



Campus Wide Master Plan Efforts

Site Assessment - Martin / Martin

Landscape Assessment - Studio Platts

Structural Assessment - Martin / Martin

A / M / E / P Building Assessments - Wood

Technology Standards - TCS

CIVIL - PARKING ASSESSMENT



LCCC Master Plan Update – Civil Assessment

Campus Summary:

The Laramie County Community College (LCCC) is located southeast of Cheyenne, Wyoming in Laramie County. It consists of approximately 260 acres of developed and undeveloped land and is bounded to the north by Niobrara Energy Park, to the west by multiple residential developments, and to the south and west by College Drive/Wyoming Highway 212. The existing site consists of roughly 28 multi-use and education buildings. These buildings range in age from 70 to 4 years old.

Civil Assessment:

The initial Civil assessment began with a review of existing site and utility plans provided by Laramie County Community College. This was followed with a discussion with the Facility Maintenance staff to discuss all components of the site and understand if there are any site wide issues that should be further investigated. Next, a site walk was performed around the perimeter of all buildings where general observations were made regarding site grading, drainage, and circulation. In general, the campus is in good state. There are areas that require attention, but these are isolated to the older portions of the campus. More detail is provided in the Civil Narrative for each component of the site.

The domestic water system has experienced failures in the past. These failures are generally isolated to older parts of the system that were constructed using cast iron pipe. Facility staff have been able to maintain pace with failures and did not feel it was prudent at the time for replacement of large portions of the system. The Sanitary Sewer was also in decent shape and maintenance requirements were reported to be manageable.

Drainage represented the most significant issue on the campus. Issues were generally located in the older portions of the campus. Most significant was sidewalk movement effecting building entries and door stoops. This was concentrated on the central corridor along the main axis of the campus. Additional study is required to understand the full extend of potential improvements, however, additional storm sewer infrastructure within the central corridor of the campus is recommended to provide adequate drainage away from building and walks. Spot sidewalk repairs is also recommended in areas where movement has created obstacles.

Finally, it was observed that several paths, parking areas, and routes what may not meet current accessibility requirements. A more detailed study will require a topographic survey to verify actual slopes of these areas to determine compliance. The most common issue observed was lack of clear routes from accessible parking stalls to an accessible building entrance. Common issues included vertical obstacles such as curbs or pavement movement, paths that were easily blocked by parked cars, or inappropriate pavement hatching that would provide a direct and clear route to a buildings entrance.

Executive Summary - Laramie County Community College Masterplan Existing Conditions Study and Guidance on Future Proposals

Summary: Laramie County Community College (LCCC) is required to produce an update to its ongoing masterplan every five years. LCCC is a growing educational institution meaning it not only needs to continuously be producing successful graduates, but all keep up with the demand of technology, facilities and the desire from its students to have a true college experience. This requires constant planning and projects focused on elevating the campus's visibility. Part of that endeavour is to implement new buildings and spaces on their campus in SE Cheyenne. STUDIOPLAATS Landscape Architecture is part of that effort, through its collaboration with Plan One/Architects, to envision the next 5-10 years of place-making.

Purpose: The purpose of this report is to analyze current conditions at LCCC, understand the efforts and plan to date, whether they were built or not, understand what has been successful, what areas need help, listen to the wants and needs of different staff members and propose elements that can best move LCCC forward. From a landscape architecture point of view, STUDIOPLAATS is focused on understanding the campus as several scales. We gather a wide range of information - regional watershed issues, grounds crew lawn maintenance commitments, and what type of trees work well in windy climates with extreme temperatures. By looking through many lenses and listening to the people who are on campus every day, we are able to identify issues, opportunities and translate them into possible design solutions.



Masterplan Approach: As described above, STUDIOPLAATS approached the LCCC Masterplan through site observation, research, discussion and collaboration with the other team members. We made several site visits over the span of the last 4 months to see the campus in different seasons as well as understand how students use the outdoor spaces and listen to the crews who manage it.

Analysis: We researched larger scale factors that influence the LCCC Campus. This included but not limited to:

- State and Regional Watersheds
- Regional and local ecologies - what is beneficial and what is damaging
- Typical to extreme wind and weather patterns
- Transportation and access to and from the site for multiple type of transport

A more campus focus analysis was also completed to understand changes executed over the last 10-15 years. That history and ongoing progress heavily influences proposals made going forward. These included, but not limited to:

- Building construction, their approach to adjacent or connected outdoor spaces and how students and visitors are using them now
- Material choice and its impact on water infiltration
- Management of lawn and efforts to reduce water usage
- Canopy cover and the challenges an environment like Cheyenne has to speedy tree growth
- Circulation, social spaces, overall spatial usage.

Proposals and Guidance: Budgets are always a challenge and without a Harvard level endowment, a program like LCCC has to be selective in the projects it decides to move forward with. We took this very seriously and established a set of metrics for goals to achieve in the next 5-10 years in regards to environmentally responsible design decisions, ecological sensitivity and connectivity. Additionally, we did not forget to think big, even if many of our suggestions are small in scale. When combined and given time to grow, they have the ability to transform the campus. Concepts and elements listed in the report included in the index both focus on making the LCCC campus a hidden gem, but also include many ideas to get people into the campus ground to explore whether they are a student or visitor. These include:

- Expanded connection to the Greenway trail, giving opportunities to view LCCC as a place of interest and node on this trail work exploring
- Keeping it human scaled, even though it is primarily a commuter campus.
- Emphasizing small moments for engagement and many spaces to meet, talk and get to know one another.
- Exploring ideas and spaces to keep people on campus, rather than driving away as soon as class is over.

These elements are elaborated upon and illustrated in the report we produced that will be included in the index. We greatly appreciate being a part of this masterplan team and hope the ideas we put forth are seeds for something greater at LCCC.

Sincerely,

A handwritten signature in black ink, appearing to read 'Shane Fagan', with a long horizontal stroke extending to the right.

Shane Fagan, RLA - Director, STUDIOPLAATS Landscape Architecture

STRUCTURAL - BUILDING STRUCTURE ASSESSMENT



LCCC Master Plan Update – Structural Assessment

Campus Summary:

The campus building structures consist of a combination of precast double tee wall and roof buildings built in the late 70's and 80's along with some newer structures. The majority of the newer structures are steel post and beam construction but also include wood framed construction and a precast insulated wall panel structure. Exterior finishes on the campus consist of the precast double tee walls as well as a combination of brick and metal panel at the newer structures.

Structural Assessment:

Our structural assessment consisted of walking the perimeter of all the building structures to document structural deterioration, foundation settlement and maintenance items that may affect the structural performance of the buildings. In general, the structures on campus are in fair to good condition and the precast buildings have held up well given their age. No major structural concerns were observed except a steel canopy column at the agricultural building which is address in the building report.

The structural assessment also included walking the building roofs for items that may affect the structural condition of the building. We did not assess the condition or life expectancy of the roofing material. We did not walk the roof of the residential buildings or the central plant. We did not observe any items that were a structural concern. We did observe that many of the bitumen roofs have lost a lot of the granules and they have "drifted" in the corners of the roofs. We also noted that some of the foil facing on the parapet flashing has been torn off likely due to wind. We would recommend that a roofing consultant assess the condition of the roofing and flashing and provide recommendations for replacement.

During our roof assessment, we noted that there are multiple locations where roof to roof access ladders were either owner fabricated or store-bought aluminum ladders. We would recommend that these ladders be replaced with engineered ladders and permanently installed. We did not review the roofs for fall protection, however, a review by a qualified consultant may be beneficial to the campus.

Many of the precast buildings have a concrete mow strip around the perimeter with a sealant joint between the mow strip and the double tee wall. The mow strips occur in landscaped areas and at paved areas. At several locations on campus the sealant has cracked and/or separated from the wall and others have indications that they have been replace. The cracked sealant has the perception that this is a maintenance item and should be replaced. In our opinion, at landscaped locations the sealant is not required and appears to be a significant maintenance item for the campus. To reduce the ongoing maintenance cost, a revised mow strip with a concrete curb and landscaping rock or something similar could be installed. We do recommend that the joint sealant should be maintained at the paved areas.

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BUILDING SYSTEMS ASSESSMENT

Laramie County Community College
Building Condition Assessment



Executive Summary – Laramie County Community College Masterplan – Building Condition Assessments

Summary

Laramie County Community College (LCCC) issued a request for proposal for the five year update to the ongoing masterplan. As part of that masterplan process, LCCC included the requirement to perform a Building Condition Assessment for all buildings older than approximately 5 years. As part of that requirement, Wood was hired in collaboration with Plan One/Architects to perform site investigations of the buildings in question. From those site investigations we have developed an inventory for each of the buildings for mechanical, electrical, plumbing, and building interiors and exteriors. The inventory identifies 802 major maintenance items across 25 buildings, totalling over \$13 million in short and long term projects.

Purpose of this report

The purpose of the inventory database is to develop a living document for each building that can be used by LCCC to identify short and long term major maintenance projects. As projects are completed, or more are identified, LCCC will be able to keep a running list going forward. The inventory also includes approximate costs to assist in grouping projects for any funding that may become available. Often funding will become available and projects will need to be identified quickly so the money can be spent within a certain timeframe. The inventory also includes a picture summary of all of the identified issues, assisting operation personnel in identifying the issue noted in the database.

Building List	Year built	Last Renovation	Square Foot	Short term	Long term	Total	Mechanical Description
Administration	1969	2006	9,650	\$71,081.44	\$95,145.34	\$179,792.25	HVAC system is aging. AHU is beyond expected life and corroded. Recor
Andrikopoulos Business & Technology	1973	200	21,888	\$233,309.58	\$471,127.09	\$728,209.15	Pumps are nearing expected life and corr damage, AHU-2 is equipped with R-22 DX coil term.
Arena	1982		74,745	\$105,285.43	\$81,579.69	\$195,993.92	Existing fans and infrared heaters in the ar replacement in the short term.
Arp	1981	2001	27,050	\$281,366.76	\$273,192.65	\$542,007.01	The AHU is a large unit with two large fans. The units appear to be in good fair conditi recommended for replacement in the short
Auto Body	1974	1988	17,656	\$284,208.03	\$180,899.61	\$449,682.56	The autobody shop has 4 AHUs, still contric is beyond the expected life. Recommend
Auto Tech	1973		22,687	\$115,906.60	\$101,182.96	\$326,356.06	AHU and pumps are beyond expected life term.
Boyd Agriculture	1985		15,284	\$143,388.71	\$198,316.68	\$342,565.41	AHU is the original system and while contri condition it is 10+ years beyond expected Recommend replacement in the short ten
Career & Technical	1979	1989	27,900	\$277,312.60	\$149,215.78	\$429,685.87	Many units are beyond their life expecten AHU, pneumatic controls, and pumps. CT-1 leaks into the mechanical space. The Lenn

Figure 1 - Overall Building Summaries

Mechanical

The mechanical inventory has identified nearly 300 short and long term major maintenance projects for the buildings. This includes major mechanical equipment installation dates, make model and serial number (when available), a condition score, and service life. Each building includes a summary identifying aging air handling equipment, pneumatic controls, damaged coils, corrosion, and equipment nearing or past the expected service life. \$43,075 is estimated for immediate repairs, \$4,151,715 for short term repairs, and \$4,313,047 for long term repairs, for a total of \$8,543,204 in identified mechanical repairs.

Electrical

The electrical inventory has identified 218 short and long term major maintenance projects for the buildings. This includes major electrical equipment installation dates, make model and serial number (when available), a condition score, and service life. Each building includes a summary identifying motor control center condition, transformers at or past end of life, generator condition and remaining life, and panels with OEM parts that are not currently available. \$343,512 is estimated for short term repairs, and \$1,513,366 for long term repairs, for a total of \$1,919,611 in identified electrical repairs.



Figure 2 - Picture Database

Plumbing

The plumbing inventory has identified 133 short and long term major maintenance projects for the buildings. This includes major plumbing equipment installation dates, make model and serial number (when available), a condition score, and service life. Each building includes a summary identifying rusting valves and hydrants, missing backflow preventers, general plumbing fixture condition and an extensive review of each building's domestic hot water systems. \$12,370 is estimated for immediate repairs, \$120,566 for short term repairs, and \$2,484,353 for long term repairs, for a total of \$2,617,290 in identified plumbing repairs.

Interior and Exterior Building

The interior and exterior building inventory has identified 135 short and long term major maintenance projects for the buildings along with a number of ADA requirements that are not being met. Each building includes a summary identifying everything from caulk and joint sealants needing replaced to wall coverings and carpet that are aging. Roofs were inspected with recommendations for how long until the college can expect until they will require replacement. The ADA review also identified a building that does not have proper elevator access which will need to be addressed at the next major renovation. \$12,370 is estimated for immediate repairs, \$120,566 for short term repairs, and \$2,484,353 for long term repairs, for a total of \$2,617,290 in identified plumbing repairs.

TECHNOLOGY - CAMPUS STANDARDS

Executive Summary – Laramie County Community College Masterplan Technology System Standards

Summary: Laramie County Community College (LCCC) is required to produce an update to their ongoing masterplan every five years. As part of this effort, Technology Consulting Solutions (TCS) was retained through Plan One Architects to assess the Technology Systems installed on the College's Cheyenne campus. These systems were not evaluated in the previous 2016 master plan update or the 2011 master plan.

From our initial assessment of the systems installed on campus, the College has upgraded many of their Technology Systems, including their video surveillance system, access control system, wireless (WIFI) network and classroom audiovisual systems, providing staff and students with state-of-the-art systems. What the College was lacking were Campus Technology Standards that document these systems, including product specifications and requirements, installation practices and the delineation of work between the various trades and the Owner that could be used for future new construction or renovation projects on campus.

Purpose: Therefore the purpose of this portion of the Master Plan Update is to develop standards for architects, engineers, consultants, and contractors regarding the design and installation of these systems on the Cheyenne campus. New construction projects would need to strictly adhere to the requirements outlined within the standards unless written approval is provided from LCCC prior to design completion. Renovation projects would need to adhere to these requirements to the best of the ability of the design team and/or contractor.

Standards Development Approach: TCS met several times on campus with the College's IT Department to thoroughly review the requirements of these systems, including performing several high level site observations of the installed systems. Draft standards were developed and forwarded to the IT Department for review and comment. The draft standards were also reviewed by the campus Physical Plant department regarding security system requirements. Comments were incorporated into the standards and these updated standards were forwarded to the College for a final review.

Technology Standards Overview: Two technology standards were developed as part of this effort and are included within the appendix. These include:

- Division 27– Structured Cabling System Standards
- Division 28 – Electronic Security System Standards

These standards document the requirements of several of the Technology Systems on campus, namely the:

- IT / Telecommunications Infrastructure
- IT Network Voice / Data Systems
- Wireless LAN Network
- Security - Access Control System (ACS)
- Security – Video Surveillance System (VSS)

Division 27 Structured Cabling System Standard: This standard provides detailed requirements on the design and construction of telecom rooms, the pathways/raceways and the low voltage and communications cabling that supports various Technology Systems.

The standard lists the core systems that must be installed within telecom rooms and other low voltage systems that may also need to be supported and the minimum required sizes of these rooms for new construction and major renovation projects. Guidelines for the locations and

quantities of rooms is also included in the standard. These guidelines should be used by engineers and consultants during space planning with the architect to ensure these spaces are incorporated into the floorplans.

The standard also provides requirements for the provisioning of the telecom rooms for coordination with the design team such as floor, wall, ceiling and door requirements for architects and power, lighting and HVAC requirements for MEP engineers. The standard provides provisioning requirements for the contractor on the installation of the various systems within the rooms, including equipment rack and ladder rack layouts, grounding and bonding requirements and required clearances.

The standard provides guidelines for the various pathways/raceways required. This includes the pathways that interconnect a new building to the campus IT infrastructure, the pathways required between telecom rooms, linking the systems with backbone cabling and the pathways for installation of cables to various Technology devices throughout a building.

The standard also identifies the cabling requirements. These include the outdoor cabling required for linking a new building to the campus data centers, the cabling required for linking the telecom rooms within a building and the cabling required to the various Technology devices such as voice/data outlets, WIFI access points, including security cameras and doors to name a few.

The standard also identifies the requirements for various spaces within a building such as classrooms, conference rooms, computer labs, offices, and connectivity to facilities such as elevators, electrical rooms and mechanical rooms, to name a few.

Division 28 Electronic Security Systems Standard: This standard provides detailed requirements on the design and construction of the access control system (ACS) and video surveillance system (VSS).

This standard documents the existing campus-wide ACS and VSS systems installed that must be integrated into for security systems being installed within new construction and major renovation projects. Products are identified within the standard along with the installation practices required during construction. A responsibility matrix is provided that identifies the delineation of work amongst the various trades and Owner.

The standard documents the College's specific ACS system requirements. This includes what doors will require security and to what level such as card reader access, only monitoring if a door was left open, etc. All products are identified and listed that will need to be specified and installed, along with documenting the installation practices required at security doors and the associated pathways and cabling required to tie doors into the system. Guidelines for the installation of the ACS equipment within the telecom rooms is provided, including any provisioning required such as power, grounding and wall space for engineers and consultant to coordinate during design and for installation by the contractor. Coordination requirements are listed for the design team and contractor, such as coordinating with Division 8 door hardware, door frames, AC power, fire alarm and IT connectivity interfaces.

The standard documents the College's specific VSS system requirements. This includes identifying where cameras are to be installed and their viewing requirements. While the College furnishes and installs the security cameras, per the responsibility matrix, engineers and consultants still need to produce construction drawings identifying camera locations, pathways and cabling and telecom room equipment requirements. The standard includes installation practices required at security cameras and the associated pathways and cabling required to tie cameras into the system. Guidelines for the installation of the VSS equipment within the telecom rooms is provided, including any provisioning required such as power and grounding.