



CAPITAL PLAN

Infrastructure

2020-2023

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The University of Alberta respectfully acknowledges that we are situated on Treaty 6 territory, traditional lands of First Nations and Métis people.

Background

As a world-class post-secondary institution, the University of Alberta’s success lies largely in its ability to attract the best and brightest students, researchers, and faculty from within Alberta and beyond. We can achieve this by providing educational and research infrastructure capable of meeting 21st century expectations. The University of Alberta’s mission reinforces the necessity of a vibrant and supportive learning environment in order to achieve the institution’s teaching, learning, research, and creative objectives.

Our 2020-23 Capital Plan (Infrastructure) acknowledges we are part of a provincial system of higher education and that capital decisions tangibly impact each of Alberta’s adult learning system principles.

Accessibility

UAlberta provides learning environments in which all learners, regardless of ancestral or socio-economic background, feel welcome and empowered to succeed.

Affordability

UAlberta strategically and holistically invests in capital and maintenance programs that provide the best value to learners, the institution, and our government funders.

Quality

UAlberta maintains international competitiveness by being an attractive choice for a growing body of students and faculty who consider post-secondary options from around the world.

Coordination

UAlberta responsibly manages all funds under its stewardship and adeptly adjusts institutional allocations in response to stated priorities.

Accountability

UAlberta capitalizes on its hard-earned reputation for teaching and research excellence.

All infrastructure planning is aligned with the University’s Integrated Asset Management Strategy (IAMS):

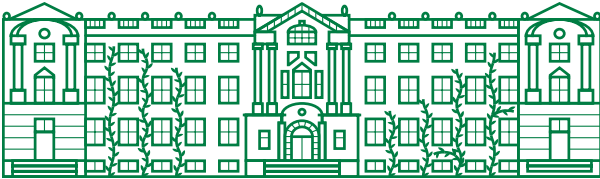
Taking Care of our Campuses. The strategy sets the direction for the University of Alberta’s infrastructure assets, while defining a long-term roadmap. It describes the current state and the conditions that created some of the challenges currently being faced, while also identifying the future direction and actions to be taken. It also outlines how the institution intends to be effective and efficient stewards of our physical assets (e.g. buildings, roads, grounds, and utility infrastructure). This plan contains both short-term (within 5 years) and medium-term (within 10 years) projections along with a long-term (>10 years) forecast.

An important focus of this strategy is that all students, staff, faculty, visitors, and members of the community are stewards of the university’s buildings and grounds and how each uses the institution today has a direct impact on its future state. This strategy also sets a collective mission, vision, principles, goals, and actions for future-proofing the university’s infrastructure. It also helps guide decisions to support the infrastructure needs of learners, faculty, staff, and community, while balancing the risks, opportunities, and fiscal environment in which the institution operates.

In short, the University of Alberta’s Capital Plan (Infrastructure) embodies our Institutional Strategic Plan, *For the Public Good*, which reminds us that “we are a public institution acting for the public good”.

The U of A for Tomorrow

The University of Alberta is embarking on a new period of transformation. The post-secondary sector is evolving quickly and the pressures facing the U of A today are significant and as such, we must take action urgently. The **U of A of tomorrow** will be different in its structure than today, but will remain the same in its commitment to excellence in teaching and learning. By 2025, the U of A will be significantly different from the university of today. We will change how faculties are organized, how administrative services support the academic mission, and how the university uses its assets. This Capital Plan aligns with this vision and priority projects will assist the institution in pivoting to meet these challenges.



Context

As Alberta’s oldest and largest post-secondary institution, UAlberta manages more than 1.8 million square metres of complex facility inventory across five distinct campuses. While we have emerged from a period of significant growth in our formal learning and research spaces, we also actively manage significant quantities of aged infrastructure, some of which predates World War I. Greater than 50 percent of buildings were built in the post-war (1951–1975) or modern (1976–1990) periods; both of which are known for lower standard construction practices. These buildings, which were built with a projected life-span of 50 to 60 years, are definitively past their prime with many of these buildings’ critical systems (mechanical, electrical, and building envelope) at or near their end of life—catastrophic building failures are imminent. Additionally, considerable land and building assets are owned or leased “to help us build, experience, excel, engage, and sustain for the public good”.

In 2020 Alberta continues to be challenged with a period of considerable economic turmoil, resulting in dramatically reduced prices for non-renewable resources. This has led to high levels of unemployment and reduced government revenues. With the additional impacts of COVID-19 on the economy, UAlberta recognizes its obligation to be mindful of the government’s need to constrain the more recent growth in its expenditures. However, failure to invest in maintaining existing infrastructure will only lead to a deepening deferred maintenance deficit with no conceivable means of recovery.

To operate and maintain its supported buildings, the university relies on grants from the Government of Alberta, with an amount embedded into the Campus Alberta grant to offset general operational and maintenance costs (e.g. custodial, utilities, and insurance). Additionally, the government provides a variable grant under the Infrastructure Maintenance Program (IMP), which, at



its core, is intended to reduce an institution's deferred maintenance liability. While these allocations are very much appreciated, the reality is that, given the size and complexity of the university's infrastructure assets, for decades these allocations have been unable to allow for adequate investments in preventative or reactive maintenance resulting in increasing deferred maintenance liabilities across the institution.

Buildings not eligible for government support (e.g. residences, dining, and parking facilities) are considered self-funded, meaning all costs related to construction, maintenance, and renewal must be generated by the users of these spaces. All revenue generated from these operations remains within the system as no tuition or government funding is available for any aspect of these operations. Unfortunately, a preoccupation with keeping rates as low as possible has resulted in many of the older residences being in poor condition and in dire need of refurbishment or, as in the case of Michener Park, facing permanent closure in August 2020.

Looking ahead

In the seemingly insatiable quest to address the pressures of providing adequate learning environments for the students of both today and tomorrow, UAlberta's emphasis continues to be squarely on the well-planned and strategic repurposing and renewal of its existing facilities while reducing reliance on expensive leased space and reducing its inventory of buildings that are aged and expensive to operate. This is being orchestrated in a way that exploits advances in infrastructure analytics to ensure all capital investments are evidence-based and rooted in data related to building condition, use, functionality, environmental footprint, and long-term operational impact.



Deferred maintenance

Deferred maintenance is an area of particular focus as the current deferred maintenance liability stands at \$306 million with a five-year projected aggregate liability of \$865 million (as of December 31, 2019). We continue to identify and address deferred maintenance through joint renewal and repurposing projects to maintain, and optimally improve, the condition and functionality of our building inventory. We are grateful for the resumption of UAlberta's IMP grant in Budget 2020, however, only through access to sustained and predictable funding for deferred maintenance in the order of \$40 to \$50 million annually, can we reduce this liability in any meaningful way. This amount is still below the industry best practice of 2–4 percent of the current replacement value of our supported infrastructure.

We have concluded a detailed strategic evaluation of all UAlberta facilities, and are well positioned to employ robust integrated planning with a view to ensuring the most efficient use of existing space, elimination of duplicative and high cost space, and significant reductions to our ecological and carbon footprint. The results of our evaluation inform where IMP and other capital investments will most effectively advance UAlberta's objectives. This evaluation has also identified buildings where the cost of maintaining or upgrading has become prohibitive and, therefore, can be scheduled for decommissioning.



Strategic investments to date

UAlberta has had considerable success in identifying opportunities to leverage existing funding and explore creative partnerships and project delivery models. This has been an inherently delicate endeavour considering our five distinct campuses, each of which serve unique and separate constituencies within Alberta.

Additionally, two major capital projects are at varying stages of completion.

Dentistry/Pharmacy Centre		
Description	Project cost	Completion
<p>As one of the premier buildings on North Campus, Dentistry/Pharmacy Centre has served the institution for nearly 100 years.</p> <p>Renewal and repurposing of this building will allow us to effectively utilize a significant infrastructure asset. The renewed facility will provide new teaching, academic, and administrative space at the heart of North Campus as well as reduce reliance on leased space. This project is also addressing major health and safety issues (asbestos, fire safety, and indoor air quality), building code and physical condition issues, as well as focusing building outcomes to reduce its carbon footprint.</p>	\$249 million	2023





Lister Residence Complex - Classic Towers		
Description	Project cost	Completion
<p>The three original residence towers in the 'Lister Complex' are in the process of being refurbished and upgraded to meet current building codes (including the installation of fire suppression systems).</p> <p>The design includes particular attention to amenities such as study areas and social spaces which, by promoting casual interactions between students, positively contributes to student engagement, attachment, and success.</p>	\$85.5 million	2022



Top capital priorities

In support of the institution’s academic and research priorities, the University of Alberta has identified its top three capital projects (detailed in the following table in priority order). These are aspirational in that, until the requisite funding is secured, they remain at the planning stage. However, the planning undertaken has all of these projects at a stage where they could commence in very short order once funding is committed. These all focus on existing buildings with the aim of reducing deferred maintenance, upgrading access to meet current code requirements, as well as focusing on student experience and capacity demands. Priorities 1 and 2 will also assist in reducing the physical footprint of our infrastructure resulting in operational and deferred maintenance savings. We also continue to place significant emphasis on repurposing existing infrastructure and reducing reliance on leased space.

The priorities that follow are reflective of our 2020 Building and Land Information System (BLIMS) submission to the Government of Alberta.

Education Complex				
Description				
Renew and redevelop (functional renewal) the Education Complex to meet the requirements of modern academic teaching and learning pedagogy, renewing and upgrading the existing electrical building systems, as well as bringing the building up to modern standards for student learning, study space and well-being. Based on comprehensive utilization studies and growth projections, the two education towers have a capacity to be repurposed to accommodate large decant and the closure of other buildings. The primary outcomes will be improved building service reliability (renewed and upgraded existing mechanical building systems), expanded infrastructure capacity for building renewal, and to reduce deferred maintenance in the building.				
Type	Total Project Cost	Funding sources	Government approved	Estimated project timelines
Preservation	\$21.95 million	100% GoA	No	September 2020 – June 2022



Faculty of Arts				
Description				
<p>Based on the programming and functional assessment of the Arts Faculty, including facility reviews, several initiatives have been identified as an alternative to a new development, a multi-year phased renewal and replacement program will address program pressures, deferred maintenance and functionality. Through a multi-year building renewal and expansion program, several buildings including; Fine Arts, Industrial Design, HUB, and select other buildings would be expanded or renewed to accommodate changing program objectives. The expansion and renewal program will also permit several buildings to be better utilized and decrease operational costs and reduce deferred maintenance, and align with the Integrated Asset Management Strategy. It is expected that several buildings can be decommissioned.</p>				
Type	Total Project Cost	Funding sources	Government approved	Estimated project timelines
Preservation & Expansion	\$72.8 million	100% GoA	No	December 2021 – January 2026
Biological Sciences				
Description				
<p>A renewal program for a 60-year-old facility focusing on mechanical and electrical base building infrastructure. As aged infrastructure is starting to fail, the ability to continue teaching and research in this space is at risk. There are significant challenges in upgrading the systems in this building as each wing is cross-linked meaning the renewal is most feasibly undertaken for the entire building. As planned, mechanical and electrical system renewals will also support internal architectural renewals.</p>				
Type	Total Project Cost	Funding sources	Government approved	Estimated project timelines
Preservation	\$59.6 million	100% GoA	No	May 2021 – June 2024

Emerging capital priorities

Recognizing the uniqueness of operating multiple distinct and unique campuses, in addition to the top three identified above, numerous other projects have been identified as institutional priorities and are included in our BLIMS submission. These are presented in order to emphasize the breadth and depth of necessary capital investment across the largest inventory of buildings and grounds of any post-secondary institution in Canada. For ease of presentation, these, which only highlight key projects, have been grouped by campus and, as with the top three above, each is ready to proceed pending the emergence of the requisite funding.

North Campus				
Type	Description	Cost	Funding source	Government approved
New	Diwan Pavilion at the University of Alberta Botanic Garden	\$5.17 million	100% donation	N/A
New	Plant Based Research and Innovation Centre Greenhouse Facility	\$45.6 million	\$44.594 million GoA \$1.006 million U of A	No
Expansion	Earth Sciences Building (Central Systems)	\$14 million	100% GoA	No
Expansion	Mechanical Engineering Building	\$94 million	\$70 million GoA \$24 million U of A	No
Expansion	Asset Reduction Impacts - Enterprise Square, University Terrace, Research Transition Facility, Education and Ring Houses	\$8 million	\$4.5 million GoA \$3.5 million U of A	No
Expansion	Heating Plant - Turbine Generator #3	\$89.2 million	\$47.5 GoA \$41.7 DES	No
Expansion	Utilities Civil Infrastructure Upgrades	\$14.491 million	100% GoA	No
Preservation	I.F. Morrison Structures Engineering Laboratory Renewal	\$15 million	\$5 million GoA \$10 million U of A	No
Preservation	Cameron Library (Building Envelope)	\$24.79 million	100% GoA	No
Preservation	Cameron Library Student Study Area Redevelopment - Phase 3	\$10.979 million	100% GoA	No

North Campus (continued)

Type	Description	Cost	Funding source	Government approved
Preservation	Chemistry East Teaching Laboratories Renewal and Modernization	\$10 million	\$9 million GoA \$1 million U of A	No
Preservation	Chemistry West Renewal (Level 1 and Basement)	\$15.5 million	100% GoA	No
Preservation	Humanities Building Exterior Building Envelope Renewal	\$2 million	100% GoA	No
Preservation	Universiade Pavilion (Building Envelope)	\$17 million	100% GoA	No
Preservation	Clinical Sciences (Building Envelope)	\$18 million	100% GoA	No
Preservation	Convocation Hall	\$9.94 million	\$7.94 million GoA \$2.0 million U of A	No
Preservation	Medical Sciences Building Renewal	\$12 million	100% GoA	No
Preservation	Medical Sciences Building – Select Wet Laboratory Renewal	\$10 million	\$8 million GoA \$2 million U of A	No
Preservation	E-Learning and Group Pedagogical Space Renewal	\$4 million	100% GoA	No
Preservation	Fine Arts Building Mechanical and Electrical System Replacement	\$3 million	100% GoA	No
Preservation	Heating Plant – Diesel Generators and Controls Replacement and Modernization	\$4.128 million	100% GoA	No
Preservation	RE Philips Interior Renewal	\$3.5 million	100% GoA	No
Preservation	Brain Aging & Research Building System Infrastructure Renewal	\$9.5 million	\$8 million GoA \$1.5 million U of A	Yes

North Campus (continued)				
Type	Description	Cost	Funding source	Government approved
Preservation	Brain Aging & Research Building Third Floor Wet Lab Renewal	\$6 million	100% GoA	No
Preservation Minor Preservation	Tory (Mechanical)	\$8 million	100% GoA	Yes
Preservation Minor Preservation	Heritage Medical Research Building (Ventilation)	\$4 million	\$3 million GoA \$1 million U of A	No
Minor Preservation	Animal Research (Heritage Medical Research, Medical Sciences, and Biological Sciences)	\$7.2 million	\$6.2 million GoA \$1 million U of A	No
Programming	Asset Reduction Program (Phase 1)	\$0.7 million	100% GoA	No
South Campus				
New	High Performance Training and Research Facility and Community Arenas	\$65 million	\$20 million philanthropy \$20 million City of Edmonton \$25 million GoA/GoC	No
New	Basic Infrastructure	\$15.6 million	100% GoA	No
Augustana Campus				
Expansion	Science (phase 1 and 2 renewal)	\$7.1 million	\$5 million GoA \$2.1 million U of A	No

Campus Saint-Jean				
Type	Description	Cost	Funding source	Government approved
Expansion	Science (expansion and classroom upgrades)	\$7.85 million	\$2.621 million GoA \$3.728 million GoC \$1.51 million U of A	No
Minor Preservation	Campus Electrical and Mechanical infrastructure	\$8.7 million	100% GoA	No
Other				
Expansion	Enterprise Square Densification	\$11.5 million	\$7.2 million GoA \$4.3 million U of A	No



The following table represents projects that are underway or have a confirmed start date within the 2020/21 fiscal year.

Project timelines and status	
Description	Estimated timelines
BARB Mechanical Ventilation and Exhaust Renewal	September 2019 – October 2021
Campus Electrical Building – Electrical (CUBE)	April 2018 – March 2021
Chemistry West Level 1 and 2 Renewal	May 2019 – March 2021
Chemistry Electrical Vault Replacement	April 2018 – September 2020
Dentistry-Pharmacy Building Renewal	August 2018 – July 2023
Energy Management Upgrades (Envision)	April 2019 – March 2022
Garneau Switchgear Upgrade and North Campus Electrical Feed Expansion	January 2019 – December 2024
Integrated Asset Management Strategy (Space Utilization/Reduction/Consolidation)	April 2019 – April 2024
Lister (Classic) Tower Renewal	February 2019 – August 2022
Morrison Structures Engineering Lab	July 2019 – December 2021
NREF Renewal and Renovation	May 2019 – August 2020
R.E. Phillips (functional renewal)	April 2018 – August 2020
University of Alberta Botanic Garden Entry Pavilion	April 2019 – July 2020
Van Vliet Electrical Vault Replacement	September 2018 – August 2020
Van Vliet Mens Locker Room Renewal	January 2019 – June 2020
Van Vliet Womens Locker Room Renewal	January 2019 – June 2020

Utilities

UAlberta operates a district energy system (DES) supplying utility services, including power, to the greater campus area. The University’s DES partners are Alberta Health Services (Walter C. Mackenzie Health Sciences Centre and Cross Cancer Institute), Alberta Infrastructure (Canadian Blood Services and Northern Alberta Jubilee Auditorium), and others such as St. Joseph’s College, St. Stephen’s College, and the National Institute for Nanotechnology. More than ten kilometres of service corridors bring steam; electricity; natural gas; compressed air; and domestic, demineralized, and chilled water to our partners.

Operating a DES has many benefits, not the least of which is significantly reduced emissions over conventional energy systems. UAlberta’s DES prevents approximately 60,000 tonnes of carbon dioxide emissions from entering the atmosphere every year.

There are a number of capital priorities necessary to address expansion and reliability issues of the DES. The first is to replace the aging electrical infrastructure in the heating plant. Phase five, of approximately nine phases, is nearing completion. This project is funded through utilities reserves.

The second major project is the expansion and upgrade of the electrical service from EPCOR’s Garneau substation to UAlberta’s DES electrical distribution system. This upgrade is critical in ensuring a continuous supply of electrical power to UAlberta, Alberta Health Services, and the Government of Alberta facilities, thereby avoiding disruptions like those experienced across Edmonton in the summer of 2017 to a distribution system that contains a high density of critical medical and high-end teaching and research facilities. This project has received regulatory approval and is now moving forward.

Recently, two high priority civil projects have been identified and are undergoing additional investigation to determine the extent of the repairs required. The first is the repair of the utility service corridor covering stations 1530 to 1540, with a current estimate of \$6.1 million. The second repair involves the river water intake for the Cooling Plant located in the river valley (that supports the Greater Campus Area) with a current repair estimate of \$8.2 million. The funding source for these repairs has not yet been determined.



District Energy System			
Project description	Approx. cost	Completion	Alignment
EPCOR Garneau Substation Switchgear Upgrade / North Campus electrical Feed Expansion	\$29.5 million	2024	Alberta Adult Learning System <ul style="list-style-type: none"> • Accountability <i>For the Public Good</i> <ul style="list-style-type: none"> • Build: 6ii • Engage: 16i, 16iii, and 16v • Sustain: 20ii and 20iii • Sustain: 22i and 22iii • Sustain: 23i and 23iv

Ancillary Services

Capital Priority Investments

In addition to UAlberta's teaching, research, and administrative functions are a number of ancillary operations designed to support the campus experience for students, faculty, staff, and visitors. These operations are entirely self-funded and, in addition to covering all operational costs, must build and maintain sufficient financial reserves to cover long-term capital investments or other large and anticipated expenses such as maintenance and renewal activities.

Student Residences

Purpose-built student housing is a key driver leading to successful learner outcomes and strong alumni relations. UAlberta's ability to meet its own and government's objectives hinges on continued investment in renewal of older facilities and the upkeep of new facilities.

UAlberta presently has more than 5,262 residence spaces across its campuses (with the completion of a fifth tower at Lister Centre and a new residence in East Campus Village this inventory increased by more than 700 spaces for the 2018/19 academic year). This additional inventory allows us to, over the course of three years, conduct significant and long-overdue renovations to each of the oldest towers in Lister Centre creating considerably more appealing student living spaces.

The impact of COVID-19 on the operation and its finances has been catastrophic and we have been forced to temporarily lay off staff as well as looking at how mortgage payments and ongoing operational costs can be managed during a time of highly reduced revenue.

As stated in *For the Public Good*, we intend to increase the opportunities for all undergraduate and graduate students to experience the benefits of living on campus, including guaranteeing the offer of a place in residence to every first year undergraduate student. As of September 2018, UAlberta's 5,262 bed spaces can accommodate approximately 15% of full-time student enrollment. We see this increased access to higher-quality residence options as key to enhancing completion rates while better-ensuring accessibility for rural and underrepresented students.

We also continue to renovate and upgrade upper year accommodation in HUB Residence & Mall. This was paused for the current fiscal year due to COVID-19, however it is scheduled to be completed in 2025.



Residence Services

Project description	Approx. cost	Completion	Alignment
Lister Centre Classic Tower Renewal	\$85.5 million	2022	Alberta Adult Learning System <ul style="list-style-type: none"> • Accessibility • Affordability • Quality • Accountability
HUB Mall Residence Renewal	\$4 million	2023	<i>For the Public Good</i> <ul style="list-style-type: none"> • Build: 1i, 1ii, and 1iii • Build: 5i • Experience: 8i • Sustain: 20ii and 20iii • Sustain: 22i and 22iii • Sustain: 23i and 23iv



Dining Services

Just as UAlberta’s first building, Athabasca Hall, provided for the dining needs of staff and students when it opened in 1911, we continue to provide a range of services and products that are tasty, nutritious, and convenient. In over 20 locations across North Campus and Campus Saint-Jean, Dining Services provides a wide range of food services to 55,000 students, staff, and guests.

The implementation of the final phase of an all-inclusive dining program for all residents in Lister Centre and Peter Lougheed Hall in September 2018 created an experience offering improved food quality, more food diversity, convenience, better value, a sense of community and health, wellness, and sustainability for students.

Investments are being made in refreshing and modernizing spaces that are increasingly used for dining as much as for student gathering.



Dining Services			
Project description	Approx. cost	Completion	Alignment
Lister and CAB Kitchen upgrades	\$1.1 million	2022	Alberta Adult Learning System <ul style="list-style-type: none"> • Accessibility • Affordability • Quality • Accountability For the Public Good <ul style="list-style-type: none"> • Build: 1i, 1ii, and 1iii • Build: 5i • Experience: 8i • Sustain: 20ii and 20iii • Sustain: 22i and 22iii • Sustain: 23i and 23iv
Upgrades to Central Academic Building upper level student study and food court	\$3 million	2021/22	
Renovate <i>The Marina</i> and <i>The Ship</i>	\$250,000	2021	
Refresh food outlets (campus wide)	\$250,000	2022	

Parking Services

UAlberta provides a full range of parking and transportation related services on all campuses. A portion of parking revenues are diverted to fund UAlberta’s sustainable transportation initiatives, such as the staff LRT program.

In planning for future parking demands, UAlberta is mindful of rapid developments related to car share programs and hybrid vehicles; both of which are addressed within the Parking Services’ Strategic plans. Developments such as driverless cars and expanded public transit are also key influencers in planning for parking on campus.

Parking Services			
Project description	Approx. cost	Completion	Alignment
Additional parking inventory to support the Saville Community Sports Centre (South Campus)	TBD	TBD	Alberta Adult Learning System <ul style="list-style-type: none"> • Accountability <i>For the Public Good</i> <ul style="list-style-type: none"> • Build: 6ii • Engage: 16i, 16iii, and 16v • Sustain: 20ii and 20iii • Sustain: 22i and 22iii



