td>Sources of Funding</td>
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<td>Notes</td>
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**Alignment/Compliance**

**Alignment with Guiding Documents**

*Dare to Discover; Academic Plan (Dare to Deliver); Preservation Plan; Long Range Development Plan (LRDP); University of Alberta Comprehensive Institutional Plan (CIP)*

**Compliance with Legislation, Policy and/or Procedure Relevant to the Proposal (please quote legislation and include identifying section numbers)**

1. **Post-Secondary Learning Act (PSLA):** 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)). 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.” 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 […]” Section 67(1) of the Act governs the terms under which university land may be leased.

2. **GFC Facilities Development Committee (FDC) Terms of Reference – Section 3. Mandate of the Committee:** “[…]

2. **Delegation of Authority**

Notwithstanding anything to the contrary in the terms of reference above, the Board of Governors and General Faculties Council have delegated to the Facilities Development Committee the following powers and authority:

**A. Facilities**

1. To approve proposed General Space Programmes (Programs) for academic units.

2. (i) To approve proposals concerning the design and use of all new facilities and the repurposing of existing facilities and to routinely report these decisions for information to the Board of Governors.

   (ii) In considering such proposals, GFC FDC may provide
advice, upon request, to the Provost and Vice-President (Academic), Vice-President (Facilities and Operations), and/or the University Architect (or their respective delegates) on the siting of such facilities. (GFC SEP 29 2003)

B. Other Matters

The Chair of FDC will bring forward to FDC items where the Office of the Provost and Vice-President (Academic) and/or the Office of the Vice-President (Facilities and Operations), in consultation with other units or officers of the University, is seeking the advice of the Committee.

[…]"

3. UAPPOL Space Management Policy and Space Management Procedure: The respective roles of GFC FDC and the Vice-President (Facilities and Operations) with regard to institutional space management are set out in this Board-approved Policy and attendant Procedure.

To access this policy suite on line, go to: www.uappol.ualberta.ca.

4. UAPPOL Preservation of University Facilities and Grounds Policy: The University of Alberta is committed to preserving its history while planning for the continued growth and expansion that facilitates its mission and vision.

To access this policy suite on line, go to: www.uappol.ualberta.ca.

Routing (Include meeting dates)

Consultative Route (parties who have seen the proposal and in what capacity)

- March, 2005 to September, 2008 – 12 facilitated community dialogues with Garneau resulting in the creation of the Design Guidelines for Infill Development
- Open House Sector 7 and 8 Sector Plans – March 19, 2012
- Formalization of Sector Plans for Sectors 7 and 8 – March 28, 2013
- Garneau Community League Focus Group per East Campus Village Implementation Plan – September 16, 2013
- GFC Facilities Development Committee per East Campus Village Implementation Plan – October 24, 2013
- Residence Life and Residence Operations per East Campus Village Implementation Plan – November 12, 2013
- Ancillary Services met with the University of Alberta Students’ Union and Graduate Students’ Association on January 8, 2014
- University of Alberta’s Internal and External Community Open Houses per East Campus Village Implementation Plan for substantial development – January 8, 2014
- GFC Facilities Development Committee per East Campus Village Leadership Residence and Proposed Preliminary Functional Program and Concept Plans – (For Discussion) – January 30, 2014
- Leadership Residence Project Steering Committee – February 12, 2014
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<th>Approval Route (Governance) (including meeting dates)</th>
<th>GFC Facilities Development Committee – May 22, 2014 (for final approval of the proposed Saskatchewan Drive Students’ Residence – Design Development Report)</th>
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<tr>
<td>Final Approver</td>
<td>GFC Facilities Development Committee</td>
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Attachments:
1. Attachment 1 (pages 1 – 3) - Briefing Note

*Prepared by:* Kelly Hopkin, Senior Campus Planner (Architecture), Office of the University Architect, Facilities and Operations, kelly.hopkin@ualberta.ca
Background

University historical data indicates that at no time in the last 10 years has the demand for on-campus residence beds been met. In fact, between 2007 and 2011, the number of applicants has exceeded 5,000. Due to the number of returning students each term there are only approximately 2,500 spots available.

The University of Alberta is proposing to build a cohort student residence focusing on leadership development. The university proposes to construct 143 new student spaces in a multi-purpose building on Saskatchewan Drive between 110 Street and 111 Street in East Campus Village (ECV).

This building has a courtyard typology with an interior perimeter corridor. The massing of the building has been enhanced to reflect a change to the reorganization of the buildings cohort groupings from 12 groupings of 12 students to 13 groupings of 11 students in bedroom configurations of one and two bedroom units. The buildings incorporate appropriate amounts of amenity or programmable space required to deliver support services for students, and host lectures and special events in the evenings and on weekends. In order to foster a sense of community, students will take meals together in a dining hall (meal plan) which has been designed as a “flex” space able to accommodate guest speakers and host functions.

A total of seven houses along Saskatchewan Drive between 110 and 111 Streets will be removed to accommodate this development. All students and faculty affected by the construction have been accommodated elsewhere within the institutional building inventory. The building represents a 9.6 per cent increase towards the targeted 1,500 bed spaces allocated within the ECV district.

No additional parking provisions would be required beyond current surface lots between 111 and 110 Streets (Lots 87, 88 and 89). Furthermore, Lot U (the south east portion of the large surface lot east of HUB) is dedicated to visitor parking, capacity 224 stalls, and there is also visitor capacity on 90 Avenue.

Issues

The University is proposing to construct a new student residence building in the ECV district. The building will be located on an existing lot currently occupied by seven homes which will be removed as part of the Preservation Plan for Sector 8. The new building will align with the ECV Design Guidelines for Infill Development. The development will be an innovative new building typology to support an innovative program without constraining property lines. The residence will provide pleasant and commodious interior design including welcoming entrances, natural light and functional social spaces for residents; integrating them with active outdoor spaces for the wider university community. The new residence will anchor and further develop the ECV into an inviting, walkable, student focused and vibrant neighbourhood connecting the campus to adjoining amenities.

The proposed design development includes 143 bed spaces in one and two bedroom configurations, common areas include; a main floor, common living room and social spaces on the residential floors, large laundry, quiet study area, and a large inspirational space (City Room) with video conferencing capabilities,
for social gatherings, lectures and seminars. Also included are outdoor amenity space, large and flexible dining hall, fitness and recreation rooms, conference room and other programmable space to build community and deliver support services to students.

The schematic design report was completed in February 2014, with the final report approved by the General Faculties Council (GFC) Facilities Development Committee (FDC) on February 27, 2014. During the design development phase, the design team met with the Project Steering Committee on a bi-weekly schedule to confirm user requirements, review design progress, and confirm technical requirements. Additional meetings were held with key stakeholder groups to review specific aspects of the project such as the Energy Management Program managers, Aramark (the university's current food service provider) and the university's utilities department.

In the course of the February 2014, schematic design presentation to FDC, the Committee had comments on the detailed design of the Saskatchewan Drive Residence and asked the Project Team to review the following:

**Confirmation of the need for a Fitness Area**
The Project Team consulted with Residence Services and Operations, and determined that the Fitness Area is a required program element to enhance the student residence experience, and promote health and wellness. Past experience and survey have indicated that modest fitness amenities within student residences are highly desired by potential occupants and help to distinguish the Ancillary Student Housing portfolio in the market.

**Café addition to invite public into the Residence**
The Project Team consulted with Residence Services and Operations, and determined that a café was not warranted at this time and that a ‘Provisions on Demand’ (POD) kiosk will be provided adjacent to the main entry lobby. There is nothing in the current design that precludes the accommodation of a café in the future. The Project team is currently looking at fridge and microwave capacity in the student residence rooms.

**Location of loading, and waste/recycling collection**
The location of the loading and waste/recycling collection areas have to remain co-located adjacent to the food service functions. The design of this space has been improved with the addition of both hard and soft landscaping. A hard surfaced plaza space has been incorporated into the entrance to create a formal entry forecourt along 90 Avenue and also provides paving for vehicular movements. Additionally, efforts have been made to improve the relationship of the waste and recycling entries such that they angle away from the courtyard entrance and reduce their impact on pedestrian movements. Waste containers will be housed inside the facility until disposal.

**Width of courtyard entry on 90 Avenue**
The courtyard entry along 90 Avenue has been widened through a reduction in the number of guest suites and structural support columns removed to create a more inviting entry for the surrounding community. An exterior fireplace in the courtyard has been located on axis with the 90 Avenue opening into the courtyard.

**Consideration of acoustics from Social Spaces to adjacent suites**
The design of the social spaces has been refined to include wooden barn door entries with associated glazed sidelights. This allows a level of acoustical privacy when required while still maintaining a visual connection.
Functional operations of City Room
The City Room and associated rooftop terrace have been reoriented on the fifth floor as part of the design development. This placed the rooftop terrace on the western corner of the fifth floor and shifted the City Room to the east. This reorientation allowed for the inclusion of a new pre-function area and coat closet to better service special events. This also allowed the City Room to expand and fill the width of the fifth floor creating a more functional space while also providing views into the central courtyard. Dedicated storage space has been allocated in the basement to service the City Room which is accessible directly from the elevators.

Focus on inviting Community into the Residence
The Main Building Entry on the northwest corner of 111 Street and the mid-block entry on Saskatchewan Drive (special event access to the Dining Hall) will feature up lighted canopies. Entrance openings into the courtyard at the south west corner and mid-block along 90 Avenue will feature warm coloured wood soffits that are also illuminated and welcoming in the winter and evenings. The main floor is ‘public friendly’ to the extent possible to maintain a balance between residence security and accommodate a variety of anticipated public functions and cohort interactions.

Recommendation
THAT the GFC Facilities Development Committee approve the proposed Saskatchewan Drive Students’ Residence – Design Development Report.
Executive Summary

This report summarizes the Design Development phase of the Saskatchewan Drive Residence. The Design Development refines the technical requirements as well as building system integration against approved priorities and program objectives. Key deliverables for the Design Development of the Saskatchewan Drive Residence include:
- 143 student residence beds in 1 and 2 bed unit configurations
- Residence units are arranged in 13 cohort groups of 11 students
- A Dining Hall that provides seating for 160 students within a flexible space that supports a variety of programming options.
- A fifth floor City Room to accommodate events, lectures, presentations and receptions.
- Meet the University of Alberta's accessible and safety standards.
- Meet a Green Globe, 4 globes sustainability standard.

The Architectural Guiding Principles and Design Principles that were established in collaboration with the Project Steering Committee continue to inform the Design Development. The Architectural Guiding Principles include:
- Engaging the Identity of a Place
- Interpreting the Context
- Creating a Third Place: Activate Community Building
- Transcending the Present: Traditional and Modern

Project Steering Committee

A Project Steering Committee was established in the Schematic Design Phase to provide input and direction to the design team. The design team continued to meet with the Project Steering Committee during the Design Development phase on a bi-weekly basis to confirm user requirements, review design progress, and confirm technical requirements. The Project Steering Committee’s roles and responsibilities, as defined in the Project Charter are:
- Ensure the project scope aligns with the agreed requirements of the project sponsor and key stakeholder groups
- Provide those directly involved in the project with guidance on project issues
- Ensure efforts and expenditures are appropriate to stakeholder expectations
- Take on responsibility for the project achievement of outcomes
- Address any issue which has major implication for the project
- Manage project scope and if issues emerge propose changes to be considered
- Ensure that strategies to address potential risks have been identified and mitigation plans provided
- Ensure that compliance with governance is maintained
- Reconcile differences in opinions, approach and resolve disputes arising from them
- Report on project progress as deemed required
- Escalate issues to appropriate levels if and when required
- Support committee members and project inputs

The Project Steering Committee is comprised of the following representatives, whose valuable contribution to the Design Development of the Saskatchewan Drive Residence is acknowledged and greatly appreciated.

Project Steering Committee

Todd Werre, Director, Project Management Office, P&PD (Chair)
John Ferguson, Project Sponsor
Doug Dawson, Executive Director, Ancillary Services
Terrence Sperling, Associate Director, Residence Operations, Ancillary Services
Sarah Wolgemuth, Assistant Dean of Students (Residence Life)

Joshua Le, Vice-President, Operations and Finance, Students’ Union
Marc Dumschul, General Manager, Students’ Union
Kelly Hopkins, Senior Campus Planner, Office of the University Architect, P&PD

Design Team

Peter Osborne, Partner (GEC Architecture)
Martin Jones, Partner (GEC Architecture)
Julian Wylie, Intern Architect (GEC Architecture)
Lacey Pearn, Intern Designer (GEC Architecture)
Ian Boyle, Structural Engineer (Fast + Eppl)
Patrick Fleming, Mechanical Engineer (KFR Engineering)
Derek Ciezki, Electrical Engineer (SMP Engineering)
Janet Rosenblum, Landscape Architect (Janet Rosenblum & Studio)
Paul Swal, Civil Engineer (Urban Systems)
Jim Little, Food Service Consultant (Chin Little)

Pre-construction Advisors

Terry Kirstick (Chandos)
Randy Dupree (Chandos)

Program

Space program elements have been refined during the Design Development phase and have resulted in an overall net programmed area and total gross area decrease as compared to the Schematic Design space program. The building’s net to gross efficiency has also been improved as part of the design progress. This is primary due to the reorganization of residence suites into 13 cohort groupings of 11 students, which allowed for an overall reduction in the building footprint while maintaining the original design intent.

The general allocation of program elements has remained consistent with the Schematic Design Report. The main floor remains primarily an amenity level with direct connections to the main and second floors. The two amenity levels have been expanded along 111th Street to accommodate the additional cohort grouping. Finally, the fifth floor remains dedicated programatically to the City Room and its associated support spaces.

Site Design

Plan design remains consistent with the Schematic Design. The landscape plan continues to see the river valley ecology wrap up from the banks of the North Saskatchewan River around and through the central courtyard. The reduced footprint of the Saskatchewan Drive Residence has allowed the building to be set further back from Adair Park and Saskatchewan Drive. This has allowed for improved streetscapes and landscape connections to Adair Park. Similarly, the mid-block courtyard access along 90th Avenue has been further developed. The entry condition has been widened, structural column supports have been removed, and the opening has been better aligned with the proposal mid-block pedestrian pathway through the East Campus Village.

In addition, the loading and waste collection areas along 90th Avenue have been integrated with a new hard surfaced plaza that has a dual function as a forecourt to the mid-block entry as well as a surface for vehicular movements.

Building Design

The Saskatchewan Drive Residence continues to be organized around a central courtyard which has been designed to create a sense of community for the students who live in the residence as well as function as a neighbourhood amenity for students within East Campus Village. The design responds to the East Campus Village Design Guidelines for Infill Development, and the Sector 8 Sector Plan.

The interior design concepts were further developed during the Design Development phase, and include material and furniture selections as well as interior partition assembly elements. The interior design concepts were largely informed by Marion Kirby Alexander’s original inspiration for the University of Alberta’s two official colours: green and gold. Like the design of the Saskatchewan Drive Residence, Marion drew her inspiration from Edmonton’s river valley, prairie landscape and golden harvest fields. The design is a balance between providing consistent unified design elements with variable elements to define cohort groupings and personalizable student space.

The Saskatchewan Drive Residence suite design continues to support social interaction, academic achievement and helps foster a sense of community amongst residents. The Design Development of the suite residence focused on technical outcomes and included a detailed review of interior partition assemblies. This is critical step in the design as the accumulative effects of late changes to partition thicknesses can have a significant impact on the overall building footprint or the integration of building systems.

The building envelope’s technical and aesthetic parameters have been established with an emphasis on durable, low-maintenance materials. Specific exterior assemblies have been confirmed in conjunction with the energy model to ensure they respond to the project’s energy targets and the reimburseable reviews.

Sustainability

The Saskatchewan Drive Residence is targeting Green Globes certification with a focus on incorporating durable, reliable, proven and cost effective sustainable strategies and technologies. The design team is working with the University’s Energy Management Program to identify various sustainable strategies that are eligible for funding.

Structural

The Design Development phase has refined the integration of the structural framing plan with the architectural layouts. This included finalizing a strategy to transfer structural framing from the second floor and main floor architectural layouts. Through review of the geotechnical report, foundations were able to be reduced and we were able to proceed with strip footings for basement areas and slabs on-grade for areas of the main floor that do not have a basement below.

Mechanical

The mechanical systems have been further developed and refined to a single mechanical room in the basement of the Saskatchewan Drive Residence. Main distribution strategies were coordinated with architectural ceiling heights, and riser size and locations were confirmed and incorporated into student residence suite designs.

Electrical

The development of the electrical system through this phase of the project focused on the selection of lighting both interior and exterior, and the location and size of electrical and communication rooms. AV/IT infrastructure has been proposed for amenity spaces throughout the Saskatchewan Drive Residence to provide a high level of connectivity.

Next Steps

Continued design progress is required on a select scope of work as the project moves forward into the next stage of detailed design. These include:
- Refining the food service technical and operational requirements through continued consultation with the University’s food service provider
- Conduct a Crime Prevention Through Environmental Design review
- Refine and confirm the AV/IT strategies
1.0 Project Charter and Deliverables

1.1 Introduction

The following report is intended to document the Design Development phase for the Saskatchewan Drive Residence. The Design Development phase is largely a technical advancement of the project to refine the design intent of the Schematic Design. The main focus of the exercise is to work within the design intent staying true to the Project’s Architectural Guiding and Design Principles to integrate building systems and complete a detailed analysis of proposed building materials and assemblies.

The Saskatchewan Drive Residence continues to provide an impactful, and intentional residential experience utilizing a cohort housing model. A diverse set of program elements that provide a wide range of student oriented amenity and support spaces will help foster positive social interaction, academic achievement and establish a sense of community.

The Saskatchewan Drive Residence approach to building form, massing and site planning remains consistent with the Schematic Design with a reduced area of 7,925 gross square meters.

The overall plan and program distribution for the Saskatchewan Drive Residence is consistent with the Schematic Design Report. A courtyard building typology and perimeter corridor remain the defining characteristics of the building’s massing. The massing has been refined in response to a reorganization of the building’s cohort groupings from 12 groupings of 12 students to 13 groupings of 11 students. While this has provided an overall reduction in the building footprint it has also added an additional cohort grouping which has been located on the fourth floor along 111th Street. The massing along 90th Avenue remains lower at three stories to respond to its relationship with existing and proposed urban plaza space that forms a gateway to the Campus. Secondary entries are located along Saskatchewan Drive to allow for special event access to the Dining Hall, and entries along infill nature of the East Campus Village. The Dining Hall remains adjacent to Adair Park and provides the lower single story massing.

The main building entry remains located along 111th Street adjacent to a proposed new plaza that forms a gateway to the Campus. Secondary entries are located along Saskatchewan Drive to allow for special event access to the Dining Hall, and entries are located within the courtyard space to allow students to engage this community amenity space. Guest and Faculty Suites located on the main floor continue to have at-grade front entries to engage with and support the infill residential nature of the East Campus Village.

The City Room remains as the single program use on the fifth floor to provide a flexible space for social gatherings, lectures and seminars. Located on the northwest corner block of the fifth floor, its location will enjoy panoramic views of the North Saskatchewan River Valley and Edmonton’s Downtown. An outdoor terrace is located on the northwest corner adjacent to a pre-function space and provides overflow for social gatherings or an informal social space during regular operations.

1.2 Goals

The project goals established by the University of Alberta remain consistent as stated in the Schematic Design Report, and include:

- Support the University’s goal of accommodating twenty five percent of the University’s student oriented housing in the central courtyard.
- Support students’ academic success, leadership development, engagement, recruitment, retention and enduring relationship with Alma Mater with a new attractive cohort residential and operational programs.
- Implement sector plan guidelines and provide smart growth development – reduce greenhouse gas, integrated neighborhood and enhance livability.
- Build a financially viable project to enhance the University’s residence portfolio per resource stewardship while reducing deferred maintenance costs.

Architectural Guiding and Design Principles established early in the design process continue to inform the design development of the Saskatchewan Drive Residence. The project continues to “Engage the Identity of a Place” and “Interpret Context” through connections to the North Saskatchewan River Valley, the North Campus and East Campus Village embodied in the project’s landscape and building design. Creating a Third Place that provides quality student oriented spaces is established by the building’s courtyard typology and supported by the amenity focused main floor. The desire that the architecture “Transcend the Present”, balancing traditional and modern aesthetics, continues to be expressed in both the interior and exterior building material selections.

1.3 Design Development Phase

The Schematic Design Report was completed in February 2014 with the final report approved by the Facilities Development Committee (FDC) on February 27, 2014. During the Design Development phase, our team continued to meet with the Project Steering Committee biweekly to confirm user requirements, review design progress, and confirm technical requirements. Additional, meetings were held with key stakeholder groups to review specific aspects of the project such as the Energy Management Program managers, Aramark (the University’s current food service provider) and the University’s utilities department.

In the course of the February 2014 Schematic Design presentation to FDC, the Committee had requested the detailed design of the Saskatchewan Drive Residence and asked the Project Team to follow the review:

Confirmation of the need for a Fitness Area
- The Project Team consulted with Residence Services and Operations, and determined that the Fitness Area is a required program element to enhance the student residence experience, and promote health and wellness. Past experience and survey have indicated that modest fitness amenities within student residences are highly desired by potential occupants.

Café addition to invite public into the Residence
- The Project Team consulted with Residence Services and Operations, and determined that a café was not warranted at this time and that a ‘Provision on Demand’ (POD) kiosk will be provided adjacent to the main entry lobby. There is nothing in the current design that precludes the accommodation of a café in the future.

Location of loading, and waste/recycling collection
- The location of the loading and waste/recycling collection areas have to remain co-located adjacent to the food service functions. The design of this space has been improved with the addition of both hard and soft landscaping. A hard surfaced plaza has been created and intermingled soft landscaping are to continue along 90 Avenue and also provides paving for vehicular movements. Additionally, efforts have been made to improve the relationship of the waste and recycling entries such that they angle away from the courtyard entrance and reduce their impact on pedestrian movements. Waste containers will be housed inside the facility until disposal.

Width of courtyard entry on 90th Avenue
- The courtyard entry along 90 Avenue has been widened through a reduction in the number of guest suites and structural support columns removed to create a more inviting entry for the surrounding community. An exterior Fireplace in the courtyard has been located on axis with the 90 Avenue opening into the courtyard.

Consideration of acoustics from Social Spaces to adjacent suites
- The design of the Social Spaces has been refined to include wooden barn door entries with associated glazed sidelights. This allows a level of acoustical privacy when required while still maintaining a visual connection.

Functional operations of City Room
- The City Room and associated rooftop terrace have been reoriented on the fifth floor as part of the Design Development. This placed the rooftop terrace on the western corner of the fifth floor and shifted the City Room to the east. This reorientation allowed for inclusion of a new pre-function area and cost closet to better service special events. This also allowed the City Room to expand and fill the width of the fifth floor creating a more functional space while also providing views into the central courtyard. Dedicated storage space has been allocated in the basement to service the City Room which is access directly from the elevator.

Focus on inviting community into Main Floor of the Residence
- The Main Building Entry on the NW corner of 111 Street and the mid-block Entry on Saskatchewan Drive (special event access to the Dining Hall) will be marked with up lighted canopies. Entrances openings into the courtyard at the NW corner and mid-block along 90th Avenue will feature warm coloured wood soffits that are also illuminated and welcoming in the winter and evenings. The Main Floor is ‘public friendly’ to the extent possible to maintain a balance between residence security and accommodate a variety of anticipated public functions.

Balance between residents and guests
- As a development from the Schematic Design, the number of guest suites have been reduced but remain located off of 90th Avenue. Guests suites have been designed to be an integrated part of the Saskatchewan Drive Residence, but retain street fronting entrances along 90th Avenue that reflect the infill nature of the East Campus Village. It is anticipated that guests of the Residence will also have access to the Dining Hall and all other main floor amenity spaces. Current design options being reviewed by the project team anticipate conversion of this area into a flexible social space.

Additionally, at the start of the Design Development phase, GEC Architecture led a value analysis workshop which included our full sub-consultant team, BTV the design team’s cost consultant, Chondos Construction our pre-construction advisor, and representatives from Facilities and Operations. Results from this workshop were presented to the Project Steering Committee for direction and approval. The selected strategies helped to provide key direction for the refinement of the Schematic Design.

1.4 Opportunities and Challenges

The following are key opportunities and challenges presented by the Saskatchewan Drive Residence Design Development.

Opportunities
- Innovative new building typology to support an innovative program without constraining property lines
- Provide pleasant and commodious interior design utilizing a cohort housing model while still maintaining a visual connection
- Residential and operational programs are being developed and confirmed
- Balance functionality, flexibility, student life, capital cost, architectural design integrity, operations/maintenance cost and curb appeal
- Distribute a functional program that is necessarily flexible on an irregular site to satisfy design guidelines, sector plan and LRDP
- Exemplifying design excellence in contemporary architectural design vocabulary while being contextual and respecting the character of the Garneau neighbourhood and East Campus Village
- Not negatively impacting the quality of the surrounding natural landscape, including the adjacent City Park

Challenges
- Support an intentional but evolving interdisciplinary cohort community as academic, residential and operational programs are being developed and confirmed
- Support the University’s goal of accommodating twenty five percent of the University’s student oriented housing in the central courtyard
- Support an intentional but evolving interdisciplinary cohort community as academic, residential and operational programs are being developed and confirmed
- Design and develop new building typology to support an innovative program without constraining property lines
- Support the University’s goal of accommodating twenty five percent of the University’s student oriented housing in the central courtyard
2.0 Campus Planning

2.1 Sector Vision & Planning Guidelines

The Saskatchewan Drive Residence resides within Sector 8 or the East Campus Village. Sector 8 will be developed as a vibrant and integrated student-residential neighbourhood, while meeting the student residence needs of the University and respecting the character of the neighbourhood. In order to meet this vision, Sector 8 will include:

- Increased student residences at sufficient densities;
- Minimized vehicular access to and within the Sector;
- Preservation and enhancement of the street and avenue grid network;
- Provide open space of differing types and sizes;
- Provide diversity of residents;
- Support student services in the surrounding neighbourhood;
- Provide affordable housing in terms of capital, operating, maintenance, and student rental; and
- Integration and connectivity between Sector 7 and 8.

These elements will support place-making in a campus context. The University will celebrate the area’s social history and ensure that new development is sensitive to the East Campus Villages aesthetic character and maintains the existing grid system, as well as mature landscaping along corridors.

Development within the Sector must respond to the University of Alberta’s Design Guidelines for Infill Development. The Saskatchewan Drive Residence’s Design Development continues to align with and respond to the Design Guidelines and has been refined to continue to provide a positive addition to the East Campus Village. The project is also accounted for in the East Campus Village Implementation Plan, and has been a part of public consultation related to development in East Campus Village.

River District

The Saskatchewan Drive Residence resides within the River District.

Based on its location and analysis, the River District has been chose as a potential development site for a mixed-use leadership collage, an honours student residence, with housing and support space for 300-400 students and 150-200 residents. It also is well-located near surrounding amenities and could provide excellent views of and connection to the river.

Development Guidelines

- Integrate internally and externally, including 111th Street and Sector 7, the North Saskatchewan River Valley, Adair park and the adjacent East Campus Village Districts through pathway connections, signage, architecture, landscaping and public art.
- Leverage existing parks and open spaces and river valley access points.
- Major node and gathering place.
- Student housing and support space for 300-400 students and 150-200 residents as part of Leadership Collage (Saskatchewan Drive Residence).

Pathways

- 111 Street - "The Urban Boulevard"
  - Support development guidelines from the Sector 7 Plan that enhances 111 Street as a median separated “Urban Boulevard” that integrates east/west corridor nodes, existing and future building edges and streetscape improvements to provide a transition zone and connector between Sector 7 and East Campus Village.
  - Ensure new development along 111 Street in East Campus Village considers Sector 7 development guidelines and redevelopment potential in relation to 111 Street.
  - Retain adequate building setbacks that can be utilized to strengthen north/south pedestrian movement and the urban streetscape.

- 90 Avenue
  - Maintain the streetscape along the south side of 90 Avenue, including setbacks, massing, and boulevard trees.
  - Consider creating a one-way east to limit traffic on 110 Street and service area from 111 Street.

Saskatchewan Drive

- Encourage promenade development along the south side of Saskatchewan Drive to define the boundary of the Campus and to connect scenic viewpoints along the North Saskatchewan River Valley.
- Coordinate with the City of Edmonton the provision of wide boulevard walks for multi-use and site furnishings, signage and public art, and a defined crosswalk across Saskatchewan Drive from the Saskatchewan Drive Residence site.

Draft diagram of key elements of the East Campus Village Implementation Plan.
3.0 Building Code Analysis

Project Background
The Leadership Residence is a student dormitory for 143 students in addition to three potential guest suites and one professor in residence. The building houses dormitory rooms as well as common gathering spaces, a dining hall and a gathering space on the upper level.

- Building Height: 5 storeys + basement
- Building Area: 2,135 square meters.
- Facing three streets
- Non-combustible Construction
- Fully-Sprinklered.

Applicable Building Code
The applicable code document is the Alberta Building Code 2006.

Major Use and Occupancy
- Group A, Division 2 – Assembly Occupancy (Recreation Centre and Library)
- Group C – Residential Occupancy

Occupant Load Calculations
Refer to excel spreadsheet

Classification and Construction Requirements
The major occupancies within the building are A-2 and C. The construction requirements for Group A Division 2 are the same as that for Group C (Per 3.2.2.24); given this the building has been classified per Group C article 3.2.2.43.

The building is classified per Article 3.2.2.43, Group C, up to 6 storeys; Sprinklered.

3.2.2.43. Group C, up to 6 Storeys, Sprinklered.
- The building shall not be greater than 7,200 sq.m. if 5 storeys in building height.
- The building shall be constructed of Non-combustible construction, and
- Floor assemblies shall be fire separations with a fire-resistance rating not less than 1 hour,
- Mezzanines shall have a fire-resistance rating not less than 1 hour,
- Loadbearing walls, columns and arches shall have a fire resistance rating not less than 1 hour.

3.2.14. Heavy Timber Roof Permitted
In a building up to 2 storeys in building height the roof assembly is permitted to be of heavy timber construction, provided the building is sprinklered throughout. Structural members in the storey immediately below the roof assembly are permitted to be of heavy timber construction. Variance to be provided for glulam support in dining hall – this portion of the building is one storey in building height while the remainder of the building is five stories.

Limiting Distance Calculations & Minimum Construction Requirements for Exposing Building Faces
Per Tables 3.2.3.1.C. and 3.2.3.7.

West Face – 11 meters to centre of 111th Street
- Building Face Greater than 150 square meters
- 100% unprotected opening s permitted.
- No fire-resistance rating required.
- Wall can be constructed of combustible or non-combustible construction with combustible or non-combustible cladding.

North Face – 11 meters to centre of Saskatchewan Drive
- Building Face Greater than 150 square meters
- 100% unprotected opening s permitted.
- No fire-resistance rating required.
- Wall can be constructed of combustible or non-combustible construction with combustible or non-combustible cladding.

East Face – 3 meters to property line of park. As no building will be built on park over 10m.
- Building Face 68 square meters.
- 100% unprotected opening s permitted.
- No fire-resistance rating required.
- Wall can be constructed of combustible or non-combustible construction with combustible or non-combustible cladding.

South Face – 18 meters to centre of 90th Avenue.
- Building Face Greater than 150 square meters
- 100% unprotected opening s permitted.
- No fire-resistance rating required.
- Wall can be constructed of combustible or non-combustible construction with combustible or non-combustible cladding.

Fire Separations and Fire Resistance Ratings
- Residential suites shall be separated from each other and the remainder of the building by a fire separation with a 1 hour fire resistance rating as per article 3.3.4.2.1(1). Closures shall be rated 20 minutes per table 3.3.18.10.(1)
- Separation of Major Occupancies: A-2 to C occupancies shall be separated by a fire separation with a 1 hour fire resistance rating per table 3.1.3.1. Closures shall be rated 45 minutes per table 3.1.8.4.
- Public Corridor – as per article 3.3.1.4.(2) public corridors are required to be separated by a fire separation with a fire resistance rating of 45 minutes.
- Exits – as per article 3.4.4.1. exits are required to be separated by a fire separation with a fire resistance rating of 1 hours. Closures shall be rated 45 minutes as per table 3.1.8.4.

Elevator Hoistway – as per Table 3.5.3.1. elevator hoistways are to be separated by a fire separation with a fire resistance rating of 1 hour.
- Vertical Service Spaces – as per article 3.6.3.1. and table 3.6.3.1. vertical services spaces are required to be separated by a fire separation with a fire resistance rating of 45 minutes.
- Janitor rooms – as per article 3.3.1.21.(3) janitor rooms are required to be separated by a fire separation with no fire resistance rating.
- Common Laundry Rooms – as per article 3.3.1.22.(3) common laundry rooms are required to be separated by a fire separation with no fire resistance rating.
- Storage rooms – as per article 3.3.1.26. and 3.3.4.2. storage rooms are required to be separated by a fire separation with a 1 hour fire resistance rating. Closures shall be rated 45 minutes as per table 3.1.8.4.
- Service Rooms – as per articles 3.4.2.1.(1) & (6) service rooms and fuel fired equipment services rooms are required to be separated by a fire separation with a fire resistance rating of 1 hour. Closures shall be rated 45 minutes as per table 3.1.8.4.
Provisions for Fire Fighting

- Access route is required to the principal entrance & must be not less than 3m and not more than 15m from the closest portion of route to face of building, as per 3.2.5.5.
- Access route must have clear width of 6m, centerline radius not less than 12m, overhead clearance of 5m, change of gradient not more than 1:12.5 over 15m, as per 3.2.5.6.
- A fire hydrant is to be located to be not less than 45m from fire department connection, as per 3.2.5.16(1).
- The fire department connection shall be not less than 3m and not more than 15m from the principal entrance, as per 3.2.5.16(3).

Barrier Free Requirements

The building design shall meet the requirements of Section 3.8 - Barrier Free Design.
- Not less than 50% of the pedestrian entrances shall be designed for barrier-free access, as per article 3.8.1.2 as outlined in 3.8.3.3.
- Barrier-free paths of travel shall be designed per article 3.8.1.3.
  - Unobstructed width not less than 920mm.
  - Walking surfaces shall be firm and slip resistant with no opening greater than 13mm in diameter, and be provided with sloped or ramps at changes in level more than 13mm.
  - The width of a barrier-free path of travel that is more than 38m long shall be increased to not less than 1500mm for a length of 1500mm at intervals not exceeding 30m.
- Building controls including switches, intercoms, thermostats, and elevator controls that are intended to be operated by occupants and are located within the barrier-free path of travel shall be mounted between 400 and 1200mm above finished floor as per 3.8.1.5.
- A barrier-free path of travel is not required to service rooms, service spaces, janitor rooms, or roof spaces per 3.8.2.1(2).
- A barrier-free path of travel shall be provided from the entrance to the exterior parking area per 3.8.2.21.
- The parking area shall contain 6 designated parking stalls for use by persons with physical disabilities per Table 3.8.2.2.6 designated parking spaces are provided.
- All doorways in barrier-free path of travel shall have clear width not less than 1000mm, as per 3.8.3.3.
- All washrooms in a barrier-free path of travel shall be barrier-free, as per 3.8.2.3, 3.8.3.8 to 3.8.3.12.
- Applicable to passenger-elevating devices, as per 3.8.3.5.
- At least one shower stall in each group of showers shall be barrier-free (not less than 1500mm wide & 900mm deep), as per 3.8.3.13.
- Public counters shall have at least one barrier-free section not less than 760mm long, not more than 850mm above the floor, as per 3.8.3.14.
- At least one barrier-free drinking fountain, as per 3.8.3.16.

Flame Spread Ratings of Interior Finishes

As per article 3.1.5.10
- Combustible interior wall finishes can’t be more than 25mm thick and have a flame spread rating not more than 150 on any exposed surface.
- Combustible interior ceiling finishes can’t be more than 25mm thick and have a flame spread rating not more than 25 on any exposed surface.
- Fire retardant treated wood in not more than 10% of the ceiling area is permitted to have a flame spread rating not more than 150.

As per article 3.3.1.7.
- Drapes, curtains and other decorative materials, including textiles and films, used in a building shall meet the requirements of the Alberta Fire Code 2006.

Fire Stopping

As per article 3.1.9.1 - Electrical and mechanical service penetrations through fire separations shall be sealed by a fire separation system that has an F rating when tested with CAN/ULC-S115 "Fire Tests of Firestop Systems".
### 4.0 Program Analysis

#### 4.1 Program Status

The following program summary outlines the current status of the space requirements for the Saskatchewan Drive Residence. The current space program is in alignment with the preliminary program requirements provided during the RFP process and builds off of the design progress during the Schematic Design phase.

The overall net programmed area and total gross area has decreased as compared to the Schematic Design space program. This is primarily due to a reorganization of residence suites into 13 cohort groupings of 11 students. This allowed for an overall reduction to the building footprint while maintaining the original design intent.

Several program elements were refined during a value analysis workshop held with the Project Steering Committee. The following is a summary of key program refinements:

- reduce 13 cohort groupings of 11 students. Each cohort grouping will contain 5 two-bedroom suites and 1 one-bedroom suite;
- the Dining Hall area was changed to accommodate seating for 160 people;
- reduce food service and waste management space to align with the revised Dining Hall capacity and food delivery model;
- reduce the Residence Service office requirements to accommodate 1 Residence Service office and 1 Students' Association office;
- reduce the Residential Area office to accommodate a reception area, 2 open offices and a dedicated copy room;
- combine the Residence Service and Administrative Offices into a single area;
- reduce the number of Guest Suites to 1 barrier-free one-bedroom suite and 2 studio suites;
- remove the serving from the fifth floor City Room;
- relocate the City Room storage to the basement;
- reduce the capacity of the City Room to accommodate an 80 person lecture; and,
- reduce the outdoor terrace area on the fifth floor.

#### 4.2 Program Accommodation

The general allocation of program elements has remained consistent with the Schematic Design. The main floor remains primarily an amenity level combining administrative functions with student focused social and dining spaces. The upper residence floors have been reorganized into 13 cohort groupings of 11 students which resulted in an additional cohort grouping needing to be accommodated on the fourth floor along the 119th Street façade. The fifth floor remains dedicated programmatically to the City Room and its associated outdoor terrace space.

Recycling, waste handling and loading areas are located near the mid-block courtyard entrance along 99th Avenue. They are located in close proximity to the food preparation and storage areas for the Dining Hall. It is anticipated that major building loading and storage will occur at Lister Hall with frequent small deliveries to the Saskatchewan Drive Residence. This has helped reduce the size and scale of the loading and garbage areas to align with the residential scale of the East Campus Village.

The following drawings illustrate the general distribution of program elements through the building.
Second Floor Plan

Building/Residence/Administration
Program/Student Social/Amenity Space
Faculty Guest Suites
1 Bedroom Suite
2 Bedroom Suite
Vertical Circulation
Building Services

1-Bedroom (Barrier Free)
24 m²

Laundry/Waiting Area 27m²

Social Space 39m² each
194m² total

1-Bedroom
18m² each
72 m² total

2-Bedroom
32m² each
792m² total

Communications Room 14m²

Communications Room 9m²
**Third Floor Plan**

- **Building/Residence/Administration**
- **Program/Student Social/Amenity Space**
- **Faculty Guest Suites**
- **1 Bedroom Suite**
- **2 Bedroom Suite**
- **Vertical Circulation**
- **Building Services**

**Study Space**: 27m²

**Social Space**: 39m² each, 194m² total

**1-Bedroom (Barrier Free)**
- 24m²

**1-Bedroom**: 18m² each, 72m² total

**2-Bedroom**: 32m² each, 797m² total

**Communications Room**: 9m²

**Communications Room**: 14m²
10

Fourth Floor Plan

Building/Residence/Administration
Program/Student Social/Amenity Space
Faculty Guest Suites
1 Bedroom Suite
2 Bedroom Suite
Vertical Circulation
Building Services

1-Bedroom (Barrier Free)
24m²

Study Space 27m²

Social Space 39m² each
194m² total

Communications Room 14m²

1-Bedroom
18m² each
36m² total

2-Bedroom
32m² each
480m² total
Building/Residence/Administration
Program/Student Social/Amenity Space
Faculty Guest Suites
1 Bedroom Suite
2 Bedroom Suite
Vertical Circulation

Mechanical Room
170 m²

Bicycle/Building Storage
75 m²

Communication Room
20 m²

City Room Storage
22 m²

Electrical Room
59 m²

Line of Main Floor
Slab Above

Basement Plan
5.0 Site Design

The site design for the Saskatchewan Drive Residence remains consistent with the Schematic Design. The focus during the Design Development phase has been to refine the site grading, streetscapes and building entrance designs.

5.1 Site Analysis

**Building Setbacks**

The reorganization of the cohort grouping to 13 groupings of 11 students reduced the overall footprint of the Saskatchewan Drive Residence and also reduced the overall size of the exterior courtyard. The reduction in the overall building footprint has allowed the building to be set further back from Adair Park and Saskatchewan Drive. This has allowed for an improved relationship between the Dining Hall and the Park, and provides the opportunity to develop an outdoor seating area with views of the Park. The increased setback from Saskatchewan Drive provides relief from the building and the proposed Saskatchewan Drive promenade as well as the ability to provide additional landscaping along Saskatchewan Drive without encroaching on City of Edmonton property. The relationship and setbacks along 111th Street and 90th Avenue remain consistent with the Schematic Design. The slight reduction in the exterior courtyard was offset by the reduced program area on the main floor. This has allowed the courtyard to continue to provide a variety of program opportunities and maintain its flexibility as a student gathering space and East Campus Village amenity.

**111th Street Streetscape**

The main entrance to the Saskatchewan Drive Residence remains on 111th Street. Working with the existing grading in relation to the proposed main floor slab elevation has meant an approximate 500mm grade separation is required between the sidewalk on 111th and the entry to the Residence. A set of stairs and a barrier-free ramp have been incorporated into the front entry. The entry stairs extend north to provide access to the urban plaza space on the corner of 111th Street and Saskatchewan Drive.

**Saskatchewan Drive Streetscape**

The proposed improvements to the City of Edmonton sidewalk along Saskatchewan Drive have been removed from the site design and the project now integrates with the existing conditions. Similar to the main entry condition, the existing grades around the Saskatchewan Drive entry necessitate the inclusion of a set of stairs and barrier-free ramp. This will provide accessible access to the Dining Hall from the drop-off along Saskatchewan Drive. The stairs to the urban plaza have been setback from Saskatchewan Drive to reside completely on University property. Barrier-free access to the plaza is off of 111th Street.

**90th Avenue Streetscape**

The location and size of the 90th Avenue courtyard entrance has been expanded and refined to better align with the proposed mid-block pedestrian pathway through East Campus Village. The courtyard entrance structure has been refined to allow the removal of all structural support columns. This has significantly opened pedestrian access to the courtyard and provided a welcoming entrance to the rest of East Campus Village. The location of the exterior fireplace has also been refined to be on axis with the entrance bringing seasonal activities in the courtyard into view along 90th Avenue. A hard surface plaza space has been incorporated into the entrance to create a formal entry forecourt and also provide paving for food service loading, waste and recycling areas which are adjacent the entry. Efforts have been made to improve the relationship of the waste and recycling entries such that they angle away from the courtyard entrance and reduce their impact on pedestrian movements.
5.2 Landscape Design

Approach, Constraints & Opportunities

Located at 111th Street and 90th Avenue, the Residence sits at the top of the Riverbank, and is a gateway into the campus and a symbol of leadership & sustainability. The landscape vision for the Saskatchewan Drive Residence will see the riverbank ecology wrap up from the banks of the river around and through the building, encompassing the entire site. The architecture and landscape will intimately connect and immerse the students, faculty and visitors in the beauty, seasonality, colour and texture of the landscape thus benefitting inhabitants of the residence through biophilic design.

The landscape design will be a stylized reinterpretation of the North Saskatchewan River’s morphology, mimicking its bends and undulations. It will be a functional resource and a learning ground. Carved out depressions in the ground plane will form bioswales and rain gardens to capture and store stormwater. The stormwater can percolate slowly into the ground or be reused for irrigation. In addition, mound berms will offer visual interest and create intimate spaces and casual seating. An emphasis will be placed on plants and trees native to the North Saskatchewan River Valley ecology. The glazing of the architecture will mirror the surrounding river bank forest and the sky, marking the passing of time and season. The idea of the sinuous river pathway within the courtyard area is a gesture of unifying the area with the existing riverbank recreation trail to the north and with the adjacent city sidewalks. The dynamic pathways will be composed of a coloured concrete paving bordered by natural plantings. A central courtyard will be designed to function as an extension of interior academic space, offering spaces for contemplation, group discussions and study as well as Residence events. The courtyard can be viewed and accessed from the shared faculty rooms on the main floor, and will celebrate the seasons, providing a functional and aesthetically beautiful space 12 months of the year. The courtyard has been designed to provide microclimate amelioration, through the use of berms, trees and building orientation. Elements such as an outdoor fireplace will stretch the seasonal use of the courtyard into the shoulder seasons. A central water feature surrounding a sculptural piece will be animated by cooling mist spray in summer and form an evolving ice sculpture in winter. Dramatic LED lighting in the evenings will lend stunning visual effect to the courtyard space. A lacy canopy of trees will cast dappled shadows on a palette of natural materials including stone, wood and natural plantings. An exterior dining terrace will extend to the east of the building, surrounded by the adjacent Adair Park. The dining hall and terrace will capitalize on views to the park space, and the forested river edge beyond. Throughout the Residence, a seamless indoor-outdoor flow will be established, reinforcing connections with the natural world.

An urban pedestrian plaza at the north corner of 111th Avenue and Saskatchewan Drive will welcome people to the building and serve as a gateway to the north campus. A large organic planting bed will be framed by a custom curved bench and be used to define an upper courtyard. A curved retaining wall will mirror the stylized river pathway which runs through the building and site. A uniform paving strategy will extend from the plaza to the upper courtyard. A curved retaining wall will mirror the stylized river pathway which runs through the building and site. A uniform paving strategy will extend from the plaza to the autonomous walkway allowing the space to be experienced as a unified ground plane. The existing street trees will be augmented with additional Ash and Elm street trees to reinforce the treed allees seen throughout the Barreau and East Campus Village. These treelined allees form a significant part of the University’s cultural landscape, and speak to the history, identity and character of the campus. A south corner plaza at 111th Avenue and 90th Avenue will flow seamlessly into the courtyard, connecting the Residence building with the broader campus network.

Accessibility & Safety

The landscape design will be barrier-free—designed to accommodate people of all ages and ability. The design considers the principles of CPTED (Crime Prevention Through Environmental Design), including lighting strategy and placement, planting design and height, walkways and view corridors, and consideration of windows to the landscape from the surrounding building (‘eyes on the street’).

Additional design features sympathetic to safety and accessibility include the following:

- Increased accessibility (metal edging around planting areas) to indicate a change in levels.
- Change of materiality (metal edging around planting areas) to indicate a change in levels.
- Increased visibility (metal edging around planting areas) to indicate a change in levels.
- Increased safety (metal edging around planting areas) to indicate a change in levels.
- Increased security (metal edging around planting areas) to indicate a change in levels.
- Increased sustainability (metal edging around planting areas) to indicate a change in levels.
- Increased usability (metal edging around planting areas) to indicate a change in levels.
- Increased amenity (metal edging around planting areas) to indicate a change in levels.

Site Furnishings

A unified palette of durable site furnishings will be used throughout the residence utilizing materials including wood and steel. Proposed furnishings include: built-in seatwall, a loose arrangement of ‘lounge’ chairs (around the exterior fire place) and waste receptacles.

Lighting Design

Lighting will be used throughout the site to provide a welcoming and safe environment, as well as a source of visual interest and art. Colour changing LED lighting will be used to highlight the sculpture in the centre of the water feature in the central courtyard. Elsewhere, a unified lighting strategy comprised of bollards and recessed in-ground lighting, following an indirect low-lighting scheme, will be used to light pathways and planting with a subtle glow without producing glare.

Plant Selection

The Studio has developed a planting design that supports a connection to the Riverbank ecology and that will also provide seasonal interest and texture. Our approach to planting design involves using large masses of perennials, shrubs, grasses and trees that will add volume, scale and presence to the design with consideration to required maintenance. We have reviewed the University of Alberta’s suggested plant list regarding indigenous species, and have added additional species and varieties that we feel will complement this list and the Zone 3b climate.

Our proposed planting list has been selected for naturalized appearance to mimic natural planting at the river’s edge. Both native and non-native species are included in this list. The list includes seasonal interest (evergreens, variable bloom times, variety of fall colours, berries etc.). This list can be reduced as required when planting is finalized through the Construction Document phase.

Deciduous Trees

- Acer – Manitoba Maple (Acer negundo), Norway Maple (Acer platanoides)
- Betula papyrifera – White Birch
- Ulmus americana – American Elm
- Crataegus occidentalis – Western Larch (wet locations)
- Pinus banksiana – Jack Pine
- Thuja occidentalis ‘Brandon’ – Brandon Cedar (wet locations)

Coniferous Trees

- Picea glauca – White Spruce
- Larix occidentalis – Western Larch (wet locations)
- Picea mariana – Balsam Fir
- Pinus banksiana – Jack Pine
- Thuja occidentalis ‘Brandon’ – Brandon Cedar (wet locations)
- Abies balsamea – Balsam Fir
- Picea glauca – White Spruce
- Pinus banksiana – Jack Pine
- Thuja occidentalis ‘Brandon’ – Brandon Cedar (wet locations)

Evergreen Shrubs

- Juniperus – Juniper
- Microbiota decussata – Siberian Carpet Cypress (shady locations)

Grasses

- Andropogon scoparius – Little Bluestem
- Calamagrostis acutiflora – Feather Reed Grass

Perennials

- Alnus incana – Canada Red
- Chokecherry (shady locations)
- Rosa ‘Morden Blush’ – Morden Blush Rose (or other Morden varieties)
- Sambucus – Elderberry (wet locations)
- Salix repens – Creeping Willow (wet locations)
- Salix purpurea ‘Nana’ – Dwarf Arctic Willow (wet locations)
- Syringa – Lilac
- Viburnum dentatum – Arrow Wood Viburnum
- Viburnum lentago – Nannyberry (shady locations)

Deciduous Shrubs

- Aesculus parviflora – Bottlebrush Buckeye
- Amelanchier – Serviceberry (wet locations)
- Clethra alnifolia – ‘Hummingbird’ – Clethra
- Cornus sericea – Red Twig Dogwood (wet and shady locations)
- Forsythia ovata – Northern Gold – Forsythia
- Hypericum prolificum – Shrub St. Johns Wort
- Prunus virginiana – Canada Red – Chokecherry (shady locations)
- Rosa ‘Morden Blush’ – Morden Blush Rose (or other Morden varieties)
- Sambucus – Elderberry (wet locations)
- Salix repens – Creeping Willow (wet locations)
- Salix purpurea ‘Nana’ – Dwarf Arctic Willow (wet locations)
- Syringa – Lilac
- Viburnum dentatum – Arrow Wood Viburnum
- Viburnum lentago – Nannyberry (shady locations)

Ferns

- Athyrium filix-mas – Lady Fern (shady locations)
- Dennstaedtia punctiloba – Hay Scented Fern (shady locations)
Sustainability
The design weaves elements of green and blue infrastructure through the entire design.
Key sustainable strategies include:
- Stormwater collected and filtered in bioswales/rain gardens
- LED lighting strategy (in-direct low lighting strategy)
- Paving materials that have a high SRI value (lighter in colour to reflect rather than absorb sunlight, in order to mitigate the heat island effect)
- Planting & Tree Canopy:
  - A predominantly native planting strategy is used throughout the design.
  - Mounded berms allow for root growth, which in turn will help to establish a canopy of mature trees on the site.
  - The tree canopy will cast natural shade for the courtyard and landscape.

Proposed Landscape Maintenance Plan, Water Conservation Strategy and Irrigation
A detailed landscape maintenance plan will be provided as a guideline for the future maintenance of the caretakers or contractors. This includes setting the benchmark of the landscape maintenance quality to follow, which includes areas of site, maintenance schedule, pest control, irrigation and public safety etc.

An automatic irrigation system will be used to efficiently control the amount of moisture in the planting beds and lawn. Local water gardens and cisterns can collect and store away the stormwater. With the use of central controller, rain sensor, filters, appropriate sprinklers and drip pipes as specified by the irrigation designer, the need for irrigation water can be reduced to a minimum while supplying all greens with sufficient water for healthy growth.

Site Construction
Using the dynamic river course as the landscape design theme, pathways and planting beds will be constructed in free forms and curvy lines. Cast in place concrete will be used for paving and seat wall construction to reduce cutting and odd sizes in the finishing materials. Various colours and texture will be used to provide contrast and patterns used in the design. Interesting sculptural profile of the seat-wall can be casted and produced with concrete. A basic light sandblast finish on the concrete will make sure all surfaces to be smooth and even.
Design for Winter

As part of its mandate to be a building that is both evocative of and responsive to its Alberta location, the Saskatchewan Drive Residence has been designed to embrace winter in ways that are formal, technical, and celebratory. The courtyard form created by the assemblage of lower scale building mass on the south (higher on the north) will create a sheltered microclimate that catches low angle winter sun, creating a pleasant outdoor environment in the shorter seasons as well as throughout the winter. The sculptural fountain is intended to be an attractive feature in winter as well as summer, and we are exploring technical solutions that will allow it to freeze into an ice sculpture. This feature will have a complement in the form of an outdoor fireplace, so winter may be celebrated by the presence of fire and ice in the courtyard. The south facing glass of the residence block corridors and gathering spaces will have linear sunshades of a spacing, angle, and depth that admit winter sun for passive solar gain, while shading the glass from high angle summer sun.

Due to the long hours of darkness in winter months, lighting and building materials have been carefully considered in the design. The courtyard will be lit with low level bollard mounted lights that emphasize pathways and plantings. These will be complemented by more dramatic up-lighting of the fountain sculptural feature, and of course, by the flames in the outdoor fireplace. Generous openings and glazed expanses on the ground floor will provide views of these features to passers-by as well as residents and guests. Physical ground floor openings will themselves be lit with up-lighting and recessed lighting that highlights the wood soffit material that will provide visual warmth to the building. These wood surfaces will be complemented by the wood panel lining of the residence unit window seats, which will themselves glow with warmth when lit from within and viewed from outside. Other areas of generous ground floor glazing will, when lit from within, reveal the warmth and life within the building. In particular, these areas include main entry and lobby, living room and above the dining hall with its wood roof structure clearly visible from Saskatchewan Drive, Adair Park, and 90th Avenue. Finally, the City Room will act as a lantern on top of the building when viewed from nearby or from a distance.

Plant material will be chosen to provide winter colour as well as formal interest through the use of both coniferous species and deciduous varieties that provide colour through their bark as well as variety and interest in their form and texture.
5.3 Civil Design

Site Grading & Stormwater Management

The site will be graded to direct all minor stormwater runoff to the south towards 90th Avenue. No minor storm flows are to be directed north onto Saskatchewan Drive or east into Adair Park, which are outside of the University land holdings.

The minor system within the site will consist of catch basins within the landscaped inner courtyard, as well as catch basins and a swale to capture any flows on the north side of the building. A storm sewer running throughout the site will tie into a proposed system (by others) located south of 90th Avenue. At this time, it is proposed to utilize a 450mm pipe graded at 0.4% to convey the flows to the system south of 90th Avenue.

The major system within the site will consist of a series of temporary storage locations (trap lows) to detain runoff in excess of the minor system intake capacity. Trap lows in landscaped areas (less than 0.3 m deep) will be included in order to retain the required volume of stormwater runoff on-site. Major flows from the majority of the site will be directed south to 90th Avenue. Major runoff from the landscaped areas north (Saskatchewan Drive), and west (111th Street) will be directed to the respective streets. The major flows north, east and west of the proposed buildings are not expected to be significant due to the small contributing area of the flow.
6.0 Architectural Design

The massing and formal resolution of the Saskatchewan Drive Residence was refined during the Design Development phase. The refined massing and building design continues to address the East Campus Village Design Guidelines for Infill Development, the Sector 8 Plan and the overarching Guiding Principles and aspirational goals of this project.

6.1 Building Overview

The overall building organization and layout of major program spaces remain primarily unchanged from the Schematic Design Report. The Saskatchewan Drive Residence continues to be organized around a central exterior courtyard which has been designed to create a sense of community for the students who live in the residence as well as a neighbourhood amenity for students within East Campus Village.

To help reduce overall building area and increase program efficiencies, the student cohort groupings were reorganized from 12 groupings of 12 students into 13 groupings of 11 students. This decision was made in consultation and full support of the entire Project Steering Committee. The additional cohort grouping has been added to the fourth floor along the 111th Street facade. This allows the 90th Avenue and Adair Park massing to remain at a lower scale and the 111th Street to match the massing along Saskatchewan Drive. The refined massing continues to align with the step back requirements outlined in the East Campus Village Design Guidelines for Infill Development as well as future residence plans along 111th Street.

The original design concept of providing an articulated and organic main floor with organized and rigorous residential blocks above remains a cornerstone of the design and provided direction for the development of the interiors. The interior design concept was also informed by Marion Kirby Alexander’s original inspiration for the University of Alberta’s two official colours: green and gold. She drew her inspiration from the autumn colours of Edmonton’s river valley, the green representing the prairie land flanked by deep spruce forests and the gold representing the golden harvest fields.

The interior concept design transitions as you move vertically through the building. The main floor, with its strong connections to the river valley and curved forms have a natural, organic and textured approach to materials. The residence floors’ materials transition to a linear design which is colourful and ordered. Finally, the fifth floor City Room is intended to be a formal space, elegant and branded as a unique gathering space at the University of Alberta.

Similarly, the exterior concept design focuses on differentiating the main floor, residence floors and fifth floor City Room. Like the interior design concepts, the main floor is clad with natural and textured materials, that transition to more refined residential scaled cladding on the three residence floors and finally, the building is topped by the fully glazed City Room.
"Originally suggested by Marion Kirby Alexander, who drew her inspiration from the autumn colours of Edmonton’s river valley, the green represents the wide stretches of prairie land flanked by deep spruce forests and is symbolic of hope and optimism. The gold represents the golden harvest fields and is symbolic of the light of knowledge."

6.2 Main Floor

The main floor of the Saskatchewan Drive Residence remains dedicated primarily to student amenity spaces including; a Recreation Room, Living Room, Quiet Study, Fitness Area and Dining Hall. Additionally, the main floor contains administrative functions as well as Faculty and Guest Suites.

Several of the main floor program elements have been refined during the Design Development phase, these include:

- Relocation of the Fitness Room from adjacent to the main lobby to adjacent to the Recreation Room along Saskatchewan Drive. This provided better programmatic adjacencies by clustering active student focused activities.
- Relocation of the Quiet Study to the main lobby. This provided a better adjacency to administration spaces while providing a secluded space to study away from the lively student focused activities.
- A small gathering space was created between the Recreation Room and the Fitness Area. This small gathering space provides relief from the long corridor and expands the Living Room providing connections back to the river valley.
- Main floor public washrooms outside of the Dining Hall have been grouped together to provide better wayfinding as well as improved screening.
- A main floor feature stair that resided in the dining hall pre-function space has been combined with the exit stair in the northeast corner of the building. The previous feature stair location was unable to connect to all three residential floors and required students on the fourth floor to use the northeast exit stair to transition to the feature stair on the third floor. By upgrading the northeast exit stair we have now provided a continuous vertical connection to all residence floors, and by fully glazing the exterior of the stair, hope to encourage a stair culture within the residence as students move between their residence rooms and main floor amenity spaces.

Interior Design

The main floor interior design utilizes organically patterned and richly textured materials. As primarily a student amenities floor, there is a considerable amount of seating options and gathering choices. These space are designed to enhance the student residence experience and encourage interactions between students. Gathering spaces on the main floor have been designed to be flexible for multiple furniture layouts. There are open collaborative spaces as well as more traditional quiet study spaces.

The predominant flooring in all public spaces of the main floor is porcelain tile. Office or acoustically sensitive areas like the quiet study spaces contain a geometrically patterned carpet tile. All ceilings within public areas are painted gypsum board while offices and enclosed program spaces contain acoustical ceiling tile. Green accented and textured feature walls are incorporated throughout the main floor including an integrated donor wall located outside the Dining Hall. The primary ceiling in the Dining Hall is wood in order to unify the space. Reused clinker brick, salvaged from this site, is a feature in the main lobby as a reference to the history of the building site and surrounding neighbourhood.
Main Floor Finish Board*

* Furniture shown is indicative of the final section and subject to the furniture tender
Main Floor Finish Plan

- Safety Flooring
- Sealed Concrete
- Carpet Tile A
- Carpet Tile B
- Resilient Flooring A
- Resilient Flooring B
- Porcelain Tile A
- Porcelain Tile B
Textured Wall Panels
Wood Resin Screen
Green Accent
Featured Art/Student Work
Donor Wall
Glass & Textured Wall Panels

Main Floor Feature Wall Finish Plan

Elevator Lobby East Elevation

Elevator Lobby West Elevation

Donor Wall South Elevation
Living Room
The Living Room is now located within the heart of the main floor student amenity spaces, adjacent to both the Recreation Room and Fitness Area. The Living Room will provide an open and casual seating environment that is anchored by a feature fireplace. Across the hallway from the Living Room is the Recreation Room which provides space for more active student gathering with TV and gaming areas. A key feature of the Recreation Room are two large sliding barn doors which allow the space to open completely to the hallway and the Living Room creating one unified space for larger gatherings. Between, the Recreation Room and Fitness Area a small gathering space has been carved into the Saskatchewan Drive facade. This space helps to extend the Living Room further with visual connections to the riverside. It also provides a waiting area and entry to both the Recreation Room and Fitness Area. The modest Fitness Area is now located off of Saskatchewan Drive providing students views of the river valley while promoting an active lifestyle. The Fitness Room’s walls and flooring will all be a bright green accent colour to provide a sense of play and excitement to the active program element.

View of Proposed Fireplace

View of Living Room Seating Area

Partial Main Floor Finish Plan
Dining Hall

The Dining Hall remains one of the most important program functions on the main floor. Its capacity has been refined to provide seating for 160 students and guests of the Saskatchewan Drive Residence. The food service delivery is anticipated to be market or marché style with preparation, finishing and presentation of food being performed in front of the students at four individual food stations. Preliminary meetings with Aramark, the University of Alberta’s current food service provider, have determined the food stations to be a grilling station, entrée station, deli station and salad bar. Drink stations and ‘grab-and-go’ options will be available from stations placed around the dining hall. It is anticipated that food service will be available to students from 7am to 8pm seven days a week. There will be set times of the day that entrees and hot food service will be available within the dining halls overall operational hours. This food service delivery model, with a seating capacity of 160, will allow the possible delivery of meals to 250 people over a set 2 hour period. This flexibility allows, if desired, for additional guests to dine at the Saskatchewan Drive Residence.

Lister Hall will remain the main commissary and staging area for food deliveries and bulk food preparation. Food will be brought to the Saskatchewan Drive Residence via smaller cargo vans. This reduces the overall storage and loading requirements and better integrates these functions into the 90th Avenue streetscape.

The Dining Hall has been designed as a flexible event space that, if required, can accommodate a wide range of functions. The Dining Hall has a standard capacity of 160 seats; however, an additional 40 stackable seats will be provided within the adjacent storage space. The additional seating will help support the space should a lecture or speaking engagement take place that does not require table seating. To make the transition easier between dining and lecture functions the main 6-person tables, that occupy the central space of the Hall, have been specified to have flip tops and casters so they can be stored easily within the adjacent storage space. A central media wall has been incorporated that will include LCD monitors as well as a drop down screen and projector with an integrated speaker system throughout the Dining Hall to allow both day to day media presentations and special events. Below the central media wall there will be a long counter space that if not used for lectures could be used as a layout area for reception style events. A security grill is provided that will section off the food stations so that the food service provider does not have to locally secure each food station and storage cabinet. The security grill has been located such that the coffee/hot beverage counter, water counter and flex condiment counter remains part of the Dining Hall. This allows these open food stations to be accessed by students and/or guests who are using the Dining Hall after formal food service hours.

A formal pre-function space has been provided outside of the Dining Hall. This pre-function space can operate as an independent gathering space or simply a crush space before or after a formalized event. The pre-function space can be accessed directly off of Saskatchewan Drive through an independent entrance or through the main floor corridor. If access to the rest of the main floor is not desirable during an event a set of wooden doors have been incorporated that would allow students full access to the Living Room, Recreation Room and Fitness Area but not allow guest through. A back entrance to the Dining Hall’s food service area has been provided off of the pre-function space to allow for food service delivery and waiter service within the pre-function space. Weather permitting, the pre-function space will also have access to the central exterior courtyard to allow activities to spill outside. A donor wall has been incorporated into the pre-function space as a prominent feature outside the Dining Hall.

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Partial Main Floor Finish Plan

Dining Hall Layout
16 × 4 seat tables = 64 seats
8 × 12 seat tables = 96 seats
Total = 160 seats
40 × chairs in storage

Lecture Layout
Total = 200 seats
8 × 12 seat tables in storage
Dining Hall

Fitness Area

Entry Lobby

Quiet Study

Recreation Room
6.3 Residence Floors

The second, third and fourth floors of the Saskatchewan Drive Residence remain primarily residence floors. The floors have been reorganized into 13 cohort groupings of 11 students, with each cohort grouping containing an associated flexible Social Space. Design Development refinements to the residence floors include:

- The provision of an additional cohort grouping on the west side of the fourth floor along the 111th Street façade.
- The design of the Social Spaces has been refined to include wooden barn door entries with associated glazed sidelights. This allows a level of acoustical privacy when required while still maintaining a visual connection. A combination of soft communal seating, individual tablet chairs and bar height counters are planned for the Social Space to provide a variety of seating choices and reconfigurable options.
- The Schematic Design included glazing between the corridor and the entries of the two-bedroom suites. This has been replaced with magnetic back painted glass panels that provide a personalizable surface adjacent to the entry doors. These panels provide students the ability to individualize their personnel space while also providing a significant cost savings for the project as the original glazed option would have required the incorporation of a sprinkler protected fire-rated glazing system.

Interior Design

The residence floor interior design is a balance between providing consistent unifying design elements with variable personalizable elements for cohort groupings and individual students. A variable colour scheme has been created which changes across the three residential floors. One feature colour is incorporated into the accent carpet tile on each floor. Additionally, on each residence floor shades of the feature colour are assigned to each Social Space to provide unique identity for each cohort grouping. The colours across each residence floor setup different levels of community from a floor wide identity, to cohort identity and finally down to individual students and the incorporation of personalizable surfaces along the corridor.

By comparison, the residence rooms are unified across the entire building and are a combination of wood and warm neutral tones. Accent colours are minimized in the rooms to allow students to personalize their private spaces.
Second Floor Material Board

Third Floor Material Board

Fourth Floor Material Board
Typical Residence Floor Finish Plan
6.4 Fifth Floor City Room

The fifth floor remains dedicated to the City Room which provides the Saskatchewan Drive Residence with an inspirational space for social gatherings, lectures and seminars. Design Development refinements include:

- Reorientation of the City Room and its associated rooftop terrace. This placed the rooftop terrace on the western corner of the fifth floor and set back the City Room. This reorientation allowed for the inclusion of a new pre-function area and coat closet to better service special events. This also allowed the City Room to expand and fill the width of the fifth floor creating a more functional space while also providing views into the courtyard.

- Removal of the food preparation and servery space.

- Relocation of the dedicated storage space to the basement which is accessible directly from the elevators.

- Relocation of the public washrooms to be adjacent to the east exit stair which allows for full glazing along the south side of the City Room.

**Interior Design**

The fifth floor City Room’s interior design is a reflection of the prominent location of this important gathering space. An elegant and simple material pallet is used that incorporates University of Alberta branding elements. The main space and pre-function areas are carpeted throughout while porcelain tile marks the elevator lobby. Wooden main entry doors and a feature wood panel wall add warmth and a contrast to the predominantly glazed space.

**Media**

The City room will provide data and USB outlets in various locations around the perimeter. There will be two LCD or SMART board screens with complete projector and video conferencing capabilities at the front of room, along with a speaker and microphone system. Floor box outlets will be located beneath table locations with power and data, with AV outlets located beneath the LCD screens. An overhead projector and motorized roll-down screen will also be available for projection onto the east wall. Finally, Lighting controls will be interconnected with the AV system for ease of use.
6.5 Residence Suite Design

The Saskatchewan Drive Residence suite design continues to support social interaction, academic achievement and helps foster a sense of community within the Residence. The overall student residence suite count has been reduced by 1 unit based on the reorganization of the cohort groupings into 13 groupings of 11 students. Additionally, the guest suites have also been reduced from 6 suites to 3. The current design accommodates 1 one-bedroom, barrier-free, long stay suite and 2 hotel style studio suites for shorter stays. A single facility in-residence suite is provided on the main floor. Each main floor guest and faculty suite continues to have direct street access to help provide activity on the street and reflect the infill nature of the East Campus Village. One barrier-free student residence suite is provides on each floor in the northwest cohort grouping for a total of 3 barrier-free suites. This complies with both the Alberta Building Code requirements as well as Residence Service’s recommendations.

Student Residence Suites

There are three types of student residence suites: a two-bedroom unit, a one-bedroom unit and a barrier-free one-bedroom unit. Each student residence suite continues to be defined by an integrated window seat that is also the dominant expression on the exterior façades of the residence floors as a repeated pattern of bay windows. The interiors of the window seats will be wood clad with a faux leather cushion and back support. Integrated task lighting will be shared between the desk and window seat to allow students to study or read later in the evening or during our long winter nights. Interior finishes include vinyl tile in all entry areas as well as bathroom and wet areas. The bed and desk area of each suite will have a carpet tile floor that matches the general field carpet of the corridor. Closets will be separated by a fabric curtain. This reduces the maintenance requirements on closet doors and has proven to be highly successful in other East Campus residences. The majority of the wall and ceiling surfaces will be painted drywall with a large tackable surface above the build-in desk and tiled backsplashes for bathroom vanities.
Residence Suite Finish Plan

Residence Suite Material Board
Optional Guest Suite Layout

There are two types of guest suites: a one-bedroom long stay suite which is also barrier-free and two hotel style studio suites for shorter stays. All guest suites are located on the main floor along 90th Avenue and have direct access off of 90th Avenue as well as a rear entrance from the central courtyard. As described in the Design Guidelines for Infill Development, each guest suite will contain a raised front porch to provide an effective transition between the public space of 90th Avenue and the private space of the guest suite.

Interior finishes of the guest suites is similar to those found in the residence suites with entries as well as bathrooms and wet areas containing a porcelain tile flooring. The living room in the two-bedroom suite and all bedroom areas will have a carpet tile that matches the residence floor’s field carpet colour. The majority of the wall and ceiling surfaces will be painted drywall with tiled backslashes for bathroom vanities and kitchenette areas.

90th Avenue Entrances to Guest Suites
Faculty Suite
A single suite is provided on the main floor for a faculty in residence. Like the guest suites, the faculty suite will have a front porch off of 111th Street; however, it will have a direct interior connection to the main lobby of the building to support student interaction with the faculty member. The faculty suite is conceived as a one-bedroom apartment and will have a full kitchen and living room. Additionally, the faculty suite will have an adjoining office space that provides the interior connection to the rest of the building. The office space is provided as a transitional meeting space for the faculty member to be able to meet with students without inviting them back into their private living quarters.

The interior finishes of the faculty suite are identical to those found in the guest suites with the front entry, kitchen and bathroom spaces containing a porcelain tile flooring. The living room and bedroom areas will have carpet tile that matches the residence floor’s field carpet colour. The majority of the wall and ceiling surfaces will be painted drywall with tile backsplashes in the kitchen and bathrooms.

111th Street Entrances to the Faculty Suite
Interior Partitions and Assemblies

The Design Development of the residence suites included the finalization of interior partition types. This is a critical step in the design of residences as the cumulative effect of late changes to wall thickness can have significant impacts on the overall building footprint.

Interior partitions have been designed in accordance with the University of Alberta design guidelines as well as Alberta Building Code requirements. This means that partitions between suites are proposed to have a sound transmission classification of 50 and partitions between the suites and the public corridor are proposed to have a sound transmission classification of 55. Similarly, partitions between suites, and between suites and the public corridor require a 1 hour fire separation. No fire rating or sound transmission classification is required for partitions between bedrooms in the two-bedroom suite.

Interior Partition Assemblies

(P1) Typical Interior Partition
- 16mm gypsum board
- 92mm steel studs
- 16mm gypsum board

(P2) Typical Interior Partition
- 16mm gypsum board
- 152mm steel studs
- 16mm gypsum board

(P3) Plumbing Wall
- 16mm gypsum board
- 92mm steel studs with 110mm cavity
- 16mm gypsum board

(P4) Suite to Corridor Separation – STC 55 – 1HR FRR
- Refer to ABC Appendix A, Table A-9.10.3.1.A – wall number 58a
- Refer to ULC latest edition – similar to W407
- 2 layers of 16mm fire rated gypsum board (corridor side)
- 152 steel studs, c/w 150mm mineral fibre insulation
- 16mm fire rated gypsum board

(P5) Suite to Suite Separation – STC 50 – 1HR FRR
- Refer to ABC Appendix A, Table A-9.10.3.1.A – wall number 57a
- Refer to ULC latest edition – similar to W407
- 16mm fire rated gypsum board
- 152 steel studs, c/w 150mm mineral fibre insulation
- 16mm fire rated gypsum board

(P6) Suite to Suite Separation – STC 50 – 1HR FRR
- 16mm gypsum board
- 152mm steel studs c/w 150mm mineral fibre insulation
- 64mm steel studs
- 16mm gypsum board

(P7) Suite to Suite Separation – Min STC 50 – 1HR FRR
- Refer to ULC latest edition – design no. W459 configuration A or B
- 16mm fire rated gypsum board
- 92mm steel studs at 400mm OC c/w mineral fibre insulation
- 92mm steel studs at 400mm OC c/w mineral fibre insulation on either side of structural column
- 16mm fire rated gypsum board

Note: total partition thickness = 330mm

(P8) Mechanical Shaft Wall – STC 50 – 1HR FRR
- Refer to ULC latest edition – design no. W446 system E or F
- 16mm gypsum board
- 64mm steel “C-T” or “I” studs
- 25mm gypsum board

(P9) Plumbing Wall
- 16mm gypsum board
- 64mm steel studs at 400mm OC

Typical Fire Rated and South Classified Interior Partitions
6.6 Building Exterior

The design of the exterior has remained consistent with the Schematic Design through the Design Development phase. The focus during the Design Development phase has been to refine the technical requirements, patterning and constructability of the exterior façade.

6.6.1 Building Massing

The overall building massing has been updated to reflect the reorganization of the student cohort groupings into 13 groupings of 11 students. This has increased the height of the building along 111th Street to four stories but has allowed the 90th Avenue and Adair Park facades to remain consistent with the Schematic Design and Infill Design Guidelines.

The fifth floor and City Room organization has been updated to provide better functionality to this important gathering space. The City Room has been relocated away from the corner of 111th Street and Saskatchewan Drive. A large roof canopy will continue to extend over the rooftop terrace and provides weather protection as well as a significant feature for the important corner of 111th Street and Saskatchewan Drive.

The new feature stair in the northeast corner of the building will provide a new exterior element along Saskatchewan Drive. The fully glazed stairwell will become a lantern in the evenings and an expression of the interconnection between all residence floors. As students move up and down the stair they will enjoy expansive views of the river valley and provide animation to Saskatchewan Drive.
6.6.2 Exterior Materials
Specific building materials and finishes have been confirmed during the Design Development phase that reflect the unique setting of East Campus Village and the residential nature of this project. Materials and building assemblies have been specifically selected for their durability, low maintenance and aesthetic qualities.

- A deep red iron spot brick is the primary cladding on the main floor, stair cores and vertical service spaces. The iron spot brick was selected for its similarities to the clinker brick that was incorporated into several of the original single family residences located in Garneau and the East Campus Village.
- A pre-weathered graphite grey zinc shingle is used to define the residence blocks that sit above the brick podium main floor.
- White fiber cement siding infill the exterior facades of the residential blocks. The fiber cement siding is durable and does not require on-going maintenance, but its scale and clapboard profile provide a clear connection to the surrounding residential architecture.
- White composite metal siding lines the roof soffits of the City Room. The bay windows that surround the building are also lined with this white composite siding to express the built-in window seats.
- Clear anodized aluminum frame curtain wall with clear low-e coating glazing provides the main floor, the perimeter corridor in the courtyard and City Room with a high level of transparency combined with good overall energy performance.

Exterior Material Boards
Pre-weathered zinc standing seam metal roof

Pre-weathered zinc shingle cladding

Pre-finished composite metal panel soffit and fascia

Clear anodized aluminum frame punch window

Clear anodized aluminum curtain wall glazing

Brick veneer

Fibre cement lap siding

North Elevation

East Elevation

North Elevation
Pre-weathered zinc shingle cladding

Pre-finished composite metal panel soffit and fascia

Pre-finished composite metal panel

Pre-weathered zinc standing seam metal roof

Fibre cement lap siding

Clear anodized aluminum frame punch window

Brick veneer

South Elevation

West Elevation

South Elevation
East Courtyard Elevation

- Pre-weathered zinc standing seam metal roof
- Glulam Timber Structure
- Clear anodized aluminum curtain wall glazing
- Pre-finished composite metal panel soffit and fascia
- Brick veneer
- Pre-finished composite metal panel

North Courtyard Elevation

- Pre-weathered zinc standing seam metal roof
- Clear anodized aluminum curtain wall glazing
- Glulam Timber Structure
- Clear anodized aluminum frame punch window
- Pre-finished composite metal panel soffit and fascia
- Brick veneer
- Pre-finished composite metal panel
Pre-finished composite metal panel soffit and fascia
Pre-weathered zinc standing seam metal roof
clear anodized curtain wall glazing with solar shades
Brick veneer
Feature fireplace
Clear anodized aluminum curtain wall glazing

West Courtyard Elevation

Glulam Timber Structure

South Courtyard Elevation
6.6.3 Envelope Details

The overall basis of design for the exterior assemblies and building envelope details remain consistent with the Schematic Design. Specified building assemblies have been confirmed in conjunction with an energy model to ensure they respond to the project energy targets as well as constructability reviews. The assemblies select balance aesthetic requirements, performance and cost effectiveness.

Glazing Assemblies

- Clear anodized curtain wall system, Kawneer 1600 (UT) System 1
- Double glazed sealed units, c/w low-e coating Guardian Sungard Superneutral 68 on surface #2, on 6mm clear glazing
- 10" deep Kawneer Versoleil single blade sun shade system on south exposures
- Kawneer 5525 IsoWeb window

- 13mm gypsum sheathing
- 2 layers 90mm mineral fibre insulation, slightly compressed
- Provide operable windows in all residence suites
- Incorporate local and drought tolerant planting into the courtyard as well as incorporate
- 38mm steel deck
- Self-adhering membrane Air/vapor barrier
- 102mm semi-rigid insulation
- 13mm gypsum sheathing on support structure

- Rain Gardens to help manage storm water
- Tapered polyisocyanurate rigid insulation to drain
- Pre-weathered graphite grey standing seam roof system on thermal clips
- Incorporate rain gardens to help manage storm water
- Provide night sky friendly exterior lighting
- 13mm gypsum sheathing on support structure

Exterior Wall Assemblies

(W1) Brick Walls
- 90mm Interstate Ironstone L-4 brick veneer
- 35mm air space
- 102mm semi-rigid insulation
- 13mm gypsum sheathing
- 152mm steel stud
- 13mm gypsum board

(W2) Zinc Shingle Walls
- 1mm pre-weathered graphite grey interlocking zinc shingle
- 38mm vertical acoustical metal deck fastened to z-bars
- 102mm horizontal G.I. Z-bars
- 102mm semi-rigid insulation
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing on support structure

Roof Assemblies

(R1) Typical Flat Roof
- 2-ply SBS roof membrane
- 13mm roofing cover board
- 127mm polyisocyanurate rigid insulation
- Tapered polyisocyanurate rigid insulation to drain
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing
- 38mm steel deck

(R2) Pitched Zinc Roof
- Pre-weathered graphite grey standing seam roof system on thermal clips
- 2 layers 90mm mineral fibre insulation, slightly compressed
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing
- 38mm steel deck

Soffit Assemblies

(S1) Wood Soffit
- 38mm x 140mm v-groove stained and treated cedar planks
- 19mm fire treated plywood strapping
- 102mm horizontal G.I. Z-bars
- 102mm semi-rigid insulation
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing on support structure

(S2) Zinc Shingle Soffit
- 1mm pre-weathered graphite grey interlocking zinc shingle
- 38mm vertical acoustical metal deck fastened to z-bars
- 102mm horizontal G.I. Z-bars
- 102mm semi-rigid insulation
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing on support structure

(S3) Composite Metal Panel Soffit
- Pre-finished composite metal panel fastened to z-bars
- 102mm horizontal G.I. Z-bars
- 102mm semi-rigid insulation
- Self-adhering membrane Air/vapor barrier
- 13mm gypsum sheathing on support structure

6.7 Sustainable Design

The Saskatchewan Drive Residence is targeting Green Globes certification for new construction in Canada. The University has prescribed a target of 4 Green Globes which requires achieving 70 to 85% of the possible points. The sustainable priorities for the Saskatchewan Drive Residence are consistent with the Schematic Design and focus on incorporating durable, reliable, proven and cost effective sustainable strategies and technologies.

The design team has worked with the University’s Energy Management Program to identify various sustainable strategies that are eligible for funding. Sustainable strategies incorporated into the project include:

- Maximize daylight penetration and views to the exterior into all occupied space through the incorporation of the courtyard and perimeter corridor.
- Provide double pane low-e coated glazing for both curtain wall and punch window assemblies.
- Provide operable windows in all residence suites.
- Provide passive solar shading on south exposures to reduce summer heat gain around the perimeter corridor.
- Upgrade boilers to condensing style with 92% flat rate efficiency.
- Provide ventilation heat recovery through built-in heat wheel into the main air handling unit.

The design team are targeting as achievable:

- Incorporate low-flow and water efficient plumbing fixtures throughout the building.
- Minimize the use of interior materials that contain high recycled contents.
- Maximize the use of interior materials that emit volatile organic compounds (VOCs).
- Minimize the use of interior materials that emit volatile organic compounds (VOCs).
- Establish construction management plans that divert construction waste to landfill.
- Incorporate local and drought tolerant planting into the courtyard as well as incorporate rain gardens to help manage storm water.
- Provide night sky friendly exterior lighting.
- Coordinate food service spaces to allow for the incorporation of the University’s current sustainable strategies for food delivery and waste handling.

The following sustainable strategies were explored during the Design Development Phase but were not incorporated into the final design due to long term payback period or low energy reductions compared to capital cost expenses:

- A “super” insulated building envelope
- Domestic water heat recovery
- Triple pane glazing

Please refer to Appendix A for a current Green Globes checklist outlining points that the design team are targeting as achievable.
7.0 Structural Design

7.1 General

The proposed new building at the University of Alberta, situated along Saskatchewan Drive consists of a partial basement, common main level, and up to four residence levels, with a fifth floor meeting and assembly area. The entire building has a large outdoor courtyard space in the middle. At the east end of the building is a one story dining hall that will have an exposed roof structure acting as an architectural feature in the building. The goals of the structural design strategy are to produce economical solutions while staying mindful of constructability and sustainable practices. This will be achieved through the selection of structural materials, optimized sizing and incorporating local practices and materials where possible.

7.2 Design Criteria

7.2.1 Codes

- Alberta Building Code 2006
- CSA S16-09 Design of Steel Structures
- CSA A23.3-04 (R2010) Design of Concrete Structures
- CSA O86-09 Engineering Design in Wood

7.2.2 Snow Loads

- SS = 1.7 kPa
- Sr = 0.1 kPa

7.2.3 Live Loads

- Common areas = 4.8 kPa (includes 1.0kPa partition allowance)
- Residential Areas = 1.9 kPa

7.2.4 Wind Loads

- q (1/10) = 0.32 kPa
- q (1/50) = 0.45 kPa

7.2.5 Seismic

- Site Class D
- Sa (0.2) = 0.120 g
- Sa (0.5) = 0.056 g
- Sa (1.0) = 0.023 g
- Sa(2.0) = 0.008 g
- PGA = 0.099 g

7.2.6 Importance Category

- Normal (I= 1.0 Typically)

7.3 Foundations

Foundation design is based on the geotechnical report by Thurber Engineering Ltd. dated July 29, 2013, which was established from three test holes drilled within the footprint of the new building. The subsurface fill conditions consisted of 0.1 m - 0.3 m of top soil over 0.3 m -1.5 m of clay fill. Below this point native clay was found to depths ranging from 3.8 m to 5.8 m below existing grade, at which point clay till and sand was found. The test holes were 7.3 m deep.

7.3.1 Shallow Foundations

The geotechnical report suggests that conventional spread and strip footings founded in the native stiff clay/clay till soils or on approved engineered fill will be adequate to support the proposed building. The bearing elevation is assumed to be approximately 1.5 m below grade, to protect against frost, with a bearing capacity of 150 kPa. The slab on grade will be thickened at internal spread footings to help reduce differential settlement, which could be approximately 20 mm according to the report. The conceptual layout of perimeter strip footings is shown in Figure 1:

![Figure 1: Perimeter Strip Footing Concept](image)

Typical strip footing sizes are 2300 mm wide x 350 deep under perimeter column lines and 2700 mm x 2700 mm x 400 deep pad footings under interior column point loads. The reinforced concrete slab on grade will be 125 mm thick, on appropriate fill material as specified by the geotechnical engineer.

7.3.2 Deep Foundations

The report also suggests alternate foundation options of cast-in-place concrete friction piles and end bearing piles. The skin friction piles are stated as having a factored ULS skin friction of 20 kPa between 1.5 and 7.0 m below grade and 24 kPa below 7.0 m. The top 1.5 m below grade has negligible skin friction noted. The building would require 600 mm diameter x 5200 mm long friction piles under perimeter column lines and 600 mm x 12000 mm long friction piles under interior column point loads.

The end bearing piles are stated as having a ULS end bearing pressure of 360 kPa at 7 m below grade. The building requires 1100 mm diameter belled ended under perimeter column lines and 2000 mm diameter belled ended under interior column point loads. Due to the size and number of friction or end bearing piles required to support the superstructure, shallow foundations are considered to be the more economical approach.

7.3.3 Existing Buildings

It is understood that on the site there currently exists a number of single family residences with basements of approximately 1.0 to 1.5 m deep (below existing ground surface). The intention is for the houses to be completely demolished and removed, including foundations, prior to building the new residences.

Subsequent discussion with Thurber Engineering suggests that where the excavation extends below the new required level for foundations, it can be raised with granular engineered fill or clay fill, compacted in 150 mm lifts. Further investigation by the geotechnical engineer will be required to determine if there are any impacts of long term differential settlement between the areas of new foundation supported on native soil and those on compacted fill.

The removal of these existing residences further advances the decision to use shallow foundations rather than piles, as the geotechnical report states that new interior footings may be placed on native stiff clay immediately below the basement level. The required excavation will bring the grade down to the required elevation for placing the interior footings, and closer to the grade required for the perimeter strip footings.

7.4 Main Superstructure

The main structure of the building is primarily steel frame with concrete/steel composite floors as discussed in this section.

7.4.1 Basement

The structure consists of a partial basement in the north-west corner. This will consist of cast-in-place concrete retaining walls with interior load bearing concrete walls. Non-load bearing wall partitions with be CMU block. In certain locations where larger rooms are required, the floor above will be supported with steel columns and drop steel beams. The main floor above the basement will be 300 mm deep composite ComSlab system.
7.4.2 Level One

The main level consists mainly of common areas, with a few exceptions of offices, administration areas and three townhouses. In general, the floor will consist of a 125 mm thick slab on grade, while the north-west corner will be supported by a ComSlab system over the basement mentioned above.

The structure above the main floor will typically be a 300 mm ComSlab system supported on W-section steel beams up to 691 mm deep. Steel 150mm × 150mm HSS columns at this level have been placed to optimize open spaces throughout the floor. Steel transfer beams are required to support the point loads from floors above, and thicker ComSlab, up to 350 mm deep, is required in areas with longer spans. The exception to this framing system is the dining hall located at the east end of the building which is discussed in Section 6.4.6.

7.4.3 Level Two Through Five

The consistent architectural layout of levels two through five allow for significant repetition of structural elements. Typically support columns are steel 203 × 102 hollow saws of varying thickness across the height of the building. They are located within the walls between residences. The columns support steel W-section beams, 200 mm deep at the perimeter and 410 mm deep along the interior side of the residences. These beams in turn support a 300 mm ComSlab system.

In general, columns are aligned floor-to-floor, negating the need for transfer beams. The one exception to this is in the fifth floor city room, where columns are moved to the exterior edges of the room. In this case 310 mm deep transfer beams are used to support them below.

7.4.4 Roof

The roof, with exception of the dining hall and fifth floor city room, is comprised of pitched open web steel joist trusses at 1.5 m o.c. with 38 mm steel deck above. The roof over the interior hallway will be cantilevered from the bottom chord of the truss and can be cranked open web steel joist trusses at 1.5 m o.c with 38 mm steel deck above. The roof of the dining hall is discussed in section 6.4.6.

7.4.5 Lateral Force Resisting System

The primary means of lateral support for earthquake and wind loads will consist of 102 mm x 102 mm hollow structural steel braces extending to the roof. Braces will be located within the walls and not visually exposed. Where braces are not able to be placed in vertical alignment due to wall offsets, they too will be offset and drag struts utilized to redistribute the load. When braces are used to resist seismic forces, conventional braced frame construction will be used.

With regard to resisting the lateral loads, the building will be separated into two structures by utilizing expansion joints in the northwest and northeast corners. This will allow for differential movement as well as relieving induced stress associated with thermal and lateral loads.

The Dining hall, having a unique timber structure, also has a unique lateral force resisting system discussed in the next section.

7.4.6 Dining Hall

The dining hall roof offers a unique opportunity to introduce highly exposed timber elements. The roof will consist of 12mm plywood on either 140 mm deep nail laminated timber (NLT) panels or locally sourced 130 mm deep fluted WestDek (GLT) panels supported by 215 mm x 342 mm and 215 mm x 740 mm glulam beams with posts at the perimeter. A 265 mm x 988 mm transfer beam along the central ridge will support the glulam beams at the ridge, and provide a clerestory between, as shown in Figure 3 below:

7.4.7 Atrium Stair

In the north-east corner of the building is a feature stair case exposed to the exterior of the building through full height glazing. The stairs will be supported along the south edge with beams at each level and along the west edge within the wall. A full height post will be located in the north-east corner of the stairwell and provide both lateral support for the glazing and vertical support for the stairs.

7.5 Fire Resistance

The project requires a 1-hour fire resistance rating. The 300 mm ComSlab provides a 1.5-hour rating between floors and columns in levels two through five will be located within fire rated walls. Where columns are exposed on the main floor, they will either need to be painted with intumescent paint or clad in a protective layer to achieve the required rating.

7.6 Curtainwall and Cladding Support

At levels above the main floor, the exterior curtainwall system, and brick veneer in places, will be supported directly by the cantilevered ComSlab slab as shown in the following conceptual Figure 4.

7.7 Construction Methodology

The building is designed so that standard steel frame with ComSlab construction is used. Where unique, the methodology can be used. The dining hall roof beams can be pre-fabricated so that on site modification is not necessary and can arrive as a “kit-of-parts” to be installed.

7.8 Conclusion

A combination of structural materials and systems were chosen for this project to take advantage of each material’s characteristics with considerations to structural and architectural performance, cost, erection efficiency, and sustainability.
8.0 Mechanical Design

8.1 Introduction

The following report, schematics and outline specification have been provided for consideration in satisfying the facility design intent. The report conveys the mechanical systems design strategies, and will allow for budget projections for the proposed systems and equipment.

This report offers what is considered the optimal long term solution for the facility, balancing for the greatest potential flexibility, operating efficiency, comfort and ease of maintenance. Sustainable design initiatives and energy saving attributes associated with potential Green Globe building certification are also noted in Appendix A of this report.

8.2 Building Code Requirements

The following is an overview of 2010 Alberta Building Code articles that will have impact on the mechanical work:

- Use and Occupancy: Group A Division 2/Group D
  - We interpret this project will be categorized as a combination of “Residence Space” and “Assembly” space.

- Building Size and Construction Relative to Occupancy:
  - Article 3.2.2.54 - Building must be sprinklered.
  - Provisions for Fire Fighting:
    - Article 3.2.5.8 – A standpipe and hose system will be required as the buildings are greater than 3 stories, greater than 14 m high and is sprinklered throughout.
    - Article 3.2.5.16 – Fire Department connections for sprinkler system must be located within 45 m (unobstructed) from a fire hydrant and must be located between 3 m and 15 m from the principle entrance to the building.

- Exhaust Duct Negative Pressure:
  - Article 3.6.4.1 - Defines that fire compartments must not have individual exhaust fans that discharge into an exhaust riser.
  - Horizontal Service Spaces and Service Facilities:
    - Article 3.6.4.3 - Defines requirements where ceiling plenum can be used for return air.

- Heating, Ventilation and Air Conditioning:
  - Article 6.2.1.1 - Defines ASHRAE, SMACNA and NFPA as reference standards for good engineering practice.
  - Article 6.2.1.14 - Defines that an exit stairway serving more than one storey must be heated/ventilated by an independent system.

- Plumbing Services:
  - Article 7.1.2.1 - Defines that ventilation mechanical and normal shall be provided within the facility in compliance with ASHRAE 62 2010.

8.3 Fire Protection and Life Safety

Sprinklers are planned for the building in its entirety. Areas of the sprinkler zone exposed to cold environments would be dry type to withstand potential freezing conditions and sprinkler heads caged to prevent damage. The remainder of the facility would be equipped with conventional wet sprinklers, zoned in an appropriate fashion to meet code. Fire protection risers will be located in exit stairwells with zone valves exposed for ready service with adjacent drain risers.

A new 150 mm domestic water supply to the building will need to be confirmed to be adequate for the conventional sprinkler service given the proximity of the adjacent water supplies.

The utility service will need to be tested at the closest adjacent site hydrant to determine available residual flow rates and pressures. Given the site size and building layouts, an additional site hydrant will be required.

Ventilation fan shutdowns will be installed for code compliance, and will be interlocked with the fire alarm system.

8.4 Plumbing Systems

Plumbing fixtures will be selected for highest practical water savings to conserve domestic water and achieve Green Globes objectives. Low flow fixtures and dual flush toilets are to be utilised in residences. Low flow fixtures with hands free lavatories, urinals and toilets will be selected for common spaces (valves will be hard-wired to negate the use of batteries).

Sanitary drainage and vent piping will be vertically stacked and terminated at the roof line. Separate drain stacks for residential grey water will be separate from the drain stacks for toilets to facilitate the use of a drain water heat recovery unit optimal for recovery of heat from residential showers.

Domestic hot water for the building’s servicing facility is to be provided by a high efficiency hot water heaters installed in the basement mechanical room mechanical space.

All domestic hot and cold piping should be thermally insulated for energy conservation.

Domestic hot, cold piping will be extended to all fixtures. Domestic hot water will be generated for distribution at 54°C.

Reduced pressure backflow preventer assemblies will be provided consistent with the National Plumbing Code Requirements.

Sanitary drainage will be consolidated and directed to a new sanitary manhole and connection to the University sanitary infrastructure. A sanitary lift station for drainage in the basement will be required due to shallow inverts of the university system. This lift station would be for grey water only.

Storm water is collected by a system of roof drains, and effluent will be piped to the storm drainage system. The storm piping will be consolidated on the main floor and directed to a new storm manhole that will be tied into the University storm drainage system. Given the shallow inverts, additional freeze protection of the storm main from the building to the manhole will be by a Cored frost box and heat trace.

Subsurface weeping tile drainage will be directed to a basement sump pit with sump pumps.

8.5 Heating Systems

A central heating system will be provided that will serve all perimeter heating elements and air systems. The heating system will consist of the following:

- High efficiency condensing boilers. Preliminary Selections are for 3 x 3000 MBH boilers with one being a redundant boiler. Each boiler will have a dedicated pump.
- A heating water system with a “cascading” primary heating water loop with dual redundant pumps.
- A secondary terminal heating water circuit with dual redundant pumps and variable speed drives. This will direct heating water to various terminals throughout the building.
- A glycol heating system to serve the make-up air unit heating coil as well as the stairwell pressurisation coils as required. This will consist of a plate and frame heat exchanger and dual redundant variable speed pumps.
- Perimeter heating will consist of distributed supply and return piping (iron, copper piping with MNEC insulation) serving radiant panels and force flow heating.
- Supplemental heat for the dining area with an in floor heating system.
- Entrance unit heaters will be ceiling or wall mounted in vestibules and entryways to allow for offsetting of infiltration and heat loss at door entrances.
- Every residence will have a dedicated zone control with electronic thermostat.

8.6 Cooling Systems

- Make-up ventilation air distributed to all areas: common areas, suites and kitchen, etcetera, will be tempered. Control will be by a fan, therefore air will be delivered at a moderate temperature (approximately 16°C) with an outdoor air temperature reset. This will provide partial cooling to “non-air-conditioned” suites.
- Packaged Mitsubishi VFR fan coil units using common outdoor condensing units is intended to provide space conditioning to common spaces, the cafeteria, the meeting rooms and selected suites on the main level. Residences will not have terminal cooling at this time.
- Condensing units for the MAU cooling coil, Fan coils for the dining area and the City room as well as the VFR system will be located at one of two roof top locations.

8.7 Ventilation & Exhaust Systems

The building will be served by a central make-up air system providing conditioned outdoor air for ventilation, exhaust make-up and building pressurisation.

The make-up air unit is tentatively 15,000 CFM. Specifics include:

- Direct drive fanwall supply and return fan arrays;
- Heating coil (glycol);
- DX cooling coil served by a remote condensing unit; and
- A heat recovery enthalpy wheel.

The ventilation system will distribute supply air to volume control terminals for residential zones, common space zones (Phoenix Tracel). Terminals in the common areas (dining and city room) will use a variable volume flow based on CO2 monitoring. The kitchen will be supplied with make-up air interlocked with the kitchen exhaust fan.

Washroom exhaust is directed to common exhaust ductwork and through the heat recovery wheel to temper outdoor air. Kitchen exhaust will be served by a dedicated exhaust fan.
The dining hall and the city room are provided with dedicated fan coils to provide space cooling and air circulation. No humidification systems are proposed for the facility at this time. The relative humidity in the common and tenant spaces will be variable dependent on outside air conditions.

8.8 Thermal Insulation

**General**

Piping, equipment and sheet metal work with surface temperatures greater or less than surrounding air temperature will be insulated to control heat transfer and condensation, and to meet NMEBC requirements.

**Piping**

Insulation on piping systems will include:
- Heating water
- Glycol systems
- Domestic hot, cold and recirculation
- Roof drains and a portion of pipe near roof
- Plumbing vents near roof
- Refrigerant piping.

**Ductwork**

Insulation on duct systems will include:
- Outside air ducts/plenums
- Supply ducts carrying conditioned air
- Exhaust/relief ducts near louvers
- Acoustic treatment where required

8.9 Controls

The building would be provided with a central BMS for central control and monitoring of the heating plant, cooling equipment and make-up air unit. All monitoring and alarm functions will be networked. Generally the networked and unitary control features will include:
- Optimization of system operation and start/stop scheduling for unoccupied ventilation and temperature setback.
- Unoccupied fan system shutdown and temperature setback on the base building zones.
- Schedule water temperature with outdoor air temperature to limit heat losses from piping distribution.
- Space temperature and outdoor air condition profile feedback to anticipate supply air temperature settings on air system.

8.10 Site Services

Natural gas, water, storm and sanitary service connections all enter the facilities at various locations on the site plan. The new gas service to the site will consist of shallow service distribution terminating at exterior meter sets at the complex to serve the residence and base building requirements. The gas service will be piped to the mechanical room and peripheral equipment to accommodate equipment housed within the facility.

The domestic water service for distribution to the building will be terminated inside the lower level meter room, and distributed accordingly within the building to serve for fire protection and domestic water requirements.

8.11 Design Options and Green Globe Considerations

For the project, the following design options have been included:
- Use of new low flow plumbing fixtures and trim to achieve maximum water use efficiency. Maintenance and functionality are a consideration over conventional commercial flush valve products. Included measures are 4.8 lpf Water Closets and 0.6 lpf urinals with automatic flush valves for common spaces, 4.8 lpf Water Closets for residences, Hands free .5 GPM lavatory faucets for public washrooms, and low flow shower fixtures for residences. All residence fixtures and trim will be equipped with low flow aerators.
- Provision for high efficiency heat pumps/fan coil units at 2.5 to 3 tons capacity for the Variable Flow Refrigerate systems each to achieve optimal energy performance. All refrigerant equipment and selected condensing units will have 410A Refrigerant, and high EERs of 15 to 17.
- Heating plant has been designed with high efficiency natural gas fired boilers which is scheduled to suit the building loads, which circulation pumps are equipped with variable speed drives for further reduction in electrical energy consumption for pumping requirements.
- Building automation will allow for enhanced control and scheduling capability for systems operation to accommodate setback or shutdown of systems when the facility or spaces are unoccupied. Individual zones of temperature control can be enabled to operate on a demand for heating and cooling during off peak hours, depending upon tenant requirements.
- Variable volume control with carbon dioxide sensors for dining hall and City room.
- Primary ventilation systems will incorporate air side heat recovery and controlled ventilation rates to minimize excess air heating requirements, and to optimize on waste heat from the building exhaust air streams.
- Sanitary grey water heat recovery with water to water heat exchanger.
9.0 Electrical Design

9.1 Introduction

The outline of the electrical systems and facilities contained in this report are to describe the Design Development concepts. This report outlines specific strategies for the electrical systems of the proposed facility and will form the basis for the development of the Design Development phase of the project. A basic outline of the perceived strategies for power distribution, low-tension systems, community systems and life safety systems for the proposed Saskatchewan Drive Residence have been included to summarize discussions and concepts developed to date.

The electrical services proposed for the Saskatchewan Drive Residence are based upon an anticipated gross building area of approximately 79,000 ft\(^2\) and an anticipated restricted gross building area of approximately 40,000 ft\(^2\). The electrical design will be based on the following applicable University of Alberta and other applicable standards including:

- University of Alberta, Electrical Design Guidelines.
- University of Alberta, Guidelines for Design and Installation of Street, Sidewalk and Area Lighting – Revised October 2000.
- ANSI, IEEE, EEMAC Standard for High and Low Voltage Switchgear.
- University of Alberta, Electrical Design Guidelines.
- Latest adopted Canadian Electrical Code – Part I.
- Latest Alberta Fire Code.
- CSA Standard B651-95 Barrier Free Design.
- Latest CSA Fire Alarm Standards and ULIC Standards.
- Latest Illuminating Engineering Society of North America (IESNA) Standards.
- University of Alberta, Lighting Design Guidelines and Standards (January 2009, Revision 0.2).

Each system presented in this report will be open to further in-depth review with the user groups and University of Alberta Facility Management group.

9.2 Sustainable Design Considerations

The Saskatchewan Drive Residence design will be based upon achieving a Green Globes 4 certification. The rationale for engaging in sustainable design is to create a facility that will contribute to reduced demands on the earth resources. There are four areas that are impacted by engaging Green Globe practices into electrical systems including:

- Energy conservation.
- Renewable energy usage.
- Light pollution reduction, and
- Indoor environmental quality.

Sustainability design for the Saskatchewan Drive Residence will be considered based on how Operations can maintain these systems and have the budgets to sustain the systems for operations and replacement of these systems. Further review of these systems will be required during the next phase of design.

Other sustainable design options to be considered for review are:

- Photovoltaics and two way metering. Further review is required to determine the feasibility of using PV arrays.
- People counters to be used in certain rooms - City room and dining hall integrated with BMS system.

Energy Conservation

Electrical energy comprises a small portion of the total energy consumed by a facility but when expressed in actual utility costs, the electrical system consumes approximately 20-40% of the total building's energy budget. The following initiatives will be adopted in the design to reduce the building's energy consumption:

- Use the latest illumination technology including primarily LED lighting.
- The Minimum Energy Performance prerequisite in Green Globes is intended to comply with the minimum level of energy efficiency as specified in latest version of ASHRAE 90.1.
- Other measures that can further improve the baseline energy performance is the use of occupancy sensors, dimming controls, daylight harvesting sensors, photocells, and improved local controls including those employing a digital addressable lighting system. An interface to the University’s building automation system will optimize the use of lighting and ventilation systems when a space is occupied and reduced usage when spaces are not occupied.
- Engineered lighting systems to provide appropriate lighting levels that are safe and effective. Lighting will comply with prescribed guidelines rather than using light levels that are on the high end of the IESNA (Illuminating Engineering Society of North America) standard. It is proposed that lower ambient lighting levels be employed in offices, suites, circulation spaces, and corridors.
- The following non-Green Globes energy efficient design parameters will be considered:
  - Power distribution centres will be located as close as possible to their connected loads, thereby minimizing the length of branch circuit wiring which in turn will improve the voltage regulation.
  - Designated equipment to have “manual-off-automatic” controls such that they can be run in manual mode or automatically through the building management system.
  - Use of copper-wound versus aluminum-wound transformers. Copper-wound transformers are more efficient than aluminum-wound transformers and consume less energy.
  - The design will favor the use of environmentally friendly components such as LED lamps which have no mercury content.

Indoor Environmental Quality - Controllability of Perimeter and Non-Perimeter Spaces

An option is to utilize advanced lighting control system technology. One such system would be the use of a digital addressable lighting interface system. This technology can offer significant energy savings and excellent control. Luminaires can be controlled separately or in large groups. The digital addressable lighting interface system would also offer the convenience of reprogramming existing luminaires to adapt existing spaces for new program requirements. Dimming can be achieved locally or from more centralized location(s).

9.3 Electrical Systems

Power Distribution – Approach

The design approach for this facility is to provide a single-ended substation with 13.8 kV on the primary side with a 600 V secondary distribution.

Power Distribution System Design

The total connected load for Saskatchewan Drive Residence is estimated at approximately 792 kW and 530 kW demand load based on a building size of 7,920 m\(^2\). An 800A, 347/600V service is estimated but demand loads will need to be further reviewed with UOA Electrical Utilities. To transport power efficiently over a large area and to numerous loads, one (1) 3.8 kV single-ended substation will be provided complete with 750kVA transformer and Main distribution panel. The design provides for a minimum of 25% reserve capacity. Service to the building will be provided by UOA Electrical Utilities group.

Main Electrical Room

will be located in the basement - to house single ended substation to meet arc flash requirements for both 13.8 kV and 600V distribution. A review will be required to determine access to electrical equipment replacement in the future.

Sub Electrical Rooms

- South Wing - to house 600V and 120/208V distribution
- North Wing - to house 600V and 120/208V distribution
- 120/208V Panelboards will be provided and designated for suites and specialty areas.

The Saskatchewan Drive Residence service entrance switchgear will be metal enclosed 15kV rated indoor style load break fused switching devices and vacuum circuit breakers. All low voltage switchgear (600V) will be metal-enclosed indoor rated, with withdrawable-type power-air circuit breakers complete with programmable protective relays.

The standard operating, distribution and utilization voltages for Saskatchewan Drive Residence will be 600V, 3-phase, 3-wire and 120/208V, 3-phase, 4-wire. In general, feeders that supply 288V distribution transformers, large mechanical motor loads, and with high amperage electrical loads will be supplied at 600V. All site lighting not affixed to building will be fed at 120V.

All other loads will be supplied from 120/208V, 3-phase, 4-wire electrical distribution systems. A sufficient number of 120/208V panelboards will be located in the suite areas to maintain required voltage levels. The panelboards will have a minimum of 25% spare for future use.

Emergency Power Distribution

Emergency power for the Saskatchewan Drive Residence is currently being reviewed to determine the feasibility of providing a natural gas generator to provide emergency power to the life safety systems vs. providing battery units for these systems. Emergency power system will be designed to accommodate base building life safety systems including fire alarm, lighting systems and the elevator. No mechanical equipment is proposed to be connected to the generator. The calculated load is estimated to be approximately 48 kW. A 75 kW, 120/208V generator is recommended if this is the approach the project takes. All emergency power loads will be supplied from 120/208V, 3-phase, 4-wire distribution systems. A sufficient number of 120/208V panelboards will be located in the suite areas to maintain required voltage levels.

Note: Further review is required by the University of Alberta to determine the feasibility of providing a generator.
Storage rooms and utility rooms to be complete with local on/off combination occupancy switches with vacancy setting: manual on, auto off.

Central time clock control. All general building lighting, with the exception of suites and low-usage areas will be controlled using a central time clock via the centralized addressable system.

The control system is being provided to meet the requirements of the Green Globes program and intended to not only increase user comfort and ease of maintenance, but to reduce the energy usage in the building.

The general lighting source to be used in the facility will be LED. Reasonable attempts will be made to limit the number of different fixture types, while providing good quality lighting. The rationale for using LED lamps is their low power consumption, high lumen efficacy, above-average color rendering properties, ability to dim and lower maintenance and upkeep costs.

Decorative lighting will also be provided in select areas. Further discussion with the University of Alberta and Architect required to confirm extent of decorative lighting.

Fire Alarm System

The fire alarm system will be a single-stage, annunciated, class A-wired and electrically supervised system. Zoning of the fire alarm system will be based on smoke zone subdivision. System devices will be of the addressable type and will consist of manual pull station, products-of-combustion detectors, thermal detectors, and sprinkler flow valves.

Fire alarm sounding devices will be of the audible and visual (strobe) type in compliance with the latest Alberta Barrier-Free Code requirements. System devices will be of the addressable type and will consist of manual pull stations, products-of-combustion detectors, thermal detectors, and sprinkler flow valves.

Main Fire Alarm Control Panel will be located in the Main Telecommunication Room in the basement, Main Fire Alarm Annunciator Panel will be located at the main west entrance.

No fire phones will be provided.

In-suite notification devices will not be used in suites; note that suite signaling will include a speaker circuit dedicated to the suites per floor and a separate speaker circuit per floor dedicated to common areas.

Smoke detectors will be used in all suites and connected to the main fire alarm system.

The fire alarm system will also be interconnected into the campus wide FM Net system and Mass Notification System.

The network connection will be at the FACP, not the annunciator. The FACP will be a standard transponder interface annunciator only. It will require a dedicated 120VDC circuit, and will consist of an 8-line display, remote microphone, control switches for paging and bypasses, and a spare tub for mounting a graphic. FACPs will include the same functionality (display, microphone, switches, graphic, etc.)

6. Occuancy sensors will be provided in all public areas including corridors, dining room, offices, washrooms, and similar spaces.

7. Storage rooms and utility rooms to be complete with local on/off combination occupancy sensor switch.

8. Suites: Lighting control within suites to be a combination switch/sensor with ‘vacancy’ setting: manual on, auto off.

9. Central time clock control. All general building lighting, with the exception of suites and low-usage areas will be controlled using a central time clock via the centralized addressable system.

10. The general lighting source to be used in the facility will be LED. Reasonable attempts will be made to limit the number of different fixture types, while providing good quality lighting. The rationale for using LED lamps is their low power consumption, high lumen efficacy, above-average color rendering properties, ability to dim and lower maintenance and upkeep costs.

11. Central time clock control. All general building lighting, with the exception of suites and low-usage areas will be controlled using a central time clock via the centralized addressable system.

12. Within elevators:

a. All perimeter doors complete with door contacts for monitoring.

b. Select room locations within the facility as per University of Alberta requirements.

13. The team will be engaged in detailed discussions with the University of Alberta user groups and facility management staff to define which additional doors require card access.

At the present, the project will allow for the installation of conduit and cabling system complete with all necessary power supplies. Devices and head-end equipment will be provided by the University of Alberta.

Security Systems

Security design requires further discussion with the users and Architect; however, it is envisioned that the courtyard will contain security television pan tilt zoom cameras with head-end equipment located within the communication rooms. Specific locations being considered for closed-circuit television (CCTV) monitoring are as follows:

- CCTV at all entrances mounted on building perimeter as required.
- Blue phone on the West side of the building off 111st with viewing camera in the area.

In addition to the above, glass break sensors will be provided in main floor spaces such as fitness room, recreation rooms, quiet study.

Emergency Blue Phone System

Blue phones will be provided as required to meet the overall campus requirements. Discussions to date involved providing blue phones within the courtyard area but further review is required.

Clock System

GPS wireless clock system will NOT be provided.

Public Address system

A building wide public address system will NOT be provided.

Mass Notification System

A Mass Notification system will be deployed throughout the facility and will be fully integrated with the Campus wide system connected through the fire alarm system interface. The system will incorporate text to speech functionality through the fire alarm system speakers. Marque messaging boards and Alertus panels will be provided throughout and will require further coordination with the University for locations.

Communication Infrastructure

Incoming service will be provided by the Electrical Contractor via underground fibre and copper lines fed from International House located to the South of this facility.

Main Communication Room – Service Entrance

Main Communication room – will be located in the basement to house telephone/data, demarcation point, fire alarm and security head end systems.
Communication Rooms
Sub Communication Rooms will be located in the North and South wings on the main floor. Communication closets – will be located in the South wing.
Communication Rooms on each floor will also house all the switches for data/voice and wireless infrastructure. In addition, (where required), the Communication Rooms will house IP-based building access and controls, fire alarm and security systems.
Each of these rooms will support the University of Alberta’s needs for equipment, cabling and access control. Further review is required with the University of Alberta ICT group.

Structured Cabling Pathways
Communications cabling will be installed in conduits and routed to the nearest zone box. A larger conduit will be provided to route back to the nearest communication room.

C. AV outlets located beneath the LCD screens
USB outlets to be provided in various locations
Lighting controls to be interconnected with AV system
TV locations to be provided in Lobby area and Fitness room
Sound system complete with three zones: City Room, Terrace, Lobby area.
USB outlets to be provided in various locations
Seating Area:
Provision for sound system throughout connected into AV system
No overhead projector requirements
Student Union TVs to be provided in these areas with the exception of the Dorms
Data outlets to be provided in various locations
Speaker and microphone system to be provided
Overhead projector with screen on east wall
Sound system complete with three zones: City Room, Terrace, Lobby area.
LCD screen in lobby area to be provided with power and data provisions
Lighting controls to be interconnected with AV system

Audio Visual and IT requirements
The following spaces have been classified to provide different levels of audio-visual and IT requirements. Further review and confirmation is required by the University of Alberta:
Tier 1 Classification (Dorms, Main Floor Seating Area, Lobby area, Fitness Room):
- Data outlets to be provided in various locations
- USB outlets to be provided in various locations
- TV locations to be provided in Lobby area and Fitness room
- Student Union TVs to be provided in these areas with the exception of the Dorms
- Seating Area:
Tier 2 Classification (Social Spaces, Recreation Room):
- Data outlets to be provided in various locations
- USB outlets to be provided in various locations
- Smart LCD TVs to be provided within these spaces complete with conduit rough in for capability of having laptops and gaming consoles plug into TV – for HDMI and USB connections.
- Provide sound system locally in the space connected back to AV rack with inputs
- No overhead projector requirements
Tier 3 Classification (Dining Room):
- Data outlets to be provided in various locations
- USB outlets to be provided in various locations
- Provision for sound system throughout connected to AV system
- Overhead projector and screen on west wall
- Provision for two-way conferencing capabilities in various areas where floor boxes are located.
- Provide LCD monitors - for digital displays - total of 3
Tier 4 Classification (Conference Room):
- Data outlets to be provided in various locations
- USB outlets to be provided in various locations
- Provide two (2) LCD or SMART board screens complete projector and video conferencing capabilities at front of room
- Speaker and microphone system to be provided
- Floor box outlets located beneath table with power and data
- AV outlets located beneath the LCD screens
- No overhead projector requirements

Tier 5 Classification (City Room):
- Data outlets to be provided in various locations around perimeter
- USB outlets to be provided in various locations around perimeter
- Provide two (2) LCD or SMART board screens complete with projector and video conferencing capabilities at front of room
- Speaker and microphone system to be provided
- Floor box outlets located beneath tables with power and data
- AV outlets located beneath the LCD screens
- Overhead projector with screen on east wall
- Sound system complete with three zones: City Room, Terrace, Lobby area.
- LCD screen in lobby area to be provided with power and data provisions.
- Lighting controls to be interconnected with AV system

Wireless Local Area Network
With the exception of mechanical rooms and areas sensitive to radio frequency interference (RFI), this facility will contain a complete 802.11bg enterprise designed wireless infrastructure consisting of access points, network switches, servers, wireless local area network (WLAN) controllers and the necessary cabling infrastructure as required. It is our understanding that the University of Alberta has conducted a review of existing WLAN technologies for capable enterprise wide wireless wide area network (WWAN) solutions and has decided on a Cisco system provider. The Saskatchewan Drive Residence wireless solution will be an extension of the campus wireless system. It is also anticipated that there will be wireless hot-spots offered for the general public.

Although not requested at this time, the wireless network will be designed to incorporate the use of Voice over IP Wireless phones. This will require an access point distribution that supports e911 triangulation. Unlike data that can be resent if lost or damaged, voice communication is highly susceptible to drop out. Data communication success over a WLAN depends mostly on WLAN localized bandwidth and security. Combining the needs of voice and data will require an access point distribution with 20% overlap with minimum cell edge signal strength shall of –70 dbm and a minimum Signal to Noise Ratio of 25 dB and numbers sufficient to maintain high speed communication.

The density of access points in most areas will be spaced a maximum of 10 to 20m based on the level of usage required. Further review will be required.

To reduce installation costs, ‘Power Over Ethernet’ will power access points.

9.5 Mechanical Systems
All motors 0.25kW and smaller will be single-phase 120V and all motors at 0.37kW and larger should be 400V, 3-phase. The supply and installation of all motor protection switches, starters, and disconnect switches for mechanical equipment will be provided by the electrical contractor. Time delay relays will be provided for all motors 18.5kW (25hp) and larger. A disconnect switch will be provided for and at each motor. Motor control centres of the grouped design should be utilized where large quantities of mechanical equipment are located such as at wet mechanical rooms, penthouses, etc. In order to reduce capital costs of equipment and allow more effective use of mechanical room space, VFD controlled motor loads will be fed from Distribution Centres (CDP) rather than Motor Control Centres. Energy consumption of all HVAC loads is required to be measured for the Green Globes measurement and verification credit.

The variable speed drive starters (VFDs) and electrical equipment to be grouped away from wet, dry, or hot areas.

SASKATCHEWAN DRIVE RESIDENCE DESIGN DEVELOPMENT REPORT | GEC ARCHITECTURE | MAY 2014

53
9.6 Commissioning and Testing
In a project of this nature it is imperative that the commissioning and testing of major electrical equipment and systems be undertaken by a commissioning and testing agency. This work will include necessary verification and start-up procedures. Operation and Maintenance manuals incorporating copies of shop drawings, complete schematic diagrams, recommended maintenance schedules, and logs, system operation write-ups, test results, and safety procedures will form part of the electrical contractor’s scope of work.

9.7 Electrical Calculations
The building area, including basement is 7920 square meters.

Power Demand Calculation Based on Typical Building Power Consumption

Power Loads = 30W/m²
Mechanical Loads = 30W/m²
Lighting Loads = 7W/m²
Estimated Demand = 67W/m² × Building Area = 530.64 kW

Minimum transformer sizing @ 80% loading of transformer = Estimated Demand ÷ 0.8 = 663.3 kVA

Next available transformer size is 750 kVA.

Power Demand Calculation Based on CSA 22.1-12 (CEC 2012) Section 8-208

Total Area = 20 W/m² = 158.4 kW
Estimated Mechanical Load = 30W/m² × Building Area = 237.6 kW
Estimated Lighting Load = 7W/m² × Building Area = 55.44 kW

Miscellaneous Loads:
Fridge [in each unit] = 750 W × 143 Units = 107.25 kW
Elevators = (25 HP × 745.6 W/HP) × 2 = 37.28 kW
Coin Laundry = 3 (Floors 2, 3 and 4) × 6 sets per floor = 18 sets at 6000 W = 108 kW
Each set = Washer + Dryer = 1000 W (typical) + 5000W (based on 80% loading of 30A-3P (26-744)) = 6000 W
Total Connected = 701.97 kW

Section 8-208 (2)(b): Demand Calculation for building in excess of 900m²

Estimated Overall W/m² = 701.97 kW ÷ 7920m² = 8.83 W/m²

Estimated Demand = Electric Space Heating Load + 80% of Load per m² for first 900m² +65% of Load per m² of remaining
= 0.8 ÷ 7W/m² × 900m² + 0.65 × 7W/m² × 7920m²
= 448.24 kW

Minimum transformer sizing @ 88% loading of transformer = Estimated Demand ÷ 0.8 = 585.3 kVA

Next available transformer size is 750 kVA.

Generator Sizing: Life Safety System Only

Estimated Load:
Fire Alarm = 1000 W
Emergency lighting = Assuming ½ of light fixtures will be on-emergency
= ½ ÷ 7W/m² × 7920m² = 18.48 kW
Fire Fighter’s Elevator = 25HP × 745.6 W/HP = 18.64 kW
Estimated Emergency Load = 38.12 kW
Minimum transformer sizing @ 88% loading of generator = Estimated Emergency Load ÷ 0.8 = 47.65 kW

Next available transformer size is 50 kW.

Power Information Based on Typical Building Power Consumption
SMP Project Number: 14-04-4490
Building Name: U of A Saskatchewan Drive Residence
Building Detail: Number of Floors: 5, Area: 7920m²

Connected Load:
Lighting:
Mechanical:
Power:
Miscellaneous:
Total: 792 kW

Estimated Demand:
Lighting: 55.44 kW
Mechanical: 237.6 kW
Power: 237.6 kW
Miscellaneous: Total Demand: 530.84 kW

*The information shown is estimation based on typical commercial building connected and demand loading. Refer to calculations in Appendix for more information.
APPENDIX A: GREEN GLOBES CHECKLIST
### 1.2 Environmental Management During Construction

#### 1.1 Pre-Design IDP Meetings: Additional Details

- Are IDP progress meetings required before completion of:
  - Design Development? (0.4)
  - Concept Design? (0.5)
  - Construction Waste Diversion? (0.5)
  - Life cycle impact? (0.5)
  - Water conservation, efficiency and reuse? (0.5)
  - Indoor Environment? (0.5)
  - Envelope? (0.5)
  - Site design? (0.5)

- Were qualitative green goals established in pre design process? (2)

#### 1.2 Environmental Management System

- Environmental Risk Management Strategies?
- Source control?
- HVAC protection?
- Vehicle idling reduction directive?
- Weather tight and dry envelope before installation of interiors?

#### 1.3 Environmental Management System

- Total Section Points - Project Management: 50

#### 2. Site - Sensitive Areas

- Does the design include:
  - avoidance of reflections (internal screens, awnings, sunshades, mirrors)?
  - avoidance of glare (vertical and horizontal)?
  - avoidance of transparency (skylights and clerestories)?
  - avoidance of reflections (external mirrors, curved/wavy, 3D art, rain gutters, etc.)?

### 2.2 Ecological Impacts - BIo-Diversity

#### 2.2.1 Limit Construction Disturbance

- Design project to avoid significant areas of vegetation and other ecological resources?
- Avoidance of significant areas of tree and shrub canopy?
- Protection of significant areas of building materials?

#### 2.2.2 Tree Integration

- Tree Integration Plan or Best Practices?
- Tree preservation measures?
- Tree replacement plan?

#### 2.2.3 Tree Preservation Plan or Best Practices

- Tree preservation measures?
- Tree replacement plan?

#### 2.2.4 Heat Island Effect: East and West

- Enhanced and reflective surfaces?
- Use of non-reflective materials?
- Use of high reflectance materials?

#### 2.2.5 Building Materials

- Use of natural, recycled, or salvaged materials?
- Use of locally sourced materials?
- Use of materials with low embodied energy?

### 3. Cx Guide for New Buildings

- Will Cx follow CSA Z320 or ASHRAE 0-2005 annex L or NRCan?

### 4. Life cycle impact

- Who will be responsible for these should be confirmed.

### 5. Water conservation, efficiency and reuse

- Water conservation measures?
- Water efficiency measures?
- Reduced use of potable water for non-potable purposes?

### 6. Indoor Environment

- Indoor environment quality measures?
- Indoor air quality measures?
- Indoor noise reduction measures?

### 7. Envelope

- Building envelope tightness?
- Building envelope maintenance?
- Building envelope repair?

### 8. Site design

- Site design for maximizing solar?
- Site design for minimizing stormwater runoff?

### 9. Site

- Site development plan?
- Site development standards?
- Site development metrics?

### 10. Cx Guide for New Buildings

- Will Cx follow ASHRAE 0-05?

### 11. Cx Guide for New Buildings

- Cx Guide for New Buildings?
- Cx Guide for New Buildings?

### 12. Cx Guide for New Buildings

- Cx Guide for New Buildings?
- Cx Guide for New Buildings?

### 13. Cx Guide for New Buildings

- Cx Guide for New Buildings?
- Cx Guide for New Buildings?
<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Condition</th>
<th>Points</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4.1 Storm Water Management Plan</td>
<td>In place in accordance with the local stormwater management plan and manages non-structural and structural stormwater control measures</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.4.2 Stormwater controls for protection of natural water bodies</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
<td></td>
</tr>
<tr>
<td>2.4.3 Landscaping and Irrigation Plan</td>
<td>The design plan includes a landscaping and irrigation plan developed by a landscape architect, certified horticulturalist, or certified irrigation practitioner.</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.4.4 Landscaping: Plant Selection</td>
<td>The site contains a minimum of 50% native species</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.4.5 Landscaping: Soils and Organic Mulch</td>
<td>The site contains a minimum 50% organic mulch to reduce erosion and soil loss</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.4.6 Landscaping: Plant Grouping</td>
<td>Plants grouped with similar water needs</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.4.7 Landscaping: Invasive Plants</td>
<td>The site contains a minimum of 50% invasive plants</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.5.1 Green Roof</td>
<td>The site contains a minimum of 50% green roof</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.5.2 Green Wall</td>
<td>The site contains a minimum of 50% green wall</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>2.5.3 Urban Agriculture</td>
<td>The site contains a minimum of 50% urban agriculture</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.2.1 Power Demand Reduction: Monthly</td>
<td>More than 30% reduction below non-reduced peak</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.2.2 Power Demand Reduction: Yearly</td>
<td>More than 75% reduction below non-reduced peak</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.2.3 Power Demand Reduction: More than 85%</td>
<td>More than 85% reduction below non-reduced peak</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.2.4 Electrical Power Systems</td>
<td>Meets electrical power system requirements for MNECB Code</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.3.1 HVAC</td>
<td>The design includes efficient HVAC systems, including a high efficiency chilled water system, and is developed by a mechanical engineer, certified horticulturalist, or certified irrigation practitioner.</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.3.2 Lighting</td>
<td>The design includes efficient lighting systems, including a high efficacy system, and is developed by an electrical engineer, certified horticulturalist, or certified irrigation practitioner.</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.3.3 Irrigation</td>
<td>The design includes efficient irrigation systems, including a high efficiency system, and is developed by an irrigation practitioner.</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>3.3.4 Daylighting</td>
<td>The design includes efficient daylighting systems, including a high efficacy system, and is developed by an architectural designer, certified horticulturalist, or certified irrigation practitioner.</td>
<td>N/A</td>
<td></td>
<td>Details not available.</td>
</tr>
<tr>
<td>Total Section Points - Site</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.7 Other HVAC Systems and Controls -

3.7.1 Minimizing or Eliminating Reheat and Reburners -

3.7.2 Incremental Cooling Equipment Improvement -

3.7.3 Fans and Ductwork: Variable Speed Efficiency -

System able to be set at or below 208 K (65°F) -

- Durable elbow support is provided when flexible ductwork is stretched.
- Flexible ductwork is no longer than 1.5 m (5 ft.) when fully stretched.

Are there the following requirements for flexible duct work?

- Duct distribution system includes:
  - Supply and return ducts to pressure drop no greater than 4 x 10⁻⁴ in.w.c.h.
  - Supply and return ducts to pressure drop no greater than 4 x 10⁻⁴ in.w.c.h.

3.7.4 Demand Controlled Ventilation: CO₂ monitoring -

3.8.1 Elevators and Escalators: Escalators Use Easiest Access -

3.8.2 Other Fixed Energy Efficient Equipment -

3.9 Renewable Sources of Energy -

3.9.1 On-site Renewable Energy: % of Energy Needs -

- Lighting not designated for dusk-to-dawn controlled by a photo sensor or astronomical time switch with 10-hour backup.
- Lighting not designated for dusk-to-dawn controlled by a photo sensor or astronomical time switch with 10-hour backup.

- Non-residential lavatory faucets 1.9 L/min or less
- Residential lav faucets 5.7 L/min or less
- Urinals 1.9 L or less

- Clothes washers will comply but dish washers might not have purchased green power to be discussed with the owner.
- Clothes washers will comply but dish washers might not have purchased green power to be discussed with the owner.

3.10 Energy Efficient Transportation -

3.10.1 Site Is within 400 m of Public Transit -

- Urban transit stops within 400 m of the site.

3.11 Water -

3.11.1 Water Conservation -

- Is there an appropriate water management plan in place?
- Is there an appropriate water management plan in place?

3.12 Energy -

3.12.1 Energy Conservation -

- Is there a central Building Automation System (BAS) that will control the building systems?
- Is there a central Building Automation System (BAS) that will control the building systems?

4. Water -

4.1 Water Consumption -

- Non-residential lavatory faucets 1.9 L/min or less
- Residential lav faucets 5.7 L/min or less
- Urinals 1.9 L or less

4.2 Domestic Water Use Efficiency -

- Water system includes:
  - Non-residential lavatory faucets 1.9 L/min or less
  - Residential lav faucets 5.7 L/min or less
  - Urinals 1.9 L or less
The project team confirmed that these requirements would be available for this project.

- **4.5 Water Treatment - Reverse Osmosis - Feature**
  - Reverse osmosis systems consuming less than 1.5 L/min of water are preferred. Reverse osmosis systems consuming less than 1.5 L/min of water are preferred.
  - Please confirm. Might be N/A.

- **4.5 Water Treatment - Filtration System Pressure Drop Gauge -**
  - A filtration system pressure drop gauge is included. A filtration system pressure drop gauge is included.
  - N/A 2 N/A for this project.

- **4.4 Water Intensive Applications - Commercial Food Service Equipment -**
  - Commercial food service equipment destroys at least 95% of bacteria, viruses, and parasites in food. Commercial food service equipment destroys at least 95% of bacteria, viruses, and parasites in food.
  - N/A 2 N/A for this project.

- **4.4 Laundry Equipment - Washing Machines -**
  - Single-load, front-load, or front-loading washing machines with all of 1.5 gal/min or less. Multi-load washing machines with all of 4.0 gal/min or less.
  - Please confirm. Might be N/A.

- **4.4 Laundry Equipment - Water Factor of Water Softeners -**
  - Water softeners equipped with recharge controls based on volume of water treated or hardness, and not on timers.
  - Not included in the current design. Can be marked N/A if no further information is available.

- **4.6 Alternate Sources of Water - Water harvesting on-site and reclaimed?**
  - The building design uses materials efficiently compared to designs from an existing building on site. The building design uses materials efficiently compared to designs from an existing building on site.
  - N/A 6 6 To be included in the specification and tender documents.

- **5.3.3 Non-Structural Elements - Furnishings reused**
  - Existing houses on site might be usable. To be investigated.
  - 1 1 Existing houses on site might be usable. To be investigated.

- **5.6.2 Multi-functional Assemblies - Functions of multi-functional assemblies?**
  - The mechanical, electrical, plumbing, and energy generation systems from an existing building on site retained in new design.
  - N/A 5 6 The project team confirmed that these items would all be included.

- **5.6.3 Deconstruction and Disassembly - Does the building design facilitate future deconstruction, functions?**
  - The building design facilitates future deconstruction, functions.
  - 1 1 To be investigated further.

- **5.4.2 Operational Waste - Features of operational waste management program**
  - Storage areas for recyclable waste at points of service.
  - To be investigated further.

- **4.4 Water Intensive Applications - Water Factor of Laundry Equipment -**
  - Laundry equipment is designed to be recycled and/or salvaged.
  - 5 To be included in the specification and tender documents.

- **5.4.1 Laboratory and Medical Equipment - Water intensive machinery**
  - Water-intensive machinery includes refrigerators, digital X-rays, MRIs, CT scans, etc. Water-intensive machinery includes refrigerators, digital X-rays, MRIs, CT scans, etc.
  - N/A 1 N/A for this project.
The project team confirmed that these requirements would be included in the specifications.

The GG requirements will be reviewed and analyzed further before a recommendation is made.
### Summary of Requirements

<table>
<thead>
<tr>
<th>Section</th>
<th>Requirement</th>
<th>Points</th>
<th>Yes</th>
<th>Maybe</th>
<th>No</th>
<th>N/A</th>
<th>Commentary</th>
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</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Section 5.1: Ventilation - Ensuring proper ventilation and air quality</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Section 6.1: Lighting - Energy efficiency and comfort</td>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Section 7.1: Materials - Ensuring indoor air quality</td>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Section 8.1: Equipment - Ensuring proper installation and maintenance</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Detailed Requirements

#### Section 5.1: Ventilation
- **Ventilation Intakes and Exhausts - LANDSCAPE:**
  - EZ value ≥ 0.9 (Choose Path A, B, or C)
- **Ventilation - LANDSCAPE:**
  - Roof drainage slopes away from outdoor air intakes? (1 pt)
  - Outdoor air inlets/outlets, including louvers and rain hoods, are physically separated from areas with sources of combustion? (1 pt)
  - The unobstructed area of the opening measures at least 2.3 m²? (1 pt)
  - Drain pan is sufficiently wide to span the cooling coils and is properly pitched? (1 pt)
  - Drain opening is located at the lowest point of the drain pan? (1 pt)

#### Section 6.1: Lighting Design And Systems
- **Lighting Design And Systems - LANDSCAPE:**
  - What % of task areas were designed to have views to the outdoors? (1 pt)
  - Are there shading devices on southern, western, and eastern exterior or atria within 7.6 m from a window? (1 pt)
  - Site-specific assessment of radon potential has been performed and/ or suggested recommendations? (1 pt)
  - Are adhesives/sealants specified that comply with Green Globes Table 3.7.2.1.4: Floor and Floor Coverings? (1 pt)

#### Section 7.1: Materials
- **Materials - LANDSCAPE:**
  - VOC limits in Green Globes Table 3.7.2.1.1: Adhesives and Sealants VOC Limits? (1 pt)
  - Paint VOC limits in Green Globes Table 3.7.2.1.3: Paint VOC Limits? (1 pt)
  - Are paints specified that comply with prescribed limits of VOCs? (1 pt)
  - Are adhesives/sealants specified that comply with Green Globes Table 3.7.2.1.4: Floor and Floor Coverings? (1 pt)
  - Are there ventilation controls at key equipment locations? (1 pt)

#### Section 8.1: Equipment
- **Equipment - LANDSCAPE:**
  - Are ventilation controls at key equipment locations? (1 pt)
  - Are ventilation fans new systems of Blower, supply air systems with multiple air handling units? (1 pt)
  - Are air handling equipment equipped with MERV 13 filtration? (1 pt)

### Notes
- The project team reviewed all of the criteria and confirmed that the design will comply.
- The project team reviewed the criteria and confirmed that the design will comply.
- The project team reviewed the criteria and confirmed that the design will comply.
- The project team reviewed the criteria and confirmed that the design will comply.

Summary of Requirements

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
<th>Requirement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Comfort Strategies</td>
<td></td>
<td>- Spaces are designed with thermal control zones that are in keeping with the project's thermal comfort strategy.</td>
</tr>
<tr>
<td>Lighting Design</td>
<td></td>
<td>- Average luminance remains within the acceptable range for given luminaire angles.</td>
</tr>
<tr>
<td>Acoustic Comfort Design</td>
<td></td>
<td>- The design meets or exceeds Reverberation Time requirements.</td>
</tr>
<tr>
<td>Mechanical, Plumbing, and Electrical Systems</td>
<td></td>
<td>- The design complies with minimum Sound Transmission Class (STC) requirements.</td>
</tr>
</tbody>
</table>

Commentary

The project team reviewed the criteria and confirmed that the design will comply. Dining area approx 3400 ft² and a single health clinic, classroom, or an exterior wall? (1 pt)

The design will target this measure and calculations will be carried out to confirm compliance.

The project team reviewed the criteria and confirmed that the design will comply. Dining area approx 3400 ft² and a single health clinic, classroom, or an exterior wall? (1 pt)

The design will target this measure and calculations will be carried out to confirm compliance.

The design will target this measure and calculations will be carried out to confirm compliance.

The design will target this measure and calculations will be carried out to confirm compliance.
## Summary of Requirements

<table>
<thead>
<tr>
<th>Available Points</th>
<th>Yes</th>
<th>Maybe</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
</table>

## 23rd April 2014: Preliminary Green Globes Canada Checklist

**7.5.2 Mechanical, Plumbing, and Electrical - Background sound levels of mechanical systems**

- Does the design comply with minimum background sound levels associated with mechanical systems as follows:
  - Airborne sound power levels from HVAC unit do not exceed the Room Criteria detailed in ASHRAE Systems Application Handbook 2007, Chapter 47, Table 42 for listed spaces when HVAC units are in operation? (1 pt)
  - Spaces are designed such that room background noise using the Room Criteria ratings complies with Table 42. (1 pt)

2 To be researched further against GG criteria

**7.5.2 Mechanical, Plumbing, and Electrical - Airborne noise from HVAC system**

- Does the design minimize airborne noise from the HVAC system using the following measures:
  - Duct transitions spread out and graduated to minimize generation of turbulence and air flow separations? (0.5 pt)
  - Secondary attenuators located immediately downstream of duct fittings that would otherwise generate noise? (0.5 pt)
  - Air flow velocities in low pressure ductwork did not exceed the following values? For main duct trunk lines: 900 f/m; For branch ducts: 700 f/m; For final run outs: 400 f/m; For main vertical ducts in shafts: 1200 f/m. (0.5 pt)
  - Where significant cross talk paths exist between two habitable spaces, there are sound attenuators and/or silencers, or ducts are designed in a “Z” configuration? (0.5 pt)
  - HVAC grilles and diffusers comply with ANSI/ASA S12.60-2010/Part 1? (0.5 pt)

2.5 To be researched further against GG criteria

**7.5.2 Mechanical, Plumbing, and Electrical - Structure-borne noise from HVAC system**

- Does the design minimize structure-borne noise from the HVAC system using the following measures?
  - Fans and other powered HVAC equipment acoustically separated from the structure using vibration isolators? (1 pt)
  - Ducts supported on resilient mounts to isolate them from structural system, and ducts isolated using resilient material where they pass through walls? (1 pt)

2 To be researched further against GG criteria

**7.5.2 Mechanical, Plumbing, and Electrical - Noise from plumbing system**

- Does the design mitigate noise from the plumbing system using the following measures?
  - Piping was not run above quiet areas and learning spaces with the exception of sprinklers and radiant heating systems? (0.5 pt)
  - Waste water piping noise mitigated using cast iron pipe or with acoustic insulation above quiet areas and learning spaces, and a water hammer arrester was used? (1 pt)

1.5 To be researched further against GG criteria

**7.5.2 Mechanical, Plumbing, and Electrical - Electrical system noise minimization best practices**

- Does the design comply with the following best practices to minimize noise from the electrical system?
  - Low-noise ballasts installed in quiet areas and all other areas where speech intelligibility is important? (1 pt)
  - Noise from light fixtures and other electrical fixtures does not exceed values indicated in ANSI/ASA S12.60-2010/Part 1? (1 pt)

2 To be researched further against GG criteria

## Total Section Points - Indoor Environment

<table>
<thead>
<tr>
<th>Points</th>
<th>150</th>
<th>117</th>
<th>15</th>
<th>10</th>
<th>8</th>
</tr>
</thead>
</table>
### Occupant Loads

<table>
<thead>
<tr>
<th>FACILITY COMPONENTS</th>
<th>UNITS</th>
<th>G.F.A. (s.m.)</th>
<th>AREA PER PERSON (s.m.)</th>
<th>OCCUPANT LOADS</th>
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**UNIVERSITY OF ALBERTA**
**SASKATCHEWAN DRIVE RESIDENCE**
**PROJECT NO. 5361**

**ISSUED FOR DESIGN DEVELOPMENT**
**MAY 2, 2014**
THIRD FLOOR FRAMING
FIFTH FLOOR HEATING AND COOLING PLAN
M105
1
1:100
A 2014.05.02 USL ISSUED FOR DESIGN DEVELOPMENT DRAWING SET

T-MEv9-20130118

Edmonton, Alberta

FACILITIES AND OPERATIONS

Sheet Drawing Number

Dwg. Created By

Proj. Number

Building Dwg

Title

Work Order Number

Design File No.

Peter Lougheed Leadership Initiative
Saskatchewan Drive Residence

LEGEND

PROPOSED SITE

GRADING PLAN

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APPENDIX D: OUTLINE SPECIFICATIONS
This Outline Specification is based on the CSC/CSI UniFormat for Building Construction. Proposed assemblies and systems are presented in this manner to assist the Owner, Construction Manager/Cost Consultant, the Prime Consultant and their Consultants determine appropriate methods of construction and confirm budget pricing.

Information from this outline specification will be used during Detail Design and preparation of the Project Manual (based on MasterFormat 04). It will also be used as a coordination tool for the Construction Manager and other Consultants.

### ELEMENT DESCRIPTION MASTER FORMAT

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<td>Includes for excavation, formwork, cast-in-place structural concrete, reinforcement, backfill and compaction, and interior wall finish.</td>
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<td>Waterproofing: Hot Rubberized Asphalt Waterproofing</td>
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<td>- Rubberized asphalt, to CAN/CGSB-37.50-M89, one of the following accepted materials: Hydeotech 6125MM, Henry 790-11, Tremco TREMproof 6100, Carlisle CCW 500.</td>
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<td>- Drainage mat: dimpled polypropylene geocomposite, with a compressive strength of 550 kN/m², Delta-Drain 2000 as manufactured by Cosella Dorken</td>
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<td>Slab-on Grade</td>
<td>Include for Floor Flatness and Floor Levelness in accordance with design and ASTM E1155.</td>
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<td>Sub-Drainage System</td>
<td>As indicated in geotechnical report and as follows:</td>
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<td>- Perimeter drains should be provided on the outside of the footings below basement floor slab elevation to prevent hydrostatic pressure below the floor slab and against the basement walls.</td>
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<td>- Perimeter Drainage Systems: Provide 150mm diameter perimeter weeping tile complete with geotextile sock cover, coarse granular, free drawing fill surrounded by geotextile material.</td>
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<td>- Include for excavation, perforated pipe, drain boards, granular fill, filter fabrics, connection to storm sewer systems and rigid insulation. Backfill in accordance with Section 31 05 00.</td>
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<td>Includes structural elements required for support of floor and roof construction. Floor construction is primarily supported using structural steel columns</td>
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<td>The roof structure, with the exception of the dining hall and fifth floor city room, is comprised of pitched open web steel joist trusses. The flat roof over the interior hallway will be cantilevered from the bottom chord of the truss.</td>
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<tr>
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<td>The roof of the fifth floor city room will be conventional W-section steel joist framing. The dining hall roof will be exposed glulam timber construction.</td>
<td>05 12 00</td>
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<tr>
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<td>The elevator shaft and stair cores will be constructed of structural steel columns, beams and braces. These elements will provide the lateral force resisting system.</td>
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<td>The basement floor slab and main floor slab where there is no basement will consist of concrete slab on grade. The main floor slab over the basement, and the remainder of the floor slabs will consist of concrete / steel composite floors.</td>
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<td>The roof deck, with the exception of the dining hall, will be steel deck spanning between open web steel joist trusses, and spanning w-section steel joist framing on the fifth floor.</td>
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<td>The roof on the dining hall will consist of 12mm plywood on 140mm deep nailed/laminated timber panels, or locally sourced 130mm deep fluted WestDek panels supported on glulam beams.</td>
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<td>Fireproofing and Firestopping</td>
<td>Includes sprayed cementitious, non-fibrous fire rating materials at steel structure supporting floors and occupied roofs. A one hour fire rating is to be achieved throughout.</td>
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<td>Intumescent paint to exposed structural steel columns on the main floor as noted on drawings.</td>
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<td>Intumescent coating on glulam beams in dining hall.</td>
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<tr>
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<td>Include materials installed in cavities, around pipe penetrations, and other openings in floors and between floors and curtain walls to prevent spread of fire and smoke.</td>
<td>07 84 00</td>
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SASKA TCHEWAN DRIVE RESIDENCE DESIGN DEVELOPMENT REPORT

B.2 Exterior Wall Elements

B.2.1 Brick Cladding System

Deep red iron spot brick is the primary cladding on the main floor, stair cores and vertical service spaces.

90mm Interstate Ironstone L-4 brick veneer to be installed as a part of a rain-screen system.

Steel Stud back-up wall to be clad in 13mm exterior gypsum sheathing, self-adhering membrane air/vapour barrier, semi-rigid mineral fibre insulation. Provide a 35mm air space between the insulation and brick veneer.

Pre-weathered graphite grey zinc shingles are used to define the residence blocks that sit above the main floor.

1mm pre-weathered graphite grey interlocking zinc shingles. Steel Stud back-up wall to be clad in 13mm exterior gypsum sheathing, self-adhering membrane air/vapour barrier, semi-rigid mineral fibre insulation and G.I. Z-bars. Provide an air space between the insulation and zinc shingles constituting of acoustic deck.

White fibre cement siding infill the exterior facades of the residential blocks.

8mm fibre cement lap siding – Hardipanel as manufactured by James Hardie Building Products.

Steel Stud back-up wall to clad in 13mm exterior gypsum sheathing, self-adhering membrane air/vapour barrier, semi-rigid mineral fibre insulation and G.I. Z-bars. Provide an air space between the insulation and zinc shingles constituting of acoustic deck.

B.3 Exterior Wall Protection Devices

B.3.1 Flashings

Roof, top of wall, through wall, jambs and heads of doors and windows, and other flashings required for project and complete building envelope shall be finished galvanized steel, 0.607 mm thickness.

Aluminium curtainwall and window sections shall have extruded aluminium sill flashings installed by window installer with custom finish to match frames.

B.4 Exterior Windows

B.4.1 Glass and Aluminum Curtain Wall Glazing System

High performance aluminum curtain wall framing for double glazed curtain wall system. Using manufacturer’s standard components, including glass reinforced nylon thermal break to form a rigid composite assembly without the use of fasteners or other thermal bridging elements. Vent and pressure equalize glazing pockets and drain to the exterior. Provide snap caps to locations and of sizes indicated on the drawings. Acceptable Products:

- Kawneer 1600 UT System 1
- Alumicor ThermalWall 2600 Series
- Engineered Aluminum Products Series 130 HP

Framing - Clear anodized aluminum finish.

Low thermal conductivity thermal separators either inert polymerized material or soft PVC.

Anti-rotational channels: PVC channels, minimum 2.1mm wall thickness, of size to suit glazing rabbet to curtain wall framing, one length piece per location.

Provide sealed insulating glass units meeting the requirements of CAN/CGSB-12.8-97 and ASTM E2190, comprised of two panes of glass factory sealed and separated by dehydrated air space. Thickness of glass for each pane determined by window size, snow loads and wind/suction loads but minimum glass thickness 6mm each pane; 25 mm total thickness for double glazed units.

Manufacture sealed insulating glass units using warm edge black spacers without edge channels, that is, with bare edges. Use two stage seal method of Manufacture.

Double glazed sealed units, c/w low-e coating Guardian Sunguard Superneutral 68 on surface #2, on 6mm clear glazing. Provide argon gas fill to sealed units.

10" deep Kawneer Versoleil single blade sun shade system on south exposures.
B.4.2. Glass and Aluminum Punched Window Glazing System

High performance aluminum framing for double glazed punched windows. Using manufacturer’s standard components, including glass reinforced nylon thermal break to form a rigid composite assembly without the use of fasteners or other thermal bridging elements. Vent and pressure equalize glazing pockets and drain to the exterior. Frame shall incorporate attachment mechanism for air/vapour barrier mechanical attachment. Acceptable Products:
- Kawneer 5525 IsoWeb

Framing - Clear anodized aluminum finish.

Provide sealed insulating glass units meeting the requirements of CAN/CGSB-12.8-97 and ASTM E2190, comprised of two panes of glass factory sealed and separated by dehydrated air space. Thickness of glass for each pane determined by window size, snow loads and wind/suction loads but minimum glass thickness 6mm each pane; 25 mm total thickness for double glazed units.

Manufacture sealed insulating glass units using warm edge black spacers without edge channels, that is, with bare edges. Use two stage seal method of Manufacture.

Double glazed sealed units, c/w low-e coating Guardian Sunguard Superneutral 68 on surface #2, on 6mm clear glazing. Provide argon gas fill to sealed units.

B.5 Exterior Doors

B.5.1 Aluminum and Glass Entrance Systems

Aluminum entrances to match exterior aluminum window and curtain wall systems.

Construct doors of porthole extrusions with minimum wall thickness of 3.2mm. Door Stile and top rail nominal 89mm, bottom rail nominal 165mm. Provide weather stripping on two sides and head of exterior doors, and sweep full width of bottom rail.

Thermally broken framing to match aluminum curtain wall framing specified in 08 44 00. Thermally broken doors: Kawneer 360 series.


Provide double glazed sealed units as specified for exterior windows and curtainwall in section 08 80 00.

B.5.2. Exterior Steel Doors and Frames

Exterior thermally broken frames consisting of galvanized steel, nominal 1.5 mm metal core thickness, primed ready for painting and having the following features:
- Fully welded frames reinforced as required to suit door opening requirements.
- Fill frames with polyurethane, low expansion foam-in-place insulation.
- Connect to building air/vapour retarder membrane.

Doors consisting of zinc wipe coated steel, nominal 1.5 mm metal core thickness, primed ready for painting and having the following features:
- Fabricated full-flush seamless, pan type with vertical and any other visible edges having seams continuously welded, filled and ground smooth.
- Polyurethane insulated core bonded to door skins having insulating value of nominal RSI 1.5.

Hardware will consist of institutional grade ball bearing bolts on average frequency doors and continuous hinges for high frequency doors, weatherstripping, thresholds, rim mounted panic devices, door closers, hex key dog operation, no lock cylinders on exterior.

Acceptable manufacturers: Greensteel Industries, Ltd.; Shannahan’s Ltd.; Spalding; or S.W. Fleming Limited.

B.5.3. Overhead Sectional Doors

Foam Core Composite Panel Doors consisting of zinc wipe coated steel, nominal 0.81 mm metal thickness, primed ready for painting with polyurethane foamed core. Electric motor operated.

Accessories: track, supports, weather stripping, hinges rollers and safety devices.

Acceptable manufacturers:
- Richards-Wilcox Canada Inc. “ThermaTite T-175”
- Wayne Dalton Company “Thermaspan 200/120”
- Steel-Craft Door Products Ltd. “Therm-O-Dor TD134”
- Overhead Door Corporation “Thermacore”
- Clopay Building Products Company Model 3603.

B.6 Soffits

B.6.1 Wood Soffit

The majority of soffits are to be cedar wood.

Smooth faced with crown grain, 19mm x 140mm "V" grooved, T&G western red cedar, “A” grade in accordance with NLGA rules. Trim species and grade to match. Nails to be hot dipped galvanized siding nails conforming to ASTM F1667. Cedar to be fire retardant impregnated.

Membranes as per 07 25 00.

Soffit vents: 100mm diameter, PVC ventilation plugs, insect proof, with vent area determined in accordance with CAN 3-A93-M82.
B.6.2 Zinc Shingle Soffit

Zinc shingle soffits as noted on drawings to match zinc cladding colour and size. 1 mm pre-weathered graphite grey interlocking zinc shingles attached to 38mm acoustical metal deck with back-up system as defined in soffit assemblies. Membranes as per 07 25 00. Soffit vents: 100mm diameter, PVC ventilation plugs, insect proof, with vent area determined in accordance with CAN 3-A93-M82.

B.6.3 Composite Metal Panel Soffit

4mm thick pre-finished composite metal panels fastened to z-bars with a concealed clip assembly. Back-up system as defined in soffit assemblies. Composite metal panels consisting of two sheets of 0.51 mm nominal thickness aluminum and a low density polyethylene core for nominal composite panels produced in a continuous process. Acceptable products: Alucobond for fire-rated panels, AP300 Rain Screen System; Reynobond; Accument; Alpolic. Membranes as per 07 25 00. Soffit vents: 100mm diameter, PVC ventilation plugs, insect proof, with vent area determined in accordance with CAN 3-A93-M82.

B.7 Roofing

B.7.1 SBS Roofing

Flat roofs to be roofed with 2-ply SBS roof membrane. Roofing membrane to be manufactured by Siplast or Soprema. Metal deck to be covered with moisture resistant gypsum roof deck sheathing to ASTM C1177, such as Dens-Deck Prime. Fastened with ARCA approved fasteners. Air vapour barrier membrane: self-adhered membrane with sanded surface on top face and to be compatible with roofing system, such as Soprelene 180 SP 3.5. Exposed Roofing Membrane:
- Base sheet to be factory applied to roof insulation board.
- Cap sheet: Acceptable products Paradiene 30 CR FR TG; Soprafast Flam HD GR.
- Base sheet: Acceptable products Paradiene 20TS SA, Soprafast Flam STICK.
- Cap sheet flashing to be same as cap sheet membrane.
- Expansion Joint Membranes: Soprajoint.

Isoxynatrate insulation installed in 50mm thick layers to achieve RSI value as indicated on the drawings. Acceptable products: Iso 95+ GL; AGFoam III; IKOTHERM III; SecurShield. Tapered Rigid polyurethane insulation as indicated on the drawings.

B.7.2 Standing Seam Metal Roofing

Pitched roofs to be roofed with Pre-weathered graphite grey zinc standing seam roof system on thermal clips. Standing seam roofing to be attached on both pitched steel trusses and wood deck. Exterior sheet to roofing: 1.00 mm pre patina JSM standing seam roof panels @ 500 o.c., one piece continuous panel length. Standing seam panels to be attached to 38 mm galvanized acoustic deck, flute orientation to follow roof slope; 2 rows of G.I. Z-bars; 2 layers 50mm semi-rigid mineral fibre insulation as ROXUL Cavity Rock (R30 Total); self-adhering membrane air/vapour barrier; gypsum sheathing; and steel roof deck. Accessories: cap flashings, drip flashings, internal valley flashings, external ridge flashings, copingst and closures, of same material and finish as roofing. Breakformed to shape. Waterproofing membrane: prefabricated, self-adhesive, flexible, composite of polystyrene sheeting and rubberized asphalt, non-slip sanded surface one side, high temperature resistant. Acceptable products: Grace “Ultra”; Henry Company Blueskin “PE200HT” (Winter grade only); Soprema Lastobond Pro-HT-S (for high temperature application). Bituminous primer as recommended by the membrane manufacturer.

B.7.3 Roof Pavers

600 x 600 x 50 mm precast concrete roof pavers installed level on adjustable pedestal system. Pedestals installed on 25 mm thick extruded polystyrene insulation pads on SBS roofing as described above.

C INTERIORS

C.1 Non-Rated and Rated Interior Partitions

C.1.1 Typical Interior Partitions (P1 & P2)

One layer of 16 mm gypsum board on each side of 92 mm studs (or greater) taped and sanded to AWCB Level 4, all surfaces finished with a minimum 3 coats of paint including primer.

C.1.2 Plumbing Walls (P3 & P9)

One layer of 16 mm moisture resistant gypsum board on each side taped and sanded to AWCB Level 4, all surfaces finished with a minimum 3 coats of paint including primer. Light gauge steel studs spaced at 400 o.c. walls will extend to underside of slab structure and have a channel type deflection cap. Top, sides and bottom of stud track will be sealed with acoustic sealant. Walls to receive tile shall have 13 mm cementitious board as a substrate for ceramic or porcelain tile finishes.
C.2.1 Hollow Metal Doors and Frames

- Interior frames consisting of galvanized steel, 1.519 mm metal core thickness, 150 mm (or greater) nominal depth with 50 mm face width. Frames shall be fully welded and reinforced as required to suit door opening requirements.

- Doors consisting of zinc-rite coated steel, 1.214 mm metal core thickness, primed ready for painting, fabricated full flush seamless, pan type with vertical and anu other visible edges having seams continuously welded, filled and ground smooth with a honeycomb core bonded to door skins, wired glass in exit doors. Acceptable materials: Greensteel Industries Ltd.; Shanahan’s Ltd.; or S.W. Fleming Limited.

- Hardware will consist of institutional grade ball bearing butt hinges, rim mounted panic devices, door closers, Series 4000-Grade 1 locks and latch-sets and other access controls to suit door functionality.

C.2.2 Wood Doors

- Architectural grade, premium doors, having structural laminated wood stiles and blocking, solid particleboard core, hot glued and having wood veneer finish.

- Wood doors shall be set in hollow metal frames.

- Hardware will consist of institutional grade ball bearing butt hinges, rim mounted panic devices, door closers, Series 4000-Grade 1 locks and latch-sets and other access controls to suit door functionality.

C.2.3. Wood Sliding Doors

- Architectural grade, premium doors, having structural laminated wood stiles and blocking, solid particleboard core, hot glued and having wood veneer finish. Door shall be sliding barn doors.

- Hardware will consist of institutional grade sliding door hardware.

C.3 Interior Windows

C.3.1 Pressed Steel Frames with Tempered Glass

- Interior frames consisting of galvanized steel, 16 ga. Metal core thickness, 150mm nominal depth with 50 mm face width. Frames shall be fully welded and reinforced as required to suit window opening requirements. Acceptable materials: Greensteel Industries Ltd.; Shanahan’s Ltd.; Spalding; or S.W. Fleming Limited.

- Clear Float Tempered glass engineered for opening size with a minimum thickness of 8mm.

C.3.2 Pressed Steel Frames with Wired Glass

- Interior fire rated frames consisting of galvanized steel, 16 ga. Metal core thickness, 150mm nominal depth with 50 mm face width. Frames shall be fully welded and reinforced as required to suit window opening requirements. Acceptable materials: Greensteel Industries Ltd.; Shanahan’s Ltd.; Spalding; or S.W. Fleming Limited.

- Fire rated wired glass with fire rating of 45 minutes.

C.3.3 Aluminum Frames with Tempered Glass

- Interior aluminum glass frames non-thermally broken frames: Kawneer Trifab VG 450 Centre Plane series.

- Clear Float Tempered glass engineered for opening size with a minimum thickness of 8mm.
**C.4 Stair Construction**

**C.4.1 Exit Stairs**
Structural steel stringers with concrete filled metal pan includes steel stair stringers that will be considered as structural steel components; requirements for certification and record keeping for steel stairs shall be the same for structural steel framing.

**C.4.2 Interior Railings**
Fire stairs with the exception of the north east stair include the following items: Steel railings including handrails and railings attached to stairs, steel pickets in guards, handrails attached to walls adjacent to stairs.

**C.5 Interior Specialties**

**C.5.1 Toilet Partitions**
Prefinished metal, floor mounted toilet partitions, standard finish, stainless steel and cast aluminum hardware, barrier-free accessible.

**C.5.2 Toilet and Bath Accessories**
- Coat hooks: satin finished stainless steel, square profiled robe hook with concealed mounting, provide one per bathroom stall and two per individual washroom.
- Grab Bars: Horizontal 1.27mm; 1067 mm and 915 mm long x 38 mm in diameter. Vertical 1.27 mm; 915 mm long x 38 mm in diameter. Straight, stainless steel, slip resistant grip, concealed mounting, cap secured with vandal resistant set screws.
- Garbage Container: Recessed mounted, 0.80 mm stainless steel, satin finished seamless construction to exposed face, complete with heavy duty reusable, removable vinyl liner having a 45L capacity.
- Mop Strip: stainless steel mop and broom holder with non-slip handle restraints, designed to hold three handles 19 mm to 30 mm in diameter.
- Feminine Napkin Dispenser: Surface mounted, stainless steel, concealed fastening, self-closing disposal opening with leak-proof plastic receptacle.
- Roll Paper Towel Dispenser
- Toilet tissue dispenser: Double roll, surface mounted tissue dispenser with concealed mounting, stainless steel construction, bright polished finish with theft resistant spindles.

**C.5.3 Corner Guards and Wall Protection**
50mm x 50mm stainless steel corner guards in kitchen area – length as indicated on drawings.

**C.5.4 Tack Boards**

**C.6 Interior Floor Finishes**

**C.6.1 Carpet Tile**
Refer to specification section 09 99 99 Materials List for materials.

**C.6.2 Tile**
Refer to specification section 09 99 99 Materials List for materials.

Porcelain floor tile exceeding the requirements of CAN/CGSB 75.1 and ANSI A137.1, impervious, fully fired porcelain floor tile having slip resistance where required installed in accordance with ASTM C627 Extra Heavy Duty Setting material and epoxy grout.

Ceramic tile to CAN/CGSB 75.1 M88, type 5, MRA with latex modified mortar and grout system.

Edge and control joints shall be formed using clear anodized aluminum, purpose made for application. Schluter Systems.

**C.6.3 Vinyl Tile**
Refer to specification section 09 99 99 Materials List for materials.

**C.6.4 Safety Flooring**
In kitchen prep, and dishwashing areas. Sheet vinyl safety flooring: single layer homogenous with same composition and pattern all the way through and silicone carbide abrasive grains in surface layer 0.5 mm thick, 2000 mm wide, weight 2.7 kg/m2, slip resistant tested to ASTM D2047, conforming to ULC 102.2 Flame Spread 5, smoke development 295.

Refer to specification section 09 99 99 Materials List for materials.

**C.7 Interior Wall Finishes**

**C.7.1 Paint**
Paint on gypsum board block or concrete. Refer to specification section 09 99 99 Materials List for materials.

**C.7.2 Tile**
Refer to specification section 09 99 99 Materials List for materials.

**C.7.3 Back-Painted Glass**
Refer to specification section 09 99 99 Materials List for materials.

**C.7.4 Wall Panels**
Refer to specification section 09 99 99 Materials List for materials.

**C.7.5 Wood Panelling**
Wood veneer panelling. Refer to drawings for species and locations.
C.8 Interior Ceiling Finishes

C.8.1 Gypsum Board Ceiling Finishes
Acrylic or latex premium grade paint having low or no VOC’s applied to a minimum of one coat primer with two coats of finish in accordance with MPI manual. Additional coats shall be applied where coverage shows defects in paint finishes at distance of 1500 mm at 60 degrees from wall surface.

C.8.2 Acoustic Ceiling Treatment
Acoustic Ceiling panels in a suspended ceiling grid. Refer to ceiling plans for sizes and types.

Kitchen area shall have mylar, clean room ceiling panels with mineral fibre core, and square edge.

D SERVICES

D.1 Vertical Transportation

D.1.1 Electric Traction Elevators
KONE EcoSpace gearless traction elevator. Equipment Control KCM831. Non-Regenerative Drive.

Machine Room and Control Room Less, machine located inside the hoistway mounted on car guide rail. Control Space located in integral closet at top landing.

Two (2) elevators with six (6) landings with a travel distance of 17,600mm. All openings front openings. Rated capacity 1134 kg. Rated speed 1.00 m/s.

Cab height: 2,438 mm. Clear inside dimensions: (Wx Dx H): 2,032 mm x 1,295 mm x 2,311 mm.

Main Power Supply 208 Volts + 5%, three-phase. Duplex Operation.

Glass Series steel cab. Interior non-removable vertical panels with coloured glass and aluminum from selected from manufacturer’s standard catalog choices. Car front and door to be brushed stainless steel. Ceiling to have round diffusers and LED lights in stainless steel three panel suspended ceiling. Brushed aluminum rail on back and sides of car. Flooring by others – design for tile floor. Aluminum threshold.

To be equipped with emergency siren and car lighting. Battery pack emergency power to be provided.

Flash mounted car operating panel shall contain a bank of round, mechanical, illuminated buttons marked to correspond to landings served; emergency call button, door open button, door close button, and key switches for lights, inspection, and exhaust fan. Buttons have white illumination (halo). All buttons to have raised text and Braille marking on left hand side. The car operating display panel shall be white DOT-matrix. All texts, when illuminated, shall be white. The car operating panel shall have a brushed stainless steel finish. Car position indicator to be located in main floor lobby.

E EQUIPMENT AND FURNISHINGS

E.1 Furnishings

E.1.1 Finishing Carpentry
Interior standing and running trims, flush wood panelling, site applied interior ornamental woodwork, and frames and jambs. Millwork to be factory finished, delivered to the jobsite.

Hardware forming a part of cabinets by this Section All millwork to be shop and site inspected and meet AWMAC 2009 Standards. AWMAC GIS required.

E.1.2 Finish Millwork
Flush overlay cabinets with clear lacquered wood veneer exteriors and plastic laminate interiors. AWMAC Premium Grade in accordance with Section 300 of “The Manual”. Refer to specification section 09 99 99 Materials List for species.

E.1.3 Countertops

Solid surface countertops in washrooms and public spaces as outlined in specification section 09 99 99 Materials List for materials. Accessories include adhesives, fasteners, joint sealants as required.

E.1.4 Resin Panels
Refer to specification section 09 99 99 Materials List for materials.

E.1.4. Drapery and Tracks
Refer to specification section 09 99 99 Materials List for materials. For tracks and rods refer to section 10 28 00.

E.1.5 Interior Bicycle Racks
Cycle Works Josta Wall Hook hung to allow for vertical parking. Refer to design development drawings for quantity and placement.

E.2 Window Treatments

E.2.1 Window Shades

E.3 Kitchen Equipment

E.3.1 Kitchen Equipment
Refer to itemized equipment list in design development drawings package.
<table>
<thead>
<tr>
<th>Material</th>
<th>Manufacturer &amp; Product</th>
<th>Color</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RB1 Millwork</td>
<td>Johnsonite, 100mm corebase, 48 Grey WG</td>
<td>Grey</td>
<td>Residence Rooms, Social Spaces</td>
</tr>
<tr>
<td>B2 Stainless Steel Base</td>
<td>stainless steel base, 150 mm high</td>
<td>Grey</td>
<td>Main Floor</td>
</tr>
<tr>
<td>TB1 Tile Base</td>
<td>Tile base, 150 mm height</td>
<td>to match T1</td>
<td></td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>C3 Gypsum Board, Painted</td>
<td>CGC, Mars Croma Plus, High NRC Logic 1500 O.C. 500mm x 1000mm panels with 100 mm logix zones</td>
<td>Quebec study, Admin offices, Conference room, Rec room, Fitness area, City room</td>
<td></td>
</tr>
<tr>
<td>C2 Hygienic Acoustic ceiling</td>
<td></td>
<td></td>
<td>kitchen</td>
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<tr>
<td>Fabrics</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>F1 Fabric</td>
<td>J.Eennis Fabrics, Ultradeather, B243 Apricot</td>
<td>Orange</td>
<td>2nd Floor Corridor Benches</td>
</tr>
<tr>
<td>F2 Fabric</td>
<td>J.Eennis Fabrics, Ultradeather, 4460 Parrot</td>
<td>Green</td>
<td>3rd Floor Corridor Benches</td>
</tr>
<tr>
<td>F3 Fabric</td>
<td>J.Eennis Fabrics, Ultradeather, 2553 Cyan</td>
<td>Blue</td>
<td>4th Floor Corridor Benches</td>
</tr>
<tr>
<td>F4 Fabric</td>
<td>J.Eennis Fabrics, Ultradeather, Style: Brisa, 3022 Shitake</td>
<td>Dark Brown</td>
<td>Residence Rooms Window Seat</td>
</tr>
<tr>
<td>F5 Fabric</td>
<td>TBD</td>
<td></td>
<td>Residential Rooms (Closets)</td>
</tr>
<tr>
<td>F6 Fabric</td>
<td>TBD (Wool)</td>
<td>Grey</td>
<td>Living Room</td>
</tr>
<tr>
<td>F7 Fabric</td>
<td>J.Eennis Fabrics, Ultradeather, Style: Turner, 6009 Chinchilla</td>
<td>Dark grey</td>
<td>Living Room</td>
</tr>
<tr>
<td>Floor</td>
<td></td>
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<td></td>
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<tr>
<td>DT1 Carpet Tile (Field)</td>
<td>Interface, Style: 138720A00 Ground Waves, 250mm x 1000mm, 104054 Iroon/Colours</td>
<td>Dark Grey</td>
<td>2nd Floor, 3rd Floor Accent, 4th Floor Accent</td>
</tr>
<tr>
<td>DT2 Carpet Tile (Accent)</td>
<td>Interface, Style: 138730A00 Ground Waves, 250mm x 1000mm, 104004 Iron/Colours</td>
<td>Dark Grey-blue and orange</td>
<td>2nd Floor corridors</td>
</tr>
<tr>
<td>DT3 Carpet Tile (Field)</td>
<td>Interface, Style: 138720A00 Harmonize, 250mm x 1000mm, 104048 Gravel</td>
<td>Medium Grey</td>
<td>3rd Floor</td>
</tr>
<tr>
<td>DT4 Carpet Tile (Field)</td>
<td>Interface, Style: 138720A00 Harmonize, 250mm x 1000mm, 104048 Gravel</td>
<td>Medium Grey</td>
<td>3rd Floor corridors</td>
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<tr>
<td>DT5 Carpet Tile (Field)</td>
<td>Interface, Style: 138720A00 Ground Waves, 250mm x 1000mm, 104054 Pewter/Colours</td>
<td>Light Grey</td>
<td>4th Floor, 2nd Floor accent</td>
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<tr>
<td>DT6 Carpet Tile (Accent)</td>
<td>Interface, Style: 138730A00 Ground Waves, 250mm x 1000mm, 104054 Pewter/Colours</td>
<td>Light Grey-blue and white stripe</td>
<td>4th Floor corridors</td>
</tr>
<tr>
<td>DT7 Carpet Tile (Field)</td>
<td>Shaw Contract Group, Style: 5106 folded tile, 915mm x 450mm, 60506 electric</td>
<td>Indigo and dark grey</td>
<td>5th Floor</td>
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<tr>
<td>DT8 Carpet Tile (Accent)</td>
<td>Shaw Contract Group, Style: 5106 folded tile, 915mm x 450mm, 60506 electric</td>
<td>Indigo and dark grey</td>
<td>5th Floor</td>
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<tr>
<td>DT9 Carpet Tile (Field)</td>
<td>Shaw Contract Group, Style: 51058 angle tile, 915mm x 455mm, 9530 grit, ashlar</td>
<td>dark grey</td>
<td>main floor</td>
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<tr>
<td>T1 Tile</td>
<td>Tierra Sol, Terre Toscane, Style: Naturale, 300mm x 600mm, matte, Gaiole</td>
<td>Dark Grey</td>
<td>Main Floor, 5th Floor</td>
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<tr>
<td>Millwork</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PL1 Desk</td>
<td>Plastic Laminate TBD</td>
<td>White</td>
<td>Residential Rooms</td>
</tr>
<tr>
<td>WD1 Wood Veneer</td>
<td>Bacon Veneer Company, Rift Cut, 5002461, White Oak (Quercus Alba)</td>
<td>Stained to match Designer Sample</td>
<td></td>
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<tr>
<td>WD2 Wood Veneer</td>
<td>TBD</td>
<td></td>
<td>5th Floor, City Room</td>
</tr>
<tr>
<td>SS1 Countertop</td>
<td>Formica, Style: Traditions, 760mm x 380mm, 601 Bleached Concrete</td>
<td>White</td>
<td>Residence Room</td>
</tr>
<tr>
<td>SS2 Countertop</td>
<td>Aventi Surfaces, Studio Collection, Style: K3-1425 Cement, Colour: 04/07 Satin</td>
<td>Dark Grey</td>
<td>City Room Bathroom</td>
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<tr>
<td>SS3 Countertop</td>
<td>Zodiac, Cloud White</td>
<td>White</td>
<td>Main Floor</td>
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<tr>
<td>RP1 Resin Panel</td>
<td>Varia Ecorex, Style: Moss, Finish Sandstone,12mm thick</td>
<td>Green</td>
<td>Main Floor</td>
</tr>
<tr>
<td>Other</td>
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</tr>
<tr>
<td>MR1 Mirror</td>
<td>Clear</td>
<td></td>
<td>Residential Rooms</td>
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<tr>
<td>Wall</td>
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<tr>
<td>PT1 Paint (Field)</td>
<td>Benjamin Moore, OC-130 Cloud White</td>
<td>White</td>
<td>Neutral on All Floors</td>
</tr>
<tr>
<td>PT2 Paint (Field)</td>
<td>Benjamin Moore, HC-83 Grant Beige</td>
<td>Beige</td>
<td>Neutral on 2nd, 3rd, and 4th Floor</td>
</tr>
<tr>
<td>PT3 Paint (Accent)</td>
<td>Benjamin Moore, CSP-1105 Tandoori</td>
<td>Darkest Orange</td>
<td>2nd Floor Social Space</td>
</tr>
<tr>
<td>PT4 Paint (Accent)</td>
<td>Benjamin Moore, CSP-1110 14 Carrots</td>
<td>Orange</td>
<td>2nd Floor Social Space</td>
</tr>
<tr>
<td>PT5 Paint (Accent)</td>
<td>Benjamin Moore, 2017-20 Sharp Cheddar</td>
<td>Orange</td>
<td>2nd Floor Social Space</td>
</tr>
<tr>
<td>PT6 Paint (Accent)</td>
<td>General Paint, CL 1121N</td>
<td>Light Orange</td>
<td>2nd Floor Social Space</td>
</tr>
<tr>
<td>PT7 Paint (Accent)</td>
<td>General Paint, CL 175A</td>
<td>Yellow</td>
<td>2nd Floor Social Space</td>
</tr>
<tr>
<td>PT8 Paint (Accent)</td>
<td>Benjamin Moore, 2029-10 Rosemary Green</td>
<td>Dark Green</td>
<td>3rd Floor Social Space</td>
</tr>
<tr>
<td>PT9 Paint (Accent)</td>
<td>Benjamin Moore, 2029-30 Basil Green</td>
<td>Green</td>
<td>3rd Floor Social Space</td>
</tr>
<tr>
<td>Finish Code</td>
<td>Material</td>
<td>Manufacturer &amp; Product</td>
<td>Color</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>PT10</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, CSP-865 Limeade</td>
<td>Light Green</td>
</tr>
<tr>
<td>PT11</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, CSP-860 Granny Smith</td>
<td>Lightest Green</td>
</tr>
<tr>
<td>PT12</td>
<td>Paint (Accent)</td>
<td>General Paint, CL 17756A</td>
<td>Yellow</td>
</tr>
<tr>
<td>PT13</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, CSP-680</td>
<td>Dark Blue</td>
</tr>
<tr>
<td>PT14</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, 2053-40</td>
<td>Blue</td>
</tr>
<tr>
<td>PT15</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, 2053-50</td>
<td>Light Blue</td>
</tr>
<tr>
<td>PT16</td>
<td>Paint (Accent)</td>
<td>General Paint, CL 3175A</td>
<td>Dark Grey</td>
</tr>
<tr>
<td>PT17</td>
<td>Paint (Accent)</td>
<td>General Paint, CL 3173M Excalibur</td>
<td>Grey</td>
</tr>
<tr>
<td>PT18</td>
<td>Paint (Accent)</td>
<td>General Paint, CL3163 Elephant</td>
<td>Light Grey</td>
</tr>
<tr>
<td>PT19</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, CSP-890, Martini Olive</td>
<td>Green (Bright)</td>
</tr>
<tr>
<td>PT20</td>
<td>Paint (Accent)</td>
<td>Benjamin Moore, CSP-885, Turkish Bay Leaf</td>
<td>Green</td>
</tr>
<tr>
<td>PT21</td>
<td>Paint (Accent)</td>
<td>General Paint, CL3235D</td>
<td>Grey</td>
</tr>
<tr>
<td>BPG1</td>
<td>Back Painted Glass</td>
<td>Urban Glassworks LTD. To match UPC-1365)</td>
<td>Snow White</td>
</tr>
<tr>
<td>TG1</td>
<td>Tinted Tempered Glass</td>
<td>in 150mm stainless steel shoe</td>
<td>Very Light Teal</td>
</tr>
<tr>
<td>WT1</td>
<td>Wall Tile</td>
<td>Tierra Sol, Sistem C, 100mm x 300mm, M84 ARCH, Turchese</td>
<td>Blue</td>
</tr>
<tr>
<td>WT2</td>
<td>Wall Tile</td>
<td>Stonetile, Style: Ascot Muramansk in Medium, 200mm x 600mm, White</td>
<td>White</td>
</tr>
<tr>
<td>WT3</td>
<td>Wall Tile</td>
<td>The size by Noelith, 5+ 3600mm x 1200mm x 5mm fiber glass backed Gama Colorfeel,</td>
<td>White</td>
</tr>
<tr>
<td>WT4</td>
<td>Wall Tile</td>
<td>Manufacturer: Porcelanosa, 333mm x 1000mm, V13897341 Street</td>
<td>White</td>
</tr>
<tr>
<td>GT1</td>
<td>Wall Tile</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>WP1</td>
<td>Wall Panel</td>
<td>Modularts, Style: CRUSH, 810mm x 810mm, Paint Finish PT1</td>
<td>White</td>
</tr>
<tr>
<td>BB1</td>
<td>Bulletin Board Wall</td>
<td>Forbo, Tackable, 1220mm x 27000mm</td>
<td>TBD</td>
</tr>
</tbody>
</table>