



CAPITAL PROJECTS PROPOSAL 2021-2023

**Psychology Building
Renovation | Stand-alone**



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CAPITAL PROJECT PROPOSAL 2021-23

**Psychology Building
Renovation | Stand-alone**

**Please direct questions about this proposal to:
Steve Dupont, CWU Director of Government Relations
509-201-0528**

August 15, 2020

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CAPITAL PROJECT PROPOSAL 2021-23

Psychology Building
Renovation | Stand-alone

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2020 PROJECT PROPOSAL CHECKLIST
2021-23 Biennium Four-year Higher Education Scoring Process

INSTITUTION	CAMPUS LOCATION
375 - Central Washington University	Ellensburg Washington
PROJECT TITLE	FPMT UNIQUE FACILITY ID # (OR NA)
Psychology Building Renovation	NA
PROJECT CATEGORY	PROJECT SUBCATEGORY
Renovation	Standalone
PROPOSAL IS	
New or Updated Proposal (for scoring)	Resubmitted Proposal (retain prior score)
<input type="checkbox"/> New proposal <input checked="" type="checkbox"/> Resubmittal to be scored (more than 2 biennia old or significantly changed)	<input type="checkbox"/> Resubmittal from 2017-19 biennium <input type="checkbox"/> Resubmittal from 2019-21 biennium
CONTACT	PHONE NUMBER
Steve Dupont	Steve.dupont@cwu.edu / 509-201-0528

PROPOSAL CONTENT

- Project Proposal Checklist: this form; one for each proposal
- Project Proposal Form: Specific to category/subcategory (10-page limit)
- Appendices: templates, forms, exhibits and supporting/supplemental documentation for scoring.

INSTITUTIONAL PRIORITY

- Institutional Priority Form. Sent separately (not in this packet) to: [Darrell Jennings](#).

Check the corresponding boxes below if the proposed project meets the minimum threshold or if the item listed is provided in the proposal submittal.

MINIMUM THRESHOLDS

- Project is not an exclusive enterprise function such as a bookstore, dormitory or contract food service.
- Project meets LEED Silver Standard requirements.
- Institution has a greenhouse gas emissions reduction policy in place in accordance with RCW 70.235.070 and vehicle emissions reduction policy in place per RCW 47.01.440 or RCW 43.160.020 as applicable.
- Design proposals: A complete predesign study was submitted to OFM by July 1, 2020.
- Growth proposals: Based on solid enrollment projections and is more cost-effectively providing enrollment access than alternatives such as university centers and distance learning.
- Renovation proposals: Project should cost between 60 – 80% of current replacement value and extend the useful life of the facility by at least 25 years.
- Acquisition proposals: Land acquisition is not related to a current facility funding request.
- Infrastructure proposals: Project is not a facility repair project.
- Stand-alone, infrastructure and acquisition proposals: is a single project requesting funds for one biennium.

2020 PROJECT PROPOSAL CHECKLIST
2021-23 Biennium Four-year Higher Education Scoring Process

REQUIRED APPENDICES

- Capital Project Report CBS 002
- Project cost estimate:
 - CBS 003 for projects between \$2 million and \$5 million
 - Excel C-100 for projects greater than \$5 million
- Degree Totals and Targets template to indicate the number of Bachelors, High Demand and Advanced degrees expected to be awarded in 2021. (Required for Overarching Criteria scoring criteria for Major Growth, Renovation, Replacement and Research proposals).
- Availability of Space/Campus Utilization template for the campus where the project is located. (Required for all categories/subcategories except Infrastructure and Acquisition proposals).
- Assignable Square Feet template to indicate program-related space allocation. (Required for Growth, Renovation and Replacement proposals, all categories/subcategories).

OPTIONAL APPENDICES

Attach supplemental and supporting project documentation, *limit to materials directly related to and needed for the evaluation criteria*, such as:

- Degree and enrollment growth projections
- Selected excerpts from institutional plans
- Data on instructional and/or research space utilization
- Additional documentation for selected cost comparables (acquisition)
- Selected materials on facility conditions
- Selected materials on code compliance
- Tables supporting calculation of program space allocations, weighted average facility age, etc.
- Evidence of consistency of proposed research projects with state, regional, or local economic development plans
- Evidence of availability of non-state matching funds
- Selected documentation of prior facility failures, high cost maintenance, and/or system unreliability for infrastructure projects
- Documentation of professional assessment of costs for land acquisition, land cleanup, and infrastructure projects
- Selected documentation of engineering studies, site survey and recommendations, or opinion letters for infrastructure and land cleanup projects
- Other: Click or tap here to enter text.

I certify that the above checked items indicate either that the proposed project meets the minimum thresholds or the corresponding items have been included in this submittal.

Name: Delano Palmer

Title: Director of Capital Planning & Projects

Signature:  Click or tap here to enter text

Date: 8/17/20 Click or tap here to enter text

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INSTITUTION	CAMPUS
Central Washington University	Ellensburg
PROJECT TITLE	
Psychology Building Renovation	

SUMMARY NARRATIVE

▪ **Problem statement (short description of the project – the needs and the benefits)**

CWU seeks funding to upgrade the **47-year old** Psychology Building, which has never had a major renovation. The project is necessary to ensure the health and safety of students and employees, to address continued degradation of the facility associated with previous use as a chimpanzee lab, and to accommodate significant anticipated increases in enrollment.

A key factor driving the need for renovation is the use of the building to house chimpanzees between 1981 and 1992. The north wing of the third floor of the building housed five chimpanzees within the Chimpanzee and Human Communication Institute (CHCI). Sewage, air handling, and other systems were contaminated and corroded by the extreme demands associated with caring for the chimpanzees. The integrity of the floor structure has been compromised due to the saturation of chimpanzee urine; highly acidic urine compromised the integrity of reinforcing steel in the concrete floor. The entire building’s air-handling systems were clogged with chimpanzee dander and hair. Resulting health and safety concerns caused the south-west wing of the third floor to be completely closed off and it has been unusable since 1993. **Appendix G** shows the extent of the affected floor plan.

Age, too, has taken a toll on the building. All of the existing mechanical and electrical systems have reached their life-cycle end and have become unreliable and must be replaced. The 1973-era HVAC heats and cools inefficiently and does not supply sufficient air exchange. The noise and vibration from the system interferes with class and lab instruction.

The building exterior walls and windows are poorly insulated and energy inefficient. In parts of the building the insulation has liquefied and seeps through openings in the walls. Electrical service is outdated and cannot support modern technological needs of faculty or students. The elevators regularly break down, leaving students stranded. The fire alarm system is outdated and must be replaced. Lighting and lighting controls are not up to code, are poorly designed and do not support a proper learning environment.

Project benefits. The project will return the full building to use, since the chimpanzee contamination has left about 9 percent of the building unusable for the last 28 years. The Psychology Building is heavily trafficked by students of all majors as they complete their general education requirements. Restoring the 6408 square feet of space to service will be needed to accommodate the increased number of students and classes taking place. The psychology program in particular accommodates tremendous demand by students transferring from community colleges. CWU is a primary service provider to transfer students, who comprise 40 percent all CWU enrollments.

The project extends the useful life of the Psychology Building by at least 25 years, and will enhance indoor air quality; improve fire safety, replace battered finishes, and improve ADA compliance for signage and physical access. The renovation will significantly increase energy efficiency, with utilities monitoring, improved insulation, and improvements in the building envelope.

▪ **History of the project or facility**

The Psychology Building was **constructed in 1973** and has not had any significant remodeling or renovation work. From 1981 through 1992 Psychology housed the Chimpanzee and Human Communication Institute, providing living space for five adult chimpanzees. The chimps moved to a different facility in 1993, and the wing in which the chimps were housed was closed, due to systems contamination and damage associated with the wear and tear of the chimps. A complete chimpanzee deterioration report was completed detailing concerns and dangers of housing the chimpanzees (**Appendix H**).

CWU requested but did not receive funding to renovate this facility in the 2011-13, 2017-19, and 2019-21 biennia. Since then, issues with the building have continued to deteriorate.

▪ **University programs addressed or encompassed by the project**

Bachelor of Science in Psychology

Master of Science in Psychology, with specializations in Applied Behavior Analysis, Experimental Psychology, and Mental Health Counseling

Education Specialist, School Psychology, which prepares students to practice as a school psychologist in public schools. The program is approved by the National Association of School Psychologists; program graduates are eligible to become Nationally Certified School Psychologists (NCSP).

Central Washington University's Community Counseling and Psychological Assessment Center (CCPAC) provides counseling, assessment, and psycho-educational services. The mission of the CCPAC is provide excellent counseling and psychological services for individuals and families, as well as to train mental health professionals. As part of this mission, students of Central Washington University's mental health counseling, school counseling, and school psychology programs are trained to enhance their counseling and assessment skills and to become more effective counselors and psychologists.

Ellensburg School District Developmental Preschool serves children three to five years of age who demonstrate delays in one or more areas of development, including communication, cognitive skills, social-emotional, motor skills or medical issues. Services are rendered in a classroom setting with the primary goal of encouraging the development of critical skills leading to a successful elementary school experience. This program provides multiple research and internship opportunities for CWU students.

Additionally, the Psychology Building provides space for classes in the following programs or departments:

- Political Science Department

- Sociology Department
- Douglas Honors College Program
- University and Enrichment Program

CATEGORY-SPECIFIC SCORING CRITERIA

► **Age of building since last major remodel** - *Identify the number of years since the last substantial renovation of the facility or portion proposed for renovation. If only one portion of a building is to be remodeled, provide the age of that portion only. If the project involves multiple wings of a building that were constructed or renovated at different times, calculate and provide a weighted average facility age, based upon the gross square feet and age of each wing.*

The **47-year old** Psychology Building has never had a major renovation.

► **Condition of building** - *Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 comparable framework study and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.*

The Psychology building has a 2016 FCI score of 3.4. A complete FCI list is attached as **Appendix I**.

This score is based largely on the fact that it has not undergone renovation or major remodel since the building was constructed in 1973. Following are major structural and systems conditions that produced the score of 3.4:

- Contamination and corrosion related to chimpanzee urine occurred from 1981 until they were relocated in 1993. In addition to the third-floor wing shown on the attached floor plan, there was damage and contamination from leakage of urine through the floor to the ceiling below (**Appendix H**).
- Degradation of steel underlying the third floor: The consultant report (**Appendix H**) identifies the history problem areas and attempted remediation. No long-term solution has been successful.
- The HVAC system is original to the 1973 building. Control systems are outdated and inefficient. Air supply is not adequate. Mechanical parts are unreliable with frequent breakdowns. The system is noisy, making it difficult for students to concentrate in class and lab environments.
- Existing electrical service is inadequate to support the use of technology.
- The building exterior walls and windows are poorly insulated and energy inefficient.
- The elevators regularly break down, leaving students and employees stranded.
- Lighting and lighting controls are poorly designed and do not support a proper learning environment.
- The fire alarm system is outdated, not ADA compliant, and needs to be replaced.
- Interior finishes and doors are in poor condition.

► **Identify whether the building is listed on the Washington Heritage Register, and if so, summarize its historic significance.**

No, the Psychology Building is not listed on the Washington Heritage Register.

► **Significant health, safety, and code issues-** *It is understood that all projects that obtain a building permit will have to comply with current building codes. Identify 1.) whether the project is needed to bring the facility within current life safety (including seismic and ADA), or energy code requirements. 2.) Clearly identify the applicable standard or code and 3.) describe how the project will improve consistency with it. 4.) Provide selected supporting documentation in appendix and reference them in the body of the proposal.*

CWU's Psychology Building is currently out of compliance with the following Codes and Standards and this project will achieve compliance with all:

WAC 51-11C - Washington State Energy Code: The Psychology Building has HVAC systems which do not meet this code in the areas of system types, excessive fan horsepower, absence of heat recovery on large ventilation systems, and lack of unoccupied zone temperature control and system setback. The lighting system consists of old fixtures and does not meet this code in the areas of total connected load per square foot, lack of occupancy-based control, and perimeter daylighting control. The proposed HVAC and lighting system replacements will achieve performance levels better than these code-required minimums.

ANSI/ASHRAE Standard 55 - Thermal Environmental Conditions for Human Occupancy: The HVAC systems in the Psychology Building have so many deficiencies, primarily due to equipment that is beyond its useful life, that adequate comfort can no longer be assured. Also, many occupants plug in a space heater at their desk to maintain adequate heat. This often overloads the electrical system and is a fire and safety hazard. The proposed system replacement will bring the HVAC systems into compliance with ASHRAE Standard 55.

ASHRAE Standard 62.1 - Ventilation: The HVAC system is currently unable to provide adequate ventilation in nearly all occupied zones. The system fans are inadequate and the ductwork is very leaky, resulting in poor indoor air quality throughout the building. The replacement system and controls will establish compliance with this Standard and provide excellent indoor air quality.

HB 1257 - Washington State Energy Performance Standard for Commercial Buildings: The Department of Commerce is directed by HB 1257 to develop rules for the adoption of the Washington State Energy Performance Standard for Commercial Buildings. HB 1257 requires Commerce to use ANSI/ASHRAE/IES standard 100-2018, Energy Efficiency in Existing Buildings (standard) as the basis for these rules. The Psychology Building will not meet the State of Washington mandated energy targets without significant energy improvements. Non-compliance is subject to strict monetary penalties. Compliance will help CWU reduce greenhouse gas (GHG) emissions in line with the reduction targets specified in RCW 70.235.070.

2018 WSEC, Section C405: Existing lighting systems are not in compliance with the energy code for lighting controls, daylight harvesting, controlled receptacles and lighting power density. Proposed lighting systems will include a networked lighting control system and energy efficient LED lighting fixtures to meet the energy code requirements for control and lighting power

density. Code Reference Link: https://sbcc.wa.gov/sites/default/files/2020-04/2018%20WSEC_C%202nd%20print.pdf

2018 IBC, Section 1008: Existing emergency lighting systems are not in compliance with the lighting requirements for emergency illumination along the entire building egress path. Proposed lighting systems will provide battery backed emergency and exit lighting along the full path of egress including the building exterior egress points.

Code Reference Link: <https://codes.iccsafe.org/content/IBC2015/chapter-10-means-of-egress>

► **Reasonableness of Cost -**

Provide as much detailed cost information as possible, including baseline comparison of costs per square foot (SF) with the cost data provided in Chapter 5 of the scoring process instructions and a completed OEM C-100 form. Also, describe the construction methodology that will be used for the proposed project.

The total project cost will not exceed the estimated project cost of \$9,992,000, with a MACC (Maximum Allowable Construction Cost) of \$6,268,072. A **C-100 estimate form is included in Attachment B**. A more detailed cost estimate will be developed during the early stages of the design phase. The construction methodology will be design, bid, and build.

► **Availability of space/utilization on campus -** *Describe the institution's plan for improving space utilization and how the project will impact the following:*

CWU's 10-year capital plan consists of a series of projects that will replace and upgrade CWU's outdated inventory of instructional spaces, many of which were constructed to support a single function or even an individual research project within a department. CWU's capital plan contemplates an avoidance of dedicated space wherever possible, preferring a much more flexible mix of general scheduled classroom and class/lab spaces.

Central's activity-based budget (ABB) model also supports maximization of space use. ABB determines the resources that are available to the academic colleges, as well as the proportionate share of expenses that are needed to run the university and support the mission of the colleges. An annual academic space mapping exercise determines each college's percentage of assignable space, and, in effect, charges each college for the use of office space, conference rooms, classrooms and labs. The system, in place since 2018, has caused departments to think carefully about the space they need and incentivized them to release as much space as possible—or pay a higher rate.

CWU currently exceeds the targeted 22-hour-per-week utilization standard for classroom space. Renovation of classroom space in the Psychology Building will enhance the efficiency with which space can be scheduled and used by improving the usefulness and functionality of the space.

CWU class laboratory space is currently below targeted levels. This project will update and repurpose existing space in order to increase efficiency and usefulness of class laboratories.

► **Efficiency of space allocation -** *For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. To the extent any proposed allocations exceed FEPG standards, explain*

the alternative standard that has been used, and why. See Chapter 4 of the scoring process instructions for an example. Supporting tables may be included in an appendix.

The space allocations for classrooms, instructional labs, and offices will be consistent with Facility Evaluation and Planning Guide (FEPG) assignable square feet standards, and building efficiency guidelines.

Identify the following on form CBS002:

- Usable square feet (USF) in the proposed facility: 35,758 USF
- Gross square feet (GSF). Existing and Proposed facility is 75,064 GSF
- Building efficiency (USF divided GSF). Target efficiency is 47.6%, but the project goal is to increase efficiency during this renovation.

► **Adequacy of space**

Describe whether and the extent to which the project is needed to meet modern educational standards and/or to improve space configurations, and how it would accomplish that.

One of the main objectives is to restore 6408 gross square feet of unusable space that is currently contaminated from the chimpanzee occupation from 1981-1992. This project will effectively increase the amount of space in the existing building that can be used for instruction and labs.

The second main objective is to resolve issues arising from nearly 50-year old infrastructure. The following issues that inhibit modern educational standards will be addressed by this project:

- Inefficient and old HVAC system noise that interferes with instruction
- Outdated electrical service that cannot support modern technological needs of faculty or students
- The elevators that regularly break down, leaving students and faculty stranded
- ADA non-compliance

Several spaces in the building were constructed to meet the needs of experimental programs planned at the time of facility opening in 1973. These include cages to house large, powerful primates. As discussed previously, that function no longer exists, but the residual effect of the program lingers, and is damaging the facility and environment of the building. This project will return to use the north wing of the third floor.

CWU's accrediting agency is the Northwest Commission on Colleges and Universities.

Standard 2.1.1, "Physical and Technology Infrastructure," provides the following directive:

"Consistent with its mission, the institution creates and maintains physical facilities and technology infrastructure that are accessible, safe, secure, and sufficient in quantity and quality to ensure healthful learning and working environments that support and sustain the institution's mission, academic programs, and services." The facility infrastructure is not fully accessible. The north wing of the third floor is neither safe nor accessible. The Psychology building does not provide the quality or quantity of space required and does not ensure healthful learning and working environments.

TEMPLATES REQUIRED IN APPENDIX FOR SCORING

Availability of space/campus utilization (Appendix D)

Program-related space allocation **(Appendix E)**

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDICES

Appendix A	Capital Project Report CBS002
Appendix B	Project Cost Estimate C100
Appendix C	Degree Totals and Targets
Appendix D	Availability of Space/Campus Utilization
Appendix E	Assignable Square Feet Program-related Space Allocation
Appendix F	CWU Capital Master Plan 2019-2029
Appendix G	Floor Plan – Third Floor SW Section (Chimp Area)
Appendix H	Chimpanzee Deterioration Report
Appendix I	FCI Summary – Psychology

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX A

Capital Project Report CBS002

Capital Project Request

2021-23 Biennium

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Version: 1A CWU Working Version 2021 - 2023

Report Number: CBS002

Date Run: 8/13/2020 3:18PM

Project Number: 30000781

Project Title: Psychology Renovation

Description

Starting Fiscal Year: 2020

Project Class: Program

Agency Priority: 10

Project Summary

CWU seeks funding to upgrade the 47-year old Psychology Building, which has never had a major renovation. The project is necessary to ensure the health and safety of students and employees, to address continued degradation of the facility associated with previous use as a chimpanzee lab, and to accommodate significant anticipated increases in enrollment.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

A key factor driving the need for renovation is the use of the building to house chimpanzees between 1981 and 1992. The north wing of the third floor of the building housed five chimpanzees within the Chimpanzee and Human Communication Institute (CHCI). Sewage, air handling, and other systems were contaminated and corroded by the extreme demands associated with caring for the chimpanzees. The integrity of the floor structure has been compromised due to the saturation of chimpanzee urine; highly acidic urine compromised the integrity of reinforcing steel in the concrete floor. The entire building's air-handling systems were clogged with chimpanzee dander and hair. Resulting health and safety concerns caused the south-west wing of the third floor to be completely closed off and it has been unusable since 1993. **Appendix G** shows the extent of the affected floor plan.

Age, too, has taken a toll on the building. All of the existing mechanical and electrical systems have reached their life-cycle end and have become unreliable and must be replaced. The 1973-era HVAC heats and cools inefficiently and does not supply sufficient air exchange. The noise and vibration from the system interferes with class and lab instruction.

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Project benefits. The project will return the full building to use, since the chimpanzee contamination has left about 9 percent of the building unusable for the last 28 years. The Psychology Building is heavily trafficked by students of all majors as they complete their general education requirements. Restoring the 6408 square feet of space to service will be needed to accommodate the increased number of students and classes taking place. The psychology program in particular accommodates tremendous demand by students transferring from community colleges. CWU is a primary service provider to transfer students, who comprise 40 percent all CWU enrollments.

The project extends the useful life of the Psychology Building by at least 25 years, and will enhance indoor air quality; improve fire safety, replace battered finishes, and improve ADA compliance for signage and physical access. The renovation will significantly increase energy efficiency, with utilities monitoring, improved insulation, and improvements in the building envelope.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.

This capital request is considered a "Stand-Alone Renovation" project that will be designed, permitted and built within the 21-23 biennium. The majority of the work is expected to be complete by June 2023.

Capital Project Request

2021-23 Biennium

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Version: 1A CWU Working Version 2021 - 2023

Report Number: CBS002

Date Run: 8/13/2020 3:18PM

Project Number: 30000781

Project Title: Psychology Renovation

Description

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

The project would correct the major deficiencies identified in question 1. No action would allow the facility to continue to deteriorate (higher deferred repair costs) and waste state operating money to heat and cool a very energy inefficient facility.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

As a Stand-Alone renovation project, to be designed and constructed in one biennium, a Pre-Design was not prepared. Alternatives will be reviewed during the programming/design phase, once the project is funded.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

CWU's Psychology Building serves the following programs:

Bachelor of Science in Psychology

Master of Science in Psychology, with specializations in Applied Behavior Analysis, Experimental Psychology, and Mental Health Counseling

Education Specialist, School Psychology, which prepares students to practice as a school psychologist in public schools. The program is approved by the National Association of School Psychologists; program graduates are eligible to become Nationally Certified School Psychologists (NCSP).

Central Washington University's Community Counseling and Psychological Assessment Center (CCPAC) provides counseling, assessment, and psycho-educational services. The mission of the CCPAC is provide excellent counseling and psychological services for individuals and families, as well as to train mental health professionals. As part of this mission, students of Central Washington University's mental health counseling, school counseling, and school psychology programs are trained to enhance their counseling and assessment skills and to become more effective counselors and psychologists.

Ellensburg School District Developmental Preschool serves children three to five years of age who demonstrate delays in one or more areas of development, including communication, cognitive skills, social-emotional, motor skills or medical issues. Services are rendered in a classroom setting with the primary goal of encouraging the development of critical skills leading to a successful elementary school experience. This program provides multiple research and internship opportunities for CWU students.

Additionally, the Psychology Building provides space for classes in the following programs or departments:

- *Political Science Department*
- *Sociology Department*

375 - Central Washington University
Capital Project Request

2021-23 Biennium

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Version: 1A CWU Working Version 2021 - 2023

Report Number: CBS002

Date Run: 8/13/2020 3:18PM

Project Number: 3000781

Project Title: Psychology Renovation

Description

- Douglas Honors College Program
- University and Enrichment Program

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share OF project cost allowable and the supporting citation or documentation.

No, the project does not leverage non-state funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

This project is identified as a university priority on CWU's 2019-2029 Master Plan (www.cwu.edu/facility/master-plan).

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.

No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 Puget Sound Recovery) in the 2021-23 Operating Budget Instructions.

No, the project is not linked to the Puget Sound Action Agenda

How does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? Please elaborate.

Yes, the existing building is very energy inefficient and will not meet state mandated goals for energy performance without a major renovation. The main focus of this project is to completely replace the early 1970s HVAC system and lighting to bring the building up to current energy code standards.

Is there additional information you would like decision makers to know when evaluating this request?

No.

Location

City: Ellensburg

County: Kittitas

Legislative District: 013

Project Type

Remodel/Renovate/Modernize (Major Projects)

**375 - Central Washington University
Capital Project Request**

2021-23 Biennium

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Version: 1A CWU Working Version 2021 - 2023

Report Number: CBS002

Date Run: 8/13/2020 3:18PM

Project Number: 30000781

Project Title: Psychology Renovation

Description

Growth Management impacts

Central Washington University (CWU) is required to adhere to the State Environmental Policy Act (SEPA). The SEPA process is where growth management act impacts are considered. CWU coordinates planning efforts with all applicable city and county jurisdictions.

New Facility: No

Funding

Acct Code	Account Title	Estimated Total	Expenditures		2021-23 Fiscal Period	
			Prior Biennium	Current Biennium	Reapprops	New Approps
057-1	State Bldg Constr-State	9,992,000				9,992,000
	Total	9,992,000	0	0	0	9,992,000
Future Fiscal Periods						
		<u>2023-25</u>	<u>2025-27</u>	<u>2027-29</u>	<u>2029-31</u>	
057-1	State Bldg Constr-State					
	Total	0	0	0	0	

Schedule and Statistics

	<u>Start Date</u>	<u>End Date</u>
Pre-design		
Design	7/1/2021	1/1/2022
Construction	3/1/2022	6/1/2023

	<u>Total</u>
Gross Square Feet:	75,064
Usable Square Feet:	35,758
Efficiency:	47.6%
Escalated MACC Cost per Sq. Ft.:	84
Construction Type:	College Classroom Facilities
Is this a remodel?	Yes
A/E Fee Class:	B
A/E Fee Percentage:	11.51%

Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Acquisition Costs Total	0	0.0%
Consultant Services		
Pre-Schematic Design Services	0	0.0%
Construction Documents	1,017,599	10.2%

**375 - Central Washington University
Capital Project Request**

2021-23 Biennium

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Version: 1A CWU Working Version 2021 - 2023

Report Number: CBS002

Date Run: 8/13/2020 3:18PM

Project Number: 30000781

Project Title: Psychology Renovation

Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Consultant Services		
Extra Services	198,125	2.0%
Other Services	468,481	4.7%
Design Services Contingency	99,692	1.0%
Consultant Services Total	1,078,500	10.8%
 Maximum Allowable Construction Cost(MACC)	 6,268,072	
 Site work	156,300	1.6%
Related Project Costs	0	0.0%
Facility Construction	6,111,772	61.2%
GCCM Risk Contingency	0	0.0%
GCCM or Design Build Costs	0	0.0%
Construction Contingencies	627,038	6.3%
Non Taxable Items	0	0.0%
Sales Tax	572,294	5.7%
Construction Contracts Total	7,467,404	74.7%
 Equipment		
Equipment	634,440	6.4%
Non Taxable Items	0	0.0%
Sales Tax	52,659	0.5%
Equipment Total	687,099	6.9%
 Art Work Total	 49,711	 0.5%
 Other Costs Total	 333,440	 3.3%
 Project Management Total	 375,790	 3.8%
 Grand Total Escalated Costs	 9,991,944	
Rounded Grand Total Escalated Costs	9,992,000	

Operating Impacts

No Operating Impact

Capital Project Request

2021-23 Biennium

*

<u>Parameter</u>	<u>Entered As</u>	<u>Interpreted As</u>
Biennium	2021-23	2021-23
Agency	375	375
Version	1A-A	1A-A
Project Classification	*	All Project Classifications
Capital Project Number	30000781	30000781
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX B

Project Cost Estimate CBS003 & C100

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2020

Agency	Central Washington University
Project Name	Psychology Building Renovation
OFM Project Number	30000781

Contact Information

Name	Steve Dupont
Phone Number	509-963-2111
Email	Steve.Dupont@cwu.edu

Statistics

Gross Square Feet	75,064	MACC per Square Foot	\$79
Usable Square Feet	35,758	Escalated MACC per Square Foot	\$84
Space Efficiency	47.6%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	11.51%
Remodel	Yes	Projected Life of Asset (Years)	

Additional Project Details

Alternative Public Works Project	No	Art Requirement Applies	Yes
Inflation Rate	2.38%	Higher Ed Institution	Yes
Sales Tax Rate %	8.30%	Location Used for Tax Rate	Ellensburg
Contingency Rate	10%		
Base Month	June-20	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule

Predesign Start		Predesign End	
Design Start	July-21	Design End	January-22
Construction Start	March-22	Construction End	June-23
Construction Duration	15 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	\$9,476,389	Total Project Escalated	\$9,991,947
		Rounded Escalated Total	\$9,992,000

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2020

Agency	Central Washington University
Project Name	Psychology Building Renovation
OFM Project Number	30000781

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	\$0	Acquisition Subtotal Escalated	\$0

Consultant Services			
Pre-design Services	\$0		
A/E Basic Design Services	\$518,050		
Extra Services	\$192,000		
Other Services	\$232,747		
Design Services Contingency	\$94,280		
Consultant Services Subtotal	\$1,037,077	Consultant Services Subtotal Escalated	\$1,078,500

Construction			
Construction Contingencies	\$593,000	Construction Contingencies Escalated	\$627,039
Maximum Allowable Construction Cost (MACC)	\$5,930,000	Maximum Allowable Construction Cost (MACC) Escalated	\$6,268,072
Sales Tax	\$541,409	Sales Tax Escalated	\$572,295
Construction Subtotal	\$7,064,409	Construction Subtotal Escalated	\$7,467,406

Equipment			
Equipment	\$600,000		
Sales Tax	\$49,800		
Non-Taxable Items	\$0		
Equipment Subtotal	\$649,800	Equipment Subtotal Escalated	\$687,099

Artwork			
Artwork Subtotal	\$49,711	Artwork Subtotal Escalated	\$49,711

Agency Project Administration			
Agency Project Administration Subtotal	\$355,391		
DES Additional Services Subtotal	\$0		
Other Project Admin Costs	\$0		
Project Administration Subtotal	\$355,391	Project Administration Subtotal Escalated	\$375,791

Other Costs			
Other Costs Subtotal	\$320,000	Other Costs Subtotal Escalated	\$333,440

Project Cost Estimate			
Total Project	\$9,476,389	Total Project Escalated	\$9,991,947
		Rounded Escalated Total	\$9,992,000

Cost Estimate Details

Acquisition Costs					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	\$0		NA	\$0	

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Cost Estimate Details

Consultant Services				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	\$0	1.0258	\$0	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	\$518,050			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	\$518,050	1.0319	\$534,576	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	\$20,000			
Geotechnical Investigation				
Commissioning	\$80,000			
Site Survey				
Testing	\$25,000			
LEED Services	\$20,000			
Voice/Data Consultant	\$15,000			
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)	\$30,000			
Landscape Consultant				
LCCA	\$2,000			
Insert Row Here				
Sub TOTAL	\$192,000	1.0319	\$198,125	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	\$232,747			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	\$232,747	1.0574	\$246,107	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	\$94,280			
Other				
Insert Row Here				
Sub TOTAL	\$94,280	1.0574	\$99,692	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL			\$1,078,500	

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Cost Estimate Details

Construction Contracts				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities	\$50,000			
G40 - Site Electrical Utilities	\$100,000			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	\$150,000	1.0420	\$156,300	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	\$0	1.0420	\$0	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure	\$100,000			
B20 - Exterior Closure	\$250,000			
B30 - Roofing	\$200,000			
C10 - Interior Construction	\$730,000			
C20 - Stairs	\$100,000			
C30 - Interior Finishes	\$800,000			
D10 - Conveying	\$100,000			
D20 - Plumbing Systems	\$800,000			
D30 - HVAC Systems	\$1,100,000			
D40 - Fire Protection Systems	\$600,000			
D50 - Electrical Systems	\$1,000,000			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other				
Insert Row Here				
Sub TOTAL	\$5,780,000	1.0574	\$6,111,772	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	\$5,930,000		\$6,268,072	

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7) Construction Contingency

Allowance for Change Orders	\$593,000		
Other			
Insert Row Here			
Sub TOTAL	\$593,000	1.0574	\$627,039

8) Non-Taxable Items

Other			
Insert Row Here			
Sub TOTAL	\$0	1.0574	\$0

Sales Tax

Sub TOTAL	\$541,409		\$572,295
CONSTRUCTION CONTRACTS TOTAL	\$7,064,409		\$7,467,406

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Cost Estimate Details

Equipment					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
E10 - Equipment	\$500,000				
E20 - Furnishings	\$100,000				
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	\$600,000		1.0574	\$634,440	
1) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	\$0		1.0574	\$0	
Sales Tax					
Sub TOTAL	\$49,800			\$52,659	
EQUIPMENT TOTAL					
EQUIPMENT TOTAL	\$649,800			\$687,099	

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Cost Estimate Details

Artwork					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Project Artwork	\$0				0.5% of total project cost for new construction
Higher Ed Artwork	\$49,711				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	\$49,711		NA	\$49,711	

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Cost Estimate Details

Project Management					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Agency Project Management	\$355,391				
Additional Services					
Other					
Insert Row Here					
PROJECT MANAGEMENT TOTAL	\$355,391		1.0574	\$375,791	

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Cost Estimate Details

Other Costs					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Mitigation Costs					
Hazardous Material Remediation/Removal	\$100,000				
Historic and Archeological Mitigation	\$20,000				
Permit, Other	\$200,000				
Insert Row Here					
OTHER COSTS TOTAL	\$320,000		1.0420	\$333,440	

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C-100(2020)
Additional Notes

Tab A. Acquisition

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Tab B. Consultant Services

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Tab C. Construction Contracts

Insert Row Here

Tab D. Equipment

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Tab E. Artwork

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Tab F. Project Management

Insert Row Here

Tab G. Other Costs

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX C

Degree Totals and Targets

Degree Totals and Targets Template

Required for Overarching Criteria for Major Growth, Renovation, Replacement and Research Proposals

Institution:	CENTRAL WASHINGTON UNIVERSITY
Campus location:	ELLENSBURG
Project name:	PSYCHOLOGY BUILDING RENOVATION

	Increase in bachelor's degrees awarded	Increase in bachelor's degrees awarded in high-demand fields	Increase in advanced degrees awarded
2018-19 Statewide Public Four-Year Dashboard (a)	2,423	695	315
Number of degrees targeted in 2021 (b)	73	21	9
2018-19 totals/2021 target (a/b)	3319.2%	3309.5%	3500.0%
Score:	0.00	0.00	0.00

Comments:

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX D

Availability of Space/Campus Utilization

Availability of Space/Campus Utilization Template

2020 Four-year Higher Education Scoring Process

Required for all categories except Infrastructure and Acquisition.

Project Name:	Psychology Building Renovation		
Institution:	Central Washington University		
Campus Location:	Ellensburg		
Identify the average number of hours per week each (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2018 on the proposed project's campus. Please fill in the green shaded cells for the campus where the project is located.			
(a) General University Classroom Utilization		(b) General University Lab Utilization	
Fall 2019 Weekly Contact Hours	130,280	Fall 2019 Weekly Contact Hours	33,788
Multiply by % FTE Increase Budgeted	0.00%	Multiply by % FTE Increase Budgeted	0.00%
Expected Fall 2020 Contact Hours	130,280	Expected Fall 2020 Contact Hours	33,788
Expected Fall 2020 Classroom Seats	6,447	Expected Fall 2020 Class Lab Seats	3,357
Expected Hours per Week Utilization	20.2	Expected Hours per Week Utilization	10.1
HECB GUC Utilization Standard	22.0	HECB GUL Utilization Standard	16.0
Difference in Utilization Standard	-8%	Difference in Utilization Standard	-37%
If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving that level of utilization.			
The CWU masterplan and strategic plans project and enrollment increase of 2,000 headcount by fall 2024. The Humanities and Social Sciences project includes a request to demolish Farrell Hall and L&L buildings which will take 1,032 seats of outdated instructional capacity out of service. This will allow CWU to "right-size" and re-balance our instructional capacity with teaching spaces that meet modern pedagogical demands.			

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX E

Assignable Square Feet Program-related Space Allocation

Program Related Space Allocation Template

Assignable Square Feet

Required for all Growth, Renovation and Replacement proposals.

Institution:

CENTRAL WASHINGTON UNIVERSITY

Campus location:

ELLENSBURG

Project name:

PSYCHOLOGY BUILDING RENOVATION

Input the assignable square feet for the proposed project under the applicable space types below:

Type of Space	Points	Assignable Square Feet	Percentage of total	Score [Points x Percentage]
Instructional space (classroom, laboratories)	10	17,409	50.25	5.02
Research space	2	-	0.00	0.00
Office space	4	12,054	34.79	1.39
Library and study collaborative space	10	-	0.00	0.00
Other non-residential space	8	5,182	14.96	1.20
Support and physical plant space	6	-	0.00	0.00
Total		34,645	100.0	7.61

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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX F

Central Washington University

Capital Master Plan 2019-2029 is located at

www.cwu.edu/facility/master-plan

See Chapter 4: CWU Capital Planning Priorities under section

“Facilities Priorities: Teaching & Learning”

An Interactive online campus map is located at

www.cwu.edu/map

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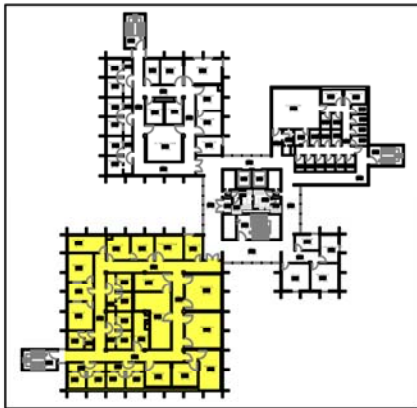


CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX G

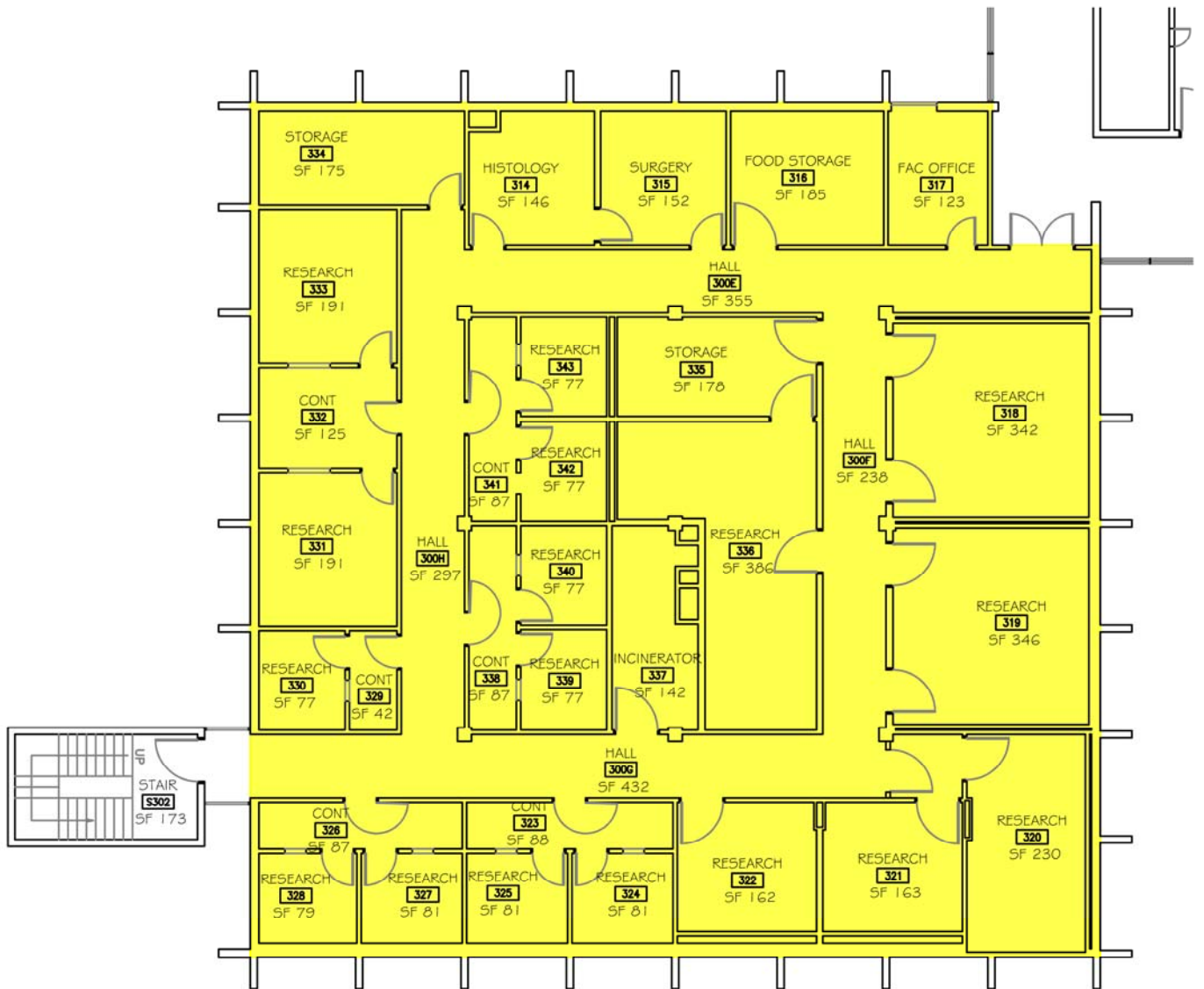
Psychology Building – Third Floor Plan – SW (Chimp Area)



KEY PLAN

FORMER CHIMPANZEE WING AT PSYCHOLOGY BUILDING.

SQUARE FOOTAGE: 6408 SF



PSYCHOLOGY BUILDING THIRD FLOOR - SW Wing

SCALE: 1/16" = 1'-0"
SCALE REFLECTED ON 8.5x11 SHEET

UPDATED: 07/20/2016
CWU FACILITIES MANAGEMENT DEPARTMENT



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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX F

Central Washington University

Capital Master Plan 2019-2029 is located at

www.cwu.edu/facility/master-plan

An Interactive online campus map is located at

www.cwu.edu/map

CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX F

Central Washington University

Capital Master Plan 2019-2029

with referenced appendices are located at:

www.cwu/facility/master-plan

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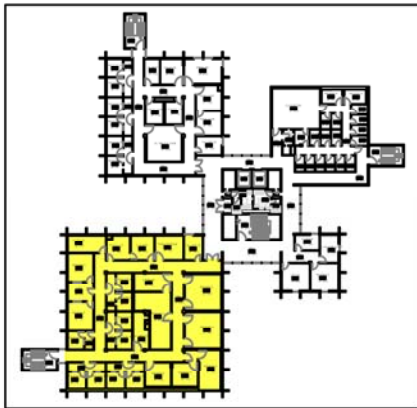


CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX G

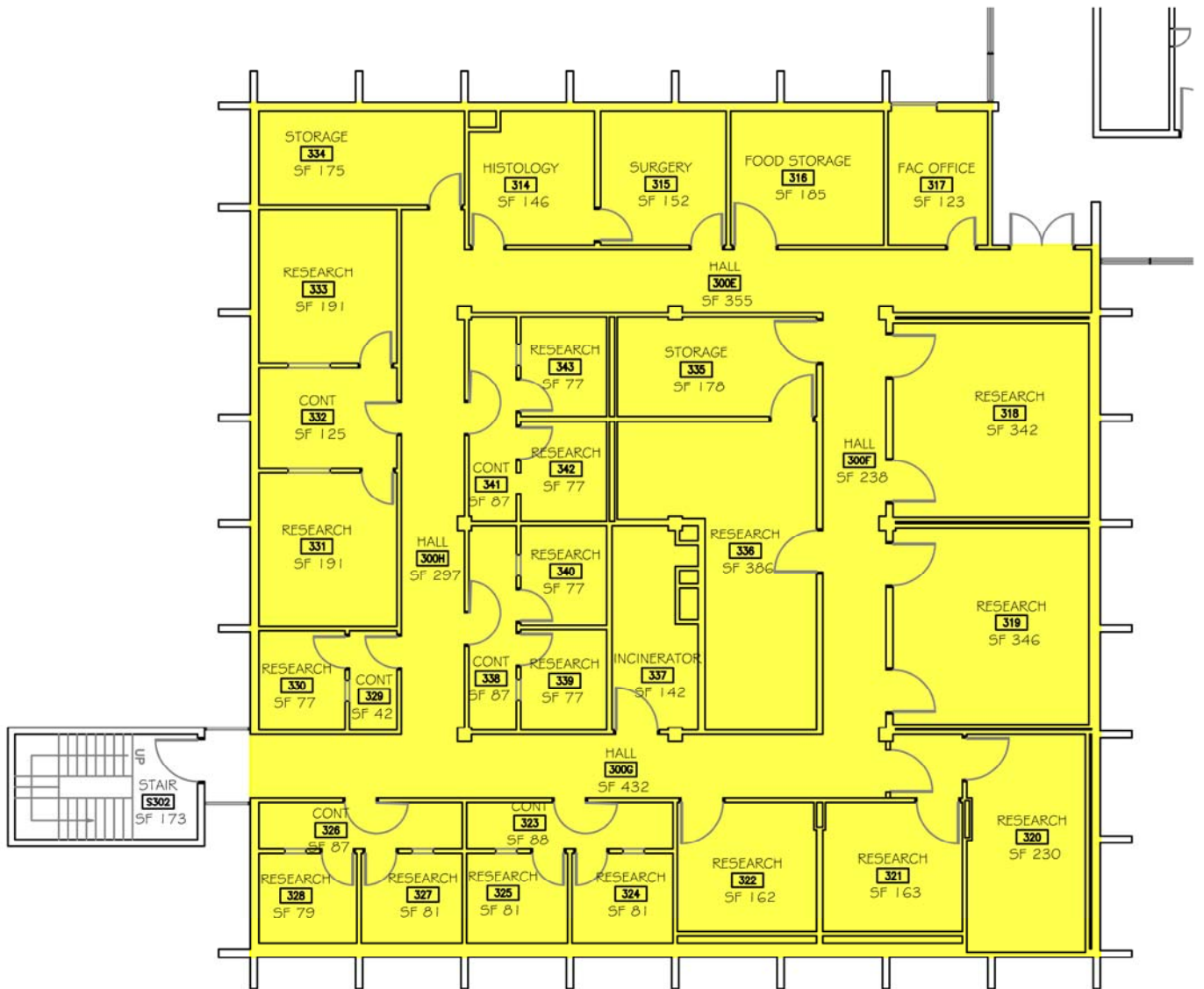
Psychology Building – Third Floor Plan – SW (Chimp Area)



KEY PLAN

FORMER CHIMPANZEE WING AT PSYCHOLOGY BUILDING.

SQUARE FOOTAGE: 6408 SF



PSYCHOLOGY BUILDING THIRD FLOOR - SW Wing

SCALE: 1/16" = 1'-0"
SCALE REFLECTED ON 8.5x11 SHEET

UPDATED: 07/20/2016
CWU FACILITIES MANAGEMENT DEPARTMENT



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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX H

Chimpanzee Deterioration Report

CENTRAL WASHINGTON UNIVERSITY
PHYSICAL PLANT

MEMORANDUM

TO: Paul B. Bechtel, Director
FROM: Leonard H. Goodwin, Supervisor, Building Maintenance
DATE: January 28, 1983
SUBJECT: Wall and Floor Treatment, Psychology Building, Primate Area

There are five (5) separate rooms of concern with an approximate total of 2,500 square feet of combined wall (4' high) and floor area.

My estimate to prep and coat the entire area is \$6,700.00, using Anchor Coating #6014 with a top coating "wear surface" on floors only. (\$2.72 per square foot).

If it is decided to use this system, I would suggest that we try to arrange to do only the two center rooms (364 and 365) during spring break for a "test area". Then if, by the end of spring or summer quarter, it appears that the system is going to be satisfactory we then proceed to complete the work during summer break in August. However, our costs would be approximately \$500.00 greater in that we would be "setting up" twice. (Total estimated cost for these two rooms is \$2,450.00.)

I would like to suggest at this time that a great deal of consideration and study be given to Mr. Goltz concern of structural deterioration within the slabs. If we coat over the fractures, does the deterioration cease?

LHG/erm

CENTRAL WASHINGTON UNIVERSITY
PHYSICAL PLANT

MEMORANDUM

TO: F. W. "Bill" Allison, Business Manager
FROM: Paul B. Bechtel, Director
DATE: February 1, 1983
SUBJECT: Recommended Plan of Action on Chimp Lab Leaks in Psychology Building

A study of the leak problems through floor slabs into second floor classrooms from the chimpanzee labs in the Psychology Building was began in early November, 1982. Mr. Gary L. Goltz, an upper classman in Industrial Technology with several years of responsible experience in commercial construction was hired to conduct the study. On January 17, 1983 he submitted a report entitled, "Research Results and Repair Recommendations on Chimp Laboartory Leaks."

In his report Mr. Goltz points out the potentially damaging nature of the leaks if they are allowed to continue. In addition to extremely unsanitary conditions due to fecal material in the solutions penetrating the slabs through structural cracks, there is the very real danger of deterioration of the concrete and corrosion of the reinforcing steel in the slabs. Since the load bearing ability of the floor slabs would be compromised to some degree if these conditions are allowed to continue it is imperative that a method be found to stop the fluid penetration and dry the moisture out of the slabs. Deterioration of concrete and corrosion of steel, being dependent upon a solution to progress, would substantially be stopped if all liquid penetration of the slabs was prevented and the slabs were allowed to dry.

Unfortunately we have not been successful in locating a manufacturer of waterproof coatings who is willing to provide a reasonable guarantee for an installation under the conditions existing in the chimp labs. Therefore, as a short term solution to the leak problem, I am recommending that Physical Plant crews be authorized to install an epoxy type liquid membrane coating (A-LMC)^R as manufactured by Anchor Coatings Inc. of Waukesha, Wisconsin. This is a highly resilient two component coating and has been successfully installed on some of the roofs of the campus. (See attached sample) The material is applied using high pressure airless spray equipment and can be tinted to light pastel colors. The cost of installation in the five rooms on floors and up the walls four feet is estimated at \$7,500. This includes a thorough cleaning, acid

F. W. "Bill" Allison
Memorandum
Page 2
February 1, 1983

etching of surfaces for adhesion of the material and an application of grit in the surface of the floor coating to avoid slipping.

It should be made clear that the application of this coating is not being recommended as a permanent solution to the leak problem. Although the wear qualities of the coating are expected to be good the material is not impervious to wear or abuse and can be punctured by a sharp instrument. In order to avoid continued leak related damage to the building in the future I am recommending, therefore, that funds be requested to construct a primate building at ground level to house the chimps. In my judgment this could be accomplished in a price range comparable to that for work needed in the building to permanently solve the leaks and would completely remove the risk of structural damage to the building from possible future leaks.

PBB/erm

RESEARCH RESULTS AND
REPAIR RECOMMENDATIONS ON
CHIMP LABORATORY LEAKS

A consulting project by

Gary L. Goltz

January 1983

In 1971 Central Washington University built their present Psychology Building. The building was designed by Grant, Copeland, Chervenak Architects of Seattle, Washington. The prime general contract was awarded to Moen Construction of Yakima, Washington. Its rather striking design and use of materials resulted in an award from the American Concrete Institute.

The building consists of four floors, the third being used, in part, for laboratories. The primary purpose of these labs was the study of rats. Because of the necessity of washing the cages and cleaning of the rooms, a waterproof floor was to be installed. The floor itself is concrete with a barrier material troweled on to prevent water leakage. The floor slopes to a trench drain that carries the water out of the building via the waste water drainage system.

Moen Construction chose Mortrude Flooring Company as the sub-contractor for the waterproof flooring. The specifications for the building did not list the type of material to be used. Mortrude chose Synterra Monoplate Type "P", a polyester industrial flooring. This is a troweled on, monolithic, waterproof floor system. It is, according to the manufacturer's literature, "a heavy duty, chemical resistant industrial floor. It is durable and has a non-slip troweled finish that is resistant to abrasion, impact damage, acids, and alkalies." Analysis of the floor system shows it to be approximately 1/4 inch thick. Synterra, the company that produced the product, has since gone out of business.

However, literature describing the product was received from Mortrude Flooring. The literature cautions the applicator repeatedly about the necessity of proper surface preparation. One disclaimer states, "Synterra, however, has no control over preparation. This is your responsibility. Proper preparation may be the key to successful end results . . . pay careful attention to this phase of the work." They go on to warn against applying unless the substrate is sound, thoroughly dry, clean and acid etched prior to application. Likewise, open cracks, spalls, pits, and depressions must be filled after priming with a binder paste. Cracks

must also be fiberglass reinforced. Even moisture in the aggregate can ruin the batch. They also point out that the batched ingredients have a "pot life" that requires that it be applied promptly to insure effectiveness.

The present situation would imply that these precautions were not followed. In fact, within one year of the initial application, blistering occurred which necessitated Mortrude's return to repair the problems. But were these blisters isolated problems or symptomatic of system failure due to improper application? It is hard to ascertain at this time, but the next phase in the evolution of the problem points toward a failure of the system, regardless of the cause.

Over a year ago the problem of leaks in the floor system became an increasing source of difficulty. The effect of these leaks was that three classrooms and a storage area had to be abandoned fall quarter, 1982. Other areas of the building, such as those rooms directly under some of the rat labs, had exhibited small leaks over the years, but the leaks beneath the chimp labs were worse, and continuous.

The physical plant at the college was called upon to repair the leaks. Silicon caulking and other patching techniques were tried, but to no avail. During the last year many theories have been put forth, but no careful research was ever conducted and, therefore, the source never identified.

My own study of the problem has shown the following regarding the source of the leaks:

1. The source of the water is both wall and floor leaks.
2. Water appears on the underside of the slab at the lowest point, which is the thickened portion where the troughs are located.
3. The troughs and drains are not the source of the problem.
4. No singular leak is the core of the problem. Rather the problem is widespread through the surface.

In addition to the obvious fact that valuable classrooms are being left empty, there are several other problems that these recurrent leaks have caused.

All should be considered, their net effect being that a permanent solution be implemented as soon as possible.

The first, and most apparent damage done by the leaking water, is water spotting. The drop ceiling below has become spotted extensively by the leaks. Likewise, the wall's paint has blistered and cracked. Similarly, the floor tile is discolored where water has evaporated. These problems, though extensive, are not serious by nature and can be easily repaired by the physical plant staff.

Another area of damage is on the outside of the building. Water is leaking through the outside wall and appearing on the outside wall surface. This would appear to be a manifestation of poor design. No water stop was called for in the joint where the exterior wall joins the floor system. Also, improper allowance was made for water where the windows and floor meet in the lab. This correlates with where the water appears on the outside. The leak has caused discoloration on the outside of the building due to efflorescence. In time, with freezing and thawing, what is presently a water spot may well cause spalling off of the concrete exterior.

Concrete is a porous material. As water has leaked through the slab floor for the last year a far more serious problem has been accumulating. As the barrier material has leaked, there has been degradation of the concrete with a resultant loss of structural integrity. Tests conducted by the Chemistry Department point towards this catastrophic effect. The tests were conducted on material taken from built up accumulations at recurrent leak spots. This stalagmitic material was found to be a deposit of leaching calcium carbonate from the concrete. Iron, sand, and aggregate were also present. This, as stated before, implies a loss of strength in the concrete and reinforcing bar. Though probably only a minimal amount of structural damage has taken place to date, the cumulative effect is unacceptable. Therefore, leakage cannot be allowed to continue.

Furthermore, the water is far more dangerous than plain tap water. The

stains and discoloration pointed towards a more acidic concentration than found in the water system. Samples were taken of leaking water and tested by the Biology Department. Not suprisingly, the water contained fecal coliforms. These present a danger to the concrete and rebar due to the potential for aggressive chemical attack. Also, there is a danger to the health of individuals who come in contact with the water or contaminated surfaces.

This fecal material is, of course, a product of washing feces from the chimp cages. Each day two washings take place, one at 8 a.m. and the other at 3 p.m. These are carried out by various personnel from the chimp lab, with similar methods. The water temperature varies from hot (120°F) to cool. Its source is utility sinks in the respective labs. Hoses are used with garden variety nozzles to direct the water to where it is needed.

As water leaks through the barrier and filters through the porous concrete, the fecal material is deposited throughout the slab. This presents yet another problem. This material has to be flushed or neutralized. Its continued presence constitutes, as mentioned before, a danger to the structural integrity of the floor system, as well as a lurking health hazard.

It should therefore be apparent that an immediate and thorough solution must be implemented. To achieve these goals, the physical plant hired me to conduct research and make recommendations. The object of my study is to isolate the causes of the leaks and make appropriate suggestions for repairs. Choice of implementation rests with the University.

All consideration and any solutions must take into account the following problems:

1. Compatability of the chemical constituents of the existing floor and any resurfacing material.
2. Possibility of structural movement at existing cracks.
3. Ventilation during any resurfacing.

4. Possible conflicts due to protracted shut down time of repair work without alternative facilities to house chimps.
5. Four major requirements of any chimp lab floor are:
 - a. impact resistance
 - b. acid resistance
 - c. a good modulus of flexibility
 - d. surface should maintain good footing when wet
6. Acidity and bacteria neutralization.
7. Problems in bonding new surface unless dry.
8. Multiple sources of the leaks.

The construction industry's most common solution to the need for waterproofing concrete is through a polymer, such as an epoxy. These surfaces can meet considerations required for a chimp lab (see #5, a-d above). Consequently, it is my recommendation that an epoxy surface be used.

Several problems that are common to epoxy barriers, however, bear special consideration. There is a necessity of adhesion which can be impeded by moisture or lack of compatibility with the existing surface. Due to the need of adhesion, both the resurfacing material and the existing surface must be of approximately the same modulus of elasticity. Without this, the system will fail.

By nature, epoxy barriers are not easily applied. Temperature, moisture, and proper proportions, to name just a few considerations, cause application to be more of an art than a science. Therefore applicators must have experience and be certified by the manufacturer. Selection of an appropriate barrier material, surface preparation, and proper application are of critical importance to the success of any system.

Any application on the floor of the present laboratories presents problems. Resurfacing the present floor seems to be risky, due to the many problems listed. It is, therefore, my recommendation that the University consider a different

location for the facility. Though costly, a new facility has an advantage-- the fact that it can be designed specifically for the use intended. Putting further investment into the present facility is to be lured by initial investment, while ignoring life costs. A new location could also give consideration to future growth of the program.

Band-aid solutions do not seem well advised. All of the field experts that I spoke to cautioned about "quick fix" solutions. Consequently, it is my recommendation that if a repair of the present facility is decided upon, that the following set of procedures be used:

1. A complete and thorough set of specifications be drawn up.
2. That the job be put out for bid to technically oriented firms with appropriate experience.
3. Thorough inspection of the job should be made by the University to guarantee compliance with product requirements.
4. Flood testing to be completed prior to final job acceptance by the University.
5. Any new surface that is used to repair the existing one must also include a coved base that extends at least eighteen inches up the wall.
6. Old surface must be either removed or abraided to secure maximum adhesion.
7. Particular care must be shown where the floor system has been violated (around cage mounts).

I would discourage use of paint-on type, thin coat, epoxy resins. Though salesmen may type this method as quick and easy, it is more likely to fail due to cracking or lack of adhesion. Likewise, the thin coat is more likely to be broken by impact.

The performance specifications should set up standards, not name products. To name a product would be to assume the responsibility of product selection, and liability if it fails.

Likewise, I have made no product recommendations. Any company who contracts to do the job should make that selection, probably after core samples and testing. A high technology company has far more experience and expertise than myself in the field and is in a better position to make such a selection.

Another advantage of selecting a qualified contractor to do the work is a job warranty. If the University were to take on the job themselves, they would face, aside from lack of expertise in epoxy surfaces, the risk of system failure, again. Given the high cost that is liable to be involved, the risks seem to outweigh the savings.

Finally, I must admit to a degree of frustration at the end of this project. It was my earnest hope that I would be able to find a solution that was effective, quick, and inexpensive. Alas, if such a solution does exist, and I doubt this after weeks of research, it eluded me. Unfortunately, the subject of epoxy resurfacing is sadly lacking in published information. Most of the information I have presented was garnered from the emperical experiences of various field professionals.

I would like to thank Len Goodwin for his support and Debbie Fouts for her patience and help. Special thanks is due Mike Morse, of the City of Seattle's Material Testing Laboratory, for invaluable help in finding literature and technical expertise.

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CENTRAL WASHINGTON UNIVERSITY

Physical Plant

Office of the Director

MEMORANDUM

TO: Roger S. Fouts, Professor of Psychology

FROM: John M. Holman, P. E. *JMH*

DATE: December 23, 1988

SUBJECT: Repairs to Psychology Building Associated with Chimpanzee Lab

RE: Physical Plant Memo 8/31/83, Leonard Goodwin
Chimp and Rat Lab Floor Repair

Physical Plant Memo 2/1/83, Paul Bechtel
Recommended Plan of Action Chimp Lab Leaks in
Psychology Building

As you can see from the attached correspondence that I was able to retrieve from our building records over \$95,000 was expended on repairs associated with the water problems in the animal labs. I have discussed the matter with the Building Maintenance supervisor and he indicates that in just four years the situation is becoming a problem again. Our people believe the leaks below the chimpanzee lab area are associated with the structural movement of the building as a result of differential thermal expansion and contraction.

In my opinion a repair of the floor coverings could easily exceed \$100,000 this time based on the costs expended in 1983 escalated to current rates. Such repairs would be mandatory in the next three to five years in order to protect the building from deterioration.

The proposal to construct a ground level facility specifically designed for the chimpanzee lab would solve these problems because the facility would be independent of any multi stories structure and constructed with these problems taken into account.

If you have need for additional information feel free to contact my office.

JMH/erm
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CAPITAL PROJECT PROPOSALS 2021-23

Psychology Building Renovation
Renovation – Standalone Project

APPENDIX I
2016 FCI Report

Building Detail

Central Washington University
CENTRAL WASHINGTON UNIVERSITY
PSYCHOLOGY BUILDING Facility
PSYCHOLOGY BUILDING

Institution ID 375
Site ID 375

Building ID A05142

Building Size - Gross	75,064	Building Size- Assignable	35,758
Year Of Original Construction	1973	Year Of Last Renovation	
Building Use Type	Research		
Construction Type	Heavy		

Survey Date	01/07/16	Survey By	EC
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Building Condition Summary

Condition Index	0.27
Relative Condition Score	4
Weighted Avg Condition Score	3.4

Building Components

Systems	Scores	Comments
A Substructure:	2.0	
Foundations		
Standard Foundations	2	
Slab on Grade	2	
B Shell:	3.5	
Superstructure		
Floor Construction	3	
Roof Construction	3	
Exterior Closure		
Exterior Walls	4	
Exterior Windows	4	
Exterior Doors	4	
Roofing		
Roof Coverings	4	
Roof Opening	4	
Projections	3	
C Interiors:	3.4	

Building Detail

Central Washington University
CENTRAL WASHINGTON UNIVERSITY
PSYCHOLOGY BUILDING Facility
PSYCHOLOGY BUILDING

Institution ID 375
Site ID 375

Building ID A05142

Interior Construction		
Fixed and Moveable Partitions	3	
Interior Doors	3	
Specialties	4	
Staircases		
Stair Construction	3	
Stair Finishes	3	
Interior Finishes		
Wall Finishes	4	
Floor Finishes	4	
Ceiling Finishes	3	

D Services:	3.7	
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Vertical Transportation		
Elevators and Lifts	4	
Plumbing		
Plumbing Fixtures	3	
Domestic Water Distribution	3	
Sanitary Waste	3	
Rain Water Drainage	3	
Special Plumbing Systems	3	
HVAC		
Energy Supply	3	
Heat Generating Systems		DOES NOT EXIST
Cooling Generating Systems		DOES NOT EXIST
Distribution Systems	4	
Terminal and Package Units	4	
Controls and Instrumentation	4	
Special HVAC Systems and Equipment	4	
Fire Protection		
Fire Protection Sprinkler Systems	3	
Stand-Pipe and Hose Systems	3	
Fire Protection Specialties	2	
Special Fire Protection Systems		DOES NOT EXIST
Electrical		
Electrical Service and Distribution	4	
Lighting and Branch Wiring	4	
Communication and Security Systems	4	
Special Electrical Systems	4	

E Equipment and Furnishings:	3.7	
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Building Detail

Central Washington University
CENTRAL WASHINGTON UNIVERSITY
PSYCHOLOGY BUILDING Facility
PSYCHOLOGY BUILDING

Institution ID 375

Site ID 375

Building ID A05142

Equipment and Furnishings

Fixed Furnishings and Equipment 4

Moveable Furnishings (Capital Funded Onl 3

E Special Construction: 4.0

Special Construction

Integrated Constr. & Special Constr. Syste 4 ANIMAL QUARTERS
Special Controls and Instrumentation DOES NOT EXIST

2016 Academic Condition Summary

