

All Agency Project Request

2013 - 2015 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Milwaukee	285-0B-1937N	SANDBURG HALL NORTH

<u>Project No.</u>	1611B	<u>Project Title</u>	Sandburg Hall North Tower Elevator Renovation
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Project Intent

This project provides investigation and research, pre-design, and design services to replace or recondition the motors, controls, and elevator car assemblies for three elevator shafts. The elevators will be evaluated to identify deficiencies, develop design solution alternatives, and recommend appropriate corrective measures.

Project Description

This project modernizes three traction elevators in the north tower. Project work includes reconditioning the DC traction motors or replacement with new AC gearless motors; replacing motor/elevator controls with current microprocessor and regenerative drive technology that is non-proprietary; replacing door operator equipment and floor call stations; and demolition of the car assemblies and replacement with car enclosures that have LED lighting and automatic fan and light shutdown when car is not in use. The new car enclosures and call stations will have vandal resistant features, audible voice announcer, LCD display with keyboard at microprocessor, top-of-car inspection station railing/landing system, and reinstallation of in-car network video cameras. All ropes and traveling power/signal cables along with all car/machine room/hoist-way wiring will be replaced. The car safety wedge devices, fly-ball over-speed governors, and wire rope/tension weight assemblies and rope grippers will also be replaced as needed. The guide rails and fastenings, roller guides, sheaves, car frames/platforms, and entrance door/frames at each landing will be reconditioned and reused as needed. Alterations to the elevator pits and minor changes to the electrical, HVAC, sump drainage system, fire alarm, and fire sprinkler systems will be made as required for compliance with industry codes and standards. If feasible and economically viable, this project will create a new walk-out access to the elevator pit(s).

Facing the cars from the floor call station, the left car stops at all 28 landings, but the middle and right cars are express elevators that only stop on the odd floors. All three cars have synchronized dispatching controls.

Project Justification

The elevator motors, traveling cables, and most of the associated wiring is original to the building (1969) and have surpassed their projected lifespan. The motors have not been manufactured for several decades. The car sub-floors are constructed of plywood and are failing due to decomposition of the wood over time. The drives were installed 20 years ago and are no longer being supported by the manufacturer. The frequency of bearing, seal, drive, and circuit board failures have increased and elevator reliability is becoming a significant concern. When parts fail, maintenance personnel search nationally for compatible replacements as they are no longer manufactured, nor easily found. Machined components have worn from years of continuous use and no longer operate with precision. Deviations in their designed operating actions trigger safety features that immediately shut-down the elevator, often resulting in student, guest, staff, and visitor entrapment. The frequency of malfunctions and duration of break-downs has raised dependability, safety and loss of revenue concerns. During past failures, cars have been inoperable for more than six consecutive weeks while the north tower was occupied by more than 900 residents.

Fire safety and personnel safety (elevator mechanics) will be enhanced with the completion of this project. As one example, the addition of railings on top of cars will enable tie-off and provide fall protection as mechanics ride up the 270 foot shaft during station inspections.

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A/E Consultant Requirements

A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of residence hall elevator construction and modernization work which involves architectural, mechanical engineering, electrical, and fire safety disciplines. Work includes site surveys, facilitating engineering assessments on the existing traction motors, acquiring field data, assuring accurate development and production of necessary design and bidding documents, and verifying as-built conditions comply with design and bidding documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and when known, include proposed consulting partners and specialty consultants. A report containing recommendations for the modernization of the Sandburg elevators including concept scope and budget estimates was completed by Performance Elevator Consulting, LLC in 2014 and is available for reference.

The consultant will verify project scope, schedule, and budget estimates, and recommend modifications as required to complete the specified project intent. The consultant will prepare a pre-design document and Design Report to establish an appropriate project scope, budget, and schedule prior to the university seeking authority to construct from the Board of Regents and State Building Commission.

Commissioning

- Level 1
 Level 2

Project Budget

Construction Cost:	\$	
Haz Mats:	\$	
Construction Total:	\$	
Contingency: 13%	\$	
A/E Design Fees: 8%	\$	
DFD Mgmt Fees: 4%	\$	
Other:	\$	
	\$1,625,000	

Funding Source(s)

	<u>Total</u>
GFSB - []	\$0
PRSB - []	\$0
Agency/Institution Cash [AGF0]	\$1,625,000
Gifts	\$0
Grants	\$0
Building Trust Funds [BTF]	\$0
Other Funding Source	\$0
	\$1,625,000

Project Schedule

SBC Approval: 06/2017
 A/E Selection: 10/2016
 Bid Opening: 09/2017
 Construction Start: 04/2018
 Substantial Completion: 08/2018
 Project Close Out: 12/2018

Project Contact

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Project Scope Consideration Checklist

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1. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction.
All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.
2. Is the project an extension of another authorized project? If so, provide the project #...
3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled?

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Hazardous materials abatement is not anticipated on this project.

4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?
All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.
5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent?
6. Are other projects or work occurring within this project's work area? If yes, provide the project # and/or description of the other work in the project scope.
7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?
Type III.
8. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here.
9. Are there any other issues affecting the cost or status of this project?
A physical survey of the machines and engineering must be conducted to determine whether the ultimate system is a rebuilt/reconditioned version of the existing DC motor system or is replaced entirely with new AC motors.
10. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed solution.
Project work is seasonal. Preferred project work schedule should be limited to late spring, summer, and/or early fall months if possible.
11. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the work load? If yes, to what extent?
Completion of this project will decrease operational maintenance costs.
12. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the issue(s).
The existing inspection stations above the cars are not guarded by safety railings. The rebuilt cars would remedy that deficiency. Also, fire alarm detection devices and sprinkler would be installed at the tops of elevator shafts, elevator lobbies and machine rooms where they are currently missing or inadequate to meet code requirements.
13. Are there potential energy or water usages reduction grants, rebates, or incentives for which the project may qualify (i.e. Focus on Energy <<http://www.focusonenergy.com>> or the local utility provider)? If yes, describe here.
14. If this is an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here.