Kansas State University

Waters Hall Reroof

PROGRAM

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Prepared by Facilities Campus Planning and Project Management

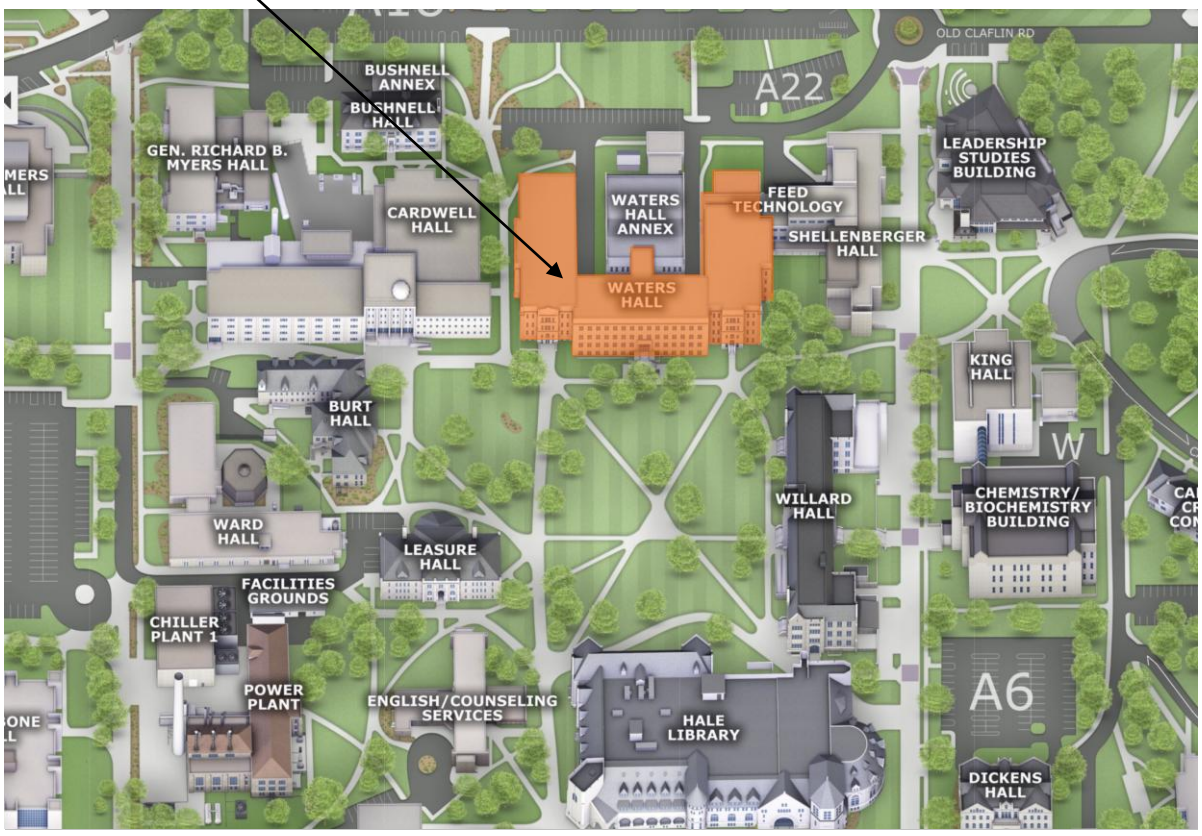
Introduction

Waters Hall forms the north edge of a campus quadrangle at Kansas State University. President H. J. Waters envisioned a home for all the university's agricultural programs during his tenure at K-State from 1909 to 1917. Waters Hall was constructed in three phases: the east wing was completed in 1913, the west wing in 1923 and the central connecting section in 1952.

Waters Hall has numerous programs and offices throughout its history. It was originally designed to accommodate the Departments of Agronomy, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Agricultural Economics and Milling. After several remodels, Waters Hall continues to serve a wide population of Kansas State University's students and faculty. The limestone clad building matches several other collegiate-gothic styled buildings on campus. Waters Hall has been significantly remodeled several times over the years to address fire and tornado damage as well as the academic units that reside there. Waters Hall has endured nearly a century of use and continues to serve students and faculty of Kansas State University. Waters Hall continues to play an important role within the university campus and provides a unifying location for the University's agricultural programs.

Site Map

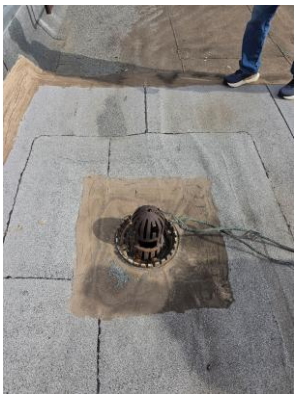
Project Location



Project Description

Waters Hall is a three-story building with a basement. It is bordered by parking to the north and a combination of sidewalks and landscaping beds to the south and west. Shellenberger Hall is attached to the eastern portion of the building. No work will be associated with Shellenberger. It is currently slated to be demolished in 2031. The existing roof consists of tapered insulation or sloped roofing with several different types of membrane surface layers occurring on multiple roof levels. Observed existing roof types appear to be a combination of Modified Bitumen of different ages, EPDM roofing, and Built-up Roofing. The existing flat roofs slope to interior drains that are generally located near the parapet edge. In most cases the drains are supported by overflow scuppers. Since the original construction and subsequent remodels, there have been several reroofing projects. The most recent are the west wing in 1993, the east wing in 1998, and the central building in 2011. Only minor repairs in various locations have been done since then. The average life expectancy for a membrane flat roof is approximately 20 years. Currently the roof ponds water in several locations which has led to ongoing roof leaks. Kansas State University seeks to undertake a comprehensive reroofing project for the building. The project has the potential to be phased to address fiscal budget concerns. As part of the reroofing process, proper tapered insulation slopes as well as new roof drains should be a priority. Noticeable deficiencies were also noted in flashing and coping cap details.











The flashing repair and replacement would coincide with minor masonry repair work at the parapet walls, coping caps, and mechanical structures on the roof.

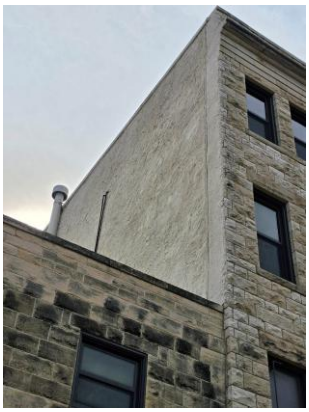
Roof access is possible from the inside of the building, but this would be primarily used by the construction workers. Building materials will have to be set on the roof by crane. The existing

site conditions would allow for staging, crane set-up, and layoff space in the north parking area and the two alleys to the east and west of the annex.

Staging, crane Set-up/layoff areas



Most of the mechanical equipment on the existing roof is functional. There are a few pieces of dormant mechanical equipment and platforms that will be identified and removed as part of the reroofing process. The associated roof penetrations would be filled in and the curbs removed. This will result in a more efficient and easier to maintain roof. Multiple mechanical units sit on low curbs and will likely need to be lifted, and have new, higher curbs installed to facilitate the proper sloping of tapered insulation. The presence of asbestos is likely in some of the roof equipment as well as drainpipe insulation and will be removed as part of the project. The exterior material on the vertical surface of the wall above the east lower roof 1 (see plan diagram) is cracking/spalling and should be repaired/restored to prevent future damage and leaks on the new roof below.



Depending on where bids come in and the availability of funds, there is the potential for phased construction. The priority roofs would be the western and eastern roof levels. The center roof could be done at a later date. Kansas State's approach to the project would be to enter into an

agreement with an architectural firm to design the reroof comprehensively with the possibility of a phased construction.

Space and Area Summaries

Roof Level		
Name of Space	**Size of Space**	
West Upper	12,849	SF
West Lower	2,440	SF
East Upper	10,437	SF
East Lower 1	2,657	SF
East Lower 2	2,375	SF
Center	10,130	SF
Total	**40,888**	**SF**

***** Note: Square foot numbers include the parapet.

Budget

Estimate of Project Costs				
Construction separated by roof levels. Projects may be phased by priority and funding.				
West Upper			$1,027,920.00	
West Lower			$195,200.00	
East Upper			$834,960.00	
East Lower 1			$212,560.00	
East Lower 2			$190,000.00	
Center			$810,400.00	
TOTAL			$3,271,040.00	
Design Fees				
(Architect, Engineer, other Consultants)			$261,683.00	8%
FF&E				
(Furniture, A/V, equipment, etc.)			NA	
Contingency				
(%)			$163,832.66	5%
Miscellaneous Costs				
(Administrative fees, internal labor, etc.)			$426,444.34	
Total			**$4,123,000.00**	

Funding

The project will be funded with SGF funds.

Project Delivery Method (AE and Construction)

This project will be a design-bid-build construction delivery method. Project scope may be phased in multiple packages to accommodate available funds.

Maintenance

Because this project only includes the replacement of the existing roof, roof maintenance will continue to be performed by a combination of Facilities Maintenance crews and on-call contractors.

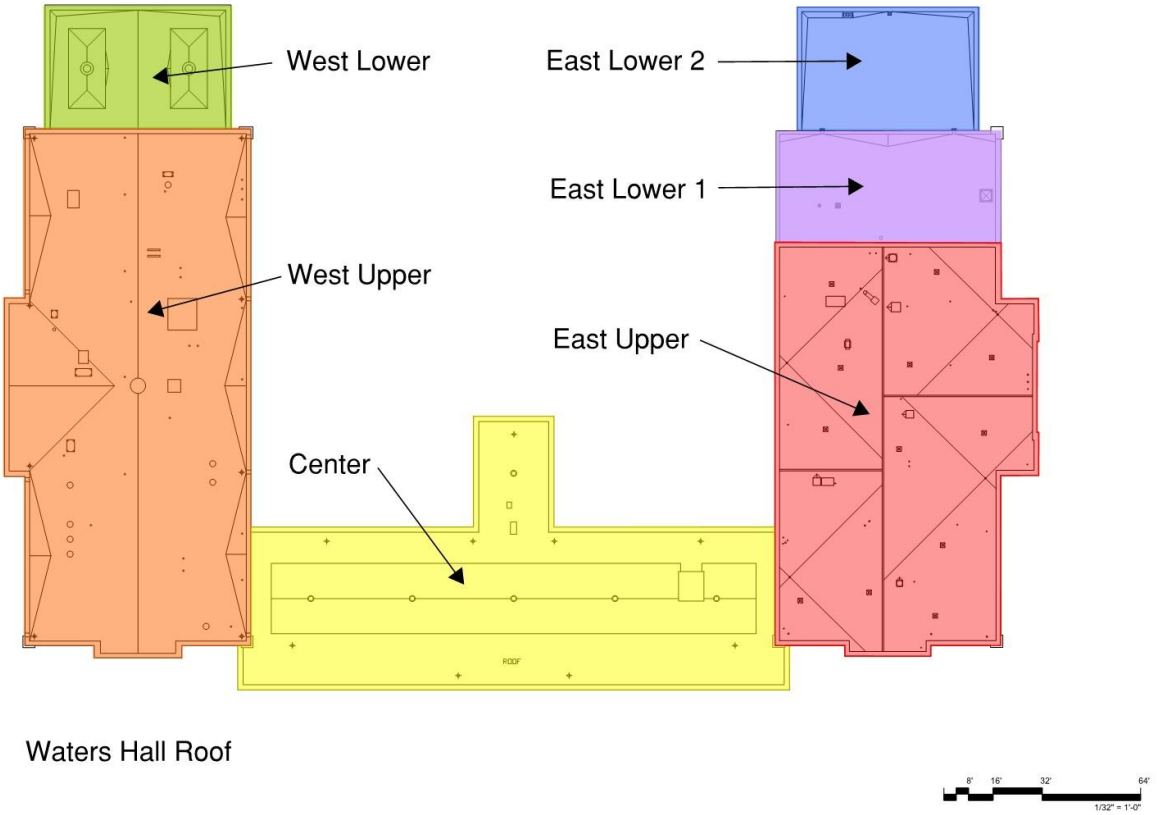
Main Annual costs of operations, maintenance and utilities are estimated as follows:

Description	Cost/sqft	Total
Maintenance and Utilities	$3.50 X 40,888 sf	$143,108.00
Total Annual Cost		**$143,108.00**

Timeline/Schedule

KBOR Program Approval	September 2026
Design Team Selection	3 months
Documentation and design	3 months
Bidding/Negotiation/Contracts	2 months
Construction	3 months

*Targeting summer of 2027 construction.



Diagrammatic Roof Plan

(If phased, the priority roofs would be the western and eastern roof levels done first)

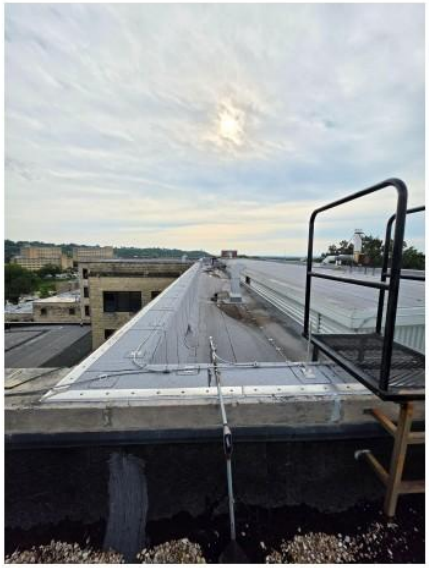
Appendix



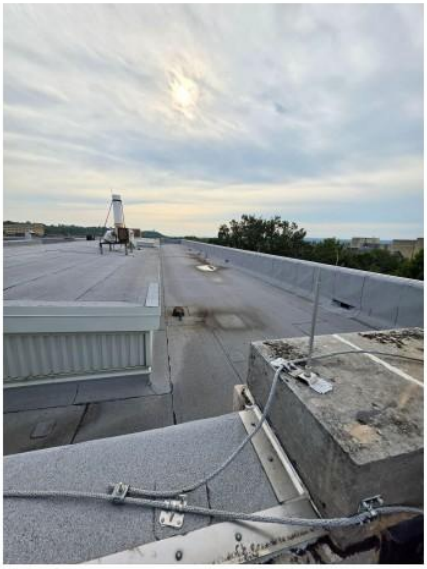
West Upper Looking South



West Upper Looking North



Center Roof Looking East



Center Roof Looking East



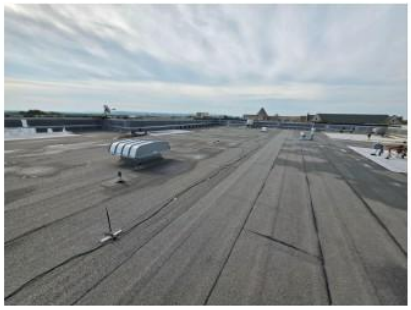
Center Roof East End



Center Roof East End



East Upper Looking East



East Upper Looking South



West Lower Roof



East Lower Roof 1



East Lower Roof 2