



Office of the Chief Financial Officer and Treasurer

January 7, 2021

The Honorable Eric J. Holcomb  
Governor of the State of Indiana  
Statehouse  
Indianapolis, IN 46204

Dear Governor Holcomb:

At its meeting on December 4, 2020, the Purdue University Board of Trustees approved the planning, financing, construction and award of construction contracts for the Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project.

This project includes the repair of approximately 24,000 square feet of the metal panel section of the Armstrong Hall of Engineering roof. Existing metal panels will be removed, new plywood and a membrane will be installed, and then the metal panels will be reinstalled with stronger rivets and extra clips. The majority of the metal panels will be reused, and some new panels will be manufactured to replace any damaged panels.

This project will address safety concerns, repair damaged areas of the roof and prevent future damage by increasing the security of the metal panels. The overall life of the roof will be extended by 20-25 years as a result.

The estimated total project cost is \$3,500,000, funded by Repair and Rehabilitation Appropriations.

Subject to review by the Commission for Higher Education and recommendation by the State Budget Committee and the Budget Agency, we request your approval to proceed with this project. Attached are the completed forms that the Commission has prescribed for its review of such projects. We will be happy to answer any questions you or your staff may have or to provide any additional information that is needed.

Sincerely,

A handwritten signature in black ink, appearing to read 'CR', written over a light blue horizontal line.

Christopher A. Ruhl  
Chief Financial Officer and Treasurer

Attachments

c: Alexa Deaton, Chief Financial Officer, Indiana Commission for Higher Education  
Jasmine Williams, Director of Finance, Indiana Commission for Higher Education  
Zachary Jackson, Director, Indiana State Budget Agency  
Andy Cummings, Assistant Director, Indiana State Budget  
Kathleen Thomason, Comptroller, Purdue University  
Anne Hazlett, Senior Director, Government Relations, Purdue University

## PROJECT COST SUMMARY

### Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-21-2-06
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A
<b>Previously approved by General Assembly:</b>	No	<b>Previously recommended by CHE:</b>	No
<b>Part of the Institution's Long-term Capital Plan:</b>	Yes		

<b>Project Size:</b>	24,000	GSF (1)	0	ASF (2)	0	ASF/GSF
<b>Net change in overall campus space:</b>	0	GSF	0	ASF		

<b>Total cost of the project (3):</b>	\$ 3,500,000	<b>Cost per ASF/GSF:</b>	\$146	GSF
<b>Total cost of the demolition:</b>	\$ -		\$0	ASF
<b>Funding Source(s) for project (4):</b>	Amount	Type		
	\$ 3,500,000	R&R Appropriation		
<b>Estimated annual debt payment (6):</b>	N/A			
<b>Are all funds for the project secured:</b>	Yes			

**Project Funding:**  
 The project funding is provided by Repair and Rehabilitation Appropriations. The total cost is budgeted as part of the comprehensive fiscal year 2021 repair and rehabilitation program. All funds are secured.

**Project Cost Justification**  
 This project has a higher cost than the project listed in the comparable project section, but the project's scope is larger. Repairing the existing roof is more cost-effective than replacing the roof.

<b>Estimated annual change in cost of building operations based on the project:</b>	\$ -
<b>Estimated annual repair and rehabilitation investment (5):</b>	N/A

# PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

## Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-21-2-06
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

### Description of Project

This project will repair the approximately 24,000 square foot metal panel section of the Armstrong Hall of Engineering roof on the West Lafayette campus. This project will remove the existing metal panels; install new plywood and a high-temperature, waterproof membrane; and reinstall metal panels with stronger rivets and extra clips. The majority of the metal panels will be reused, and some new panels will be manufactured to replace damaged panels as needed.

### Need and Purpose of the Program

Armstrong Hall of Engineering opened in 2007, and the existing roof is approximately 13 years old. Multiple roof panels broke loose from their connections in 2019, causing damage and resulting in safety concerns. Temporary measures are in place to ensure the security of the roof in the short term, but a long term solution is required. This project will repair damaged areas of the roof, help ensure safety and prevent future damage by increasing the security of the metal panels, and extend the life of the roof by 20-25 years.

The roof panel failures occurred during high winds when the rivets securing the panels to their mounting tracks failed. Problems in the substrate (air barrier, plywood and metal decking), including unlevelness, contributed to these failures. Additionally, the flashing at the gutter line was installed improperly allowing water to run under the flashing. This will be repaired as part of this project. Leaks were also observed in other areas of the roof, indicating the membrane was compromised. The membrane will be enhanced with a heavier duty membrane as part of the roof repair.

### Space Utilization

No space in Armstrong Hall of Engineering is being added or removed as a result of this exterior project.

### Comparable Projects

- Purdue Memorial Union Slate Roof Replacement (2011)
  - o 3,389 SF
  - o \$325,000
  - o Cost/SF: \$96
  - o This project replaced nearly 3,400 SF of slate tile on the Purdue Memorial Union roof.
  - o This project is smaller in scope and used a different roofing material. Additionally, prices have escalated since 2011. These factors account for the differences in cost/SF.

### Background Materials

**CAPITAL PROJECT REQUEST FORM**  
**INDIANA PUBLIC POSTSECONDARY EDUCATION**  
**INSTITUTION CAMPUS SPACE DETAILS FOR Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project**

(INSERT PROJECT TITLE AND SBA No.)	Current Campus Totals			Subtotal Current and Future Space	Capital Request		Net Future Space
	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)		Space to be Terminated (1)	New Space in Capital Request (2)	
<b><u>A. OVERALL SPACE IN ASF</u></b>							
Classroom (110 & 115)	334,724	-	19,135	353,859			353,859
Class Lab (210,215,220,225,230,235)	761,365	82,254	32,782	876,401			876,401
Non-class Lab (250 & 255)	1,635,257	(17,963)	6,546	1,623,840			1,623,840
Office Facilities (300)	2,485,522	29,971	(36,455)	2,479,038			2,479,038
Study Facilities (400)	353,733	7,003	3,576	364,312			364,312
Special Use Facilities (500)	1,209,279	-	(579)	1,208,700			1,208,700
General Use Facilities (600)	977,970	2,808	16,815	997,593			997,593
Support Facilities (700)	2,947,990	121	(1,377)	2,946,734			2,946,734
Health Care Facilities (800)	113,591	89,901	-	203,492			203,492
Resident Facilities (900)	2,692,232	-	-	2,692,232			2,692,232
Unclassified (000)	33,988	-	-	33,988			33,988
<b><u>B. OTHER FACILITIES</u></b> (Please list major categories)							
<b>TOTAL SPACE</b>	<b>13,545,650</b>	<b>194,095</b>	<b>40,443</b>	<b>13,780,188</b>		<b>-</b>	<b>13,780,188</b>

Notes:

- Space/Room codes based on Postsecondary Ed Facilities Inventory and Classification Manual (2006)

(1) Identify in a footnote the specific facilities that are included in the data in these columns. Do not include pending approval, non-submitted projects or non-funded projects

Space under construction includes:

- Vet Med Teaching Hospital
- Gateway Complex
- PMU Renovations
- Purdue Bands & Orchestra Building

Space planned and funded includes:

- Data Science Building
- 2550 Northwestern Renovation
- Child Care Center Building
- Active Clinical Learning Facility

Space to be terminated includes:

N/A

## CAPITAL PROJECT COST DETAILS

Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-21-2-06
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

### ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
<b>Bid Date</b>	June	2021
<b>Start Construction</b>	August	2021
<b>Occupancy (End Date)</b>	April	2022

### ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
<b><u>Planning Costs</u></b>			
a. Engineering	\$ 227,000		\$ 227,000
b. Architectural			\$ -
c. Consulting			\$ -
<b><u>Construction</u></b>			
a. Structure	\$ 2,861,354		\$ 2,861,354
b. Mechanical (HVAC, plumbing, etc.)			\$ -
c. Electrical			\$ -
<b><u>Movable Equipment</u></b>			\$ -
<b><u>Fixed Equipment</u></b>			\$ -
<b><u>Site Development/Land Acquisition</u></b>			\$ -
<b><u>Other (PM fee, contingencies)</u></b>	\$ 411,646		\$ 411,646
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$ 3,500,000</b>	<b>\$ -</b>	<b>\$ 3,500,000</b>

# CAPITAL PROJECT OPERATING COST DETAILS

Armstrong Hall Metal Panel Roof Repair and Rehabilitation Project

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-21-2-06
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

	<b>GSF OF AREA AFFECTED BY PROJECT</b>			
<b>ANNUAL OPERATING COST/SAVINGS (1)</b>				24,000
	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	\$ -			
2. Maintenance	\$ -			
3. Fuel	\$ -	\$ -		
4. Utilities	\$ -			
5. Other	\$ -	\$ -		
<b>TOTAL ESTIMATED OPERATIONAL COST/SAVINGS</b>	N/A	N/A	N/A	N/A

**Description of any unusual factors affecting operating and maintenance costs/savings.**

N/A