CAMPUS DEFERRED MAINTENANCE EXAMPLES
(Submitted by Institution)

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KANSAS STATE UNIVERSITY

Dangerous Switchgear:

K-State employees call it the "Frankenstein" room because its knife blade switches resemble the electrical switches in the good Doctor's monster-creating laboratory. The 4160 volt switchgear room in the 1920's power plant building provides electricity to the central core of the K-State campus. The equipment is a source of frustration for employees because of the procedures that must be taken when operating and maintaining the antiquated switches. Due to the danger of the high voltage electricity arcing from the switch to anyone touching the three-foot knife blade switches, employees must use a slender ten-foot long wooden pole to operate the switches. Since the 1960's, the 4160 volt system has given way to 12,500 volt systems that provide the electrical power for modern office, classroom, and laboratory buildings.

Stone Deterioration:

In the fall of 1999, a grapefruit size piece of stone fell off Nichols Hall and landed near the building and then rolled within a few feet of a student walking along the nearby sidewalk. Investigation of the building's stone exterior by engineers brought to light that weather and time had damaged the building's limestone facade. Since then, two other buildings have been found with similar problems. Now, Nichols, Leisure Hall, and Memorial Stadium entries are protected with heavy gauge steel screens allowing pedestrians safe access at entries. Meanwhile, these building's exterior limestone continues to deteriorate and fall from the buildings.

Heaving Hangar Apron:

The Salina hangar apron built in the early 1950's when it was an Air Force base, is moving and breaking-up from years of severe temperature changes. This past summer (2004), it was discovered that the apron has pushed the hangar's walls with enough force to shear the four-foot square by six-foot deep concrete bases. This caused two of the steel columns supporting the building to buckle and twist several inches, weakening the building structure. Emergency repairs were made by placing temporary column supports and excavating the bases of the two columns and replacing them. Work also included cutting an expansion joint between the concrete apron and the hangar. Costs spent to date are $137,000, and the apron continues to move and break-up.

Sagging Hangar Doors:

The Salina hangar doors, approximately 40 foot high and running half the length of the hangar have sprung over years of use and cannot be manually operated. To operate the hangar doors requires a team of employees using a surplus Air Force aircraft tug that is about the size of a forklift. One employee slowly pulls the door with the tug and two others watch the sprung rollers as the door screeches along the guide rail. The rollers and rail are inspected before and after each operation and if any damage is discovered, the steel is welded or otherwise temporarily repaired.

Leaking Steam Lines:

Boilers provide steam to the campus buildings through a network of steam lines. Once the steam has passed through the building it begins to cool down and condense into water. The steam and condensate water contain chemicals to keep the boilers efficient. The water is drained back to the boilers through a system of pipes referred to as the condensate return system. The majority of the old condensate return system is anywhere from 50 to 80 years old much of which has become rusted and broken due to age, ground movement, etc. Each year the power plant employees add make-up water to the boiler system to replace the condensate water that leaks from the deteriorated piping. The amount of make-water would fill an Olympic-size swimming pool. This is a waste of chemicals and water, and this also makes the steam very inefficient. To excavate and replace the twelve miles of condensate return lines within the heart of campus will require a substantial commitment of funds.

Deteriorated Windows:

In the winter, cold air blows through and in the summer, hot, humid air and dust blow through the old deteriorated windows in several buildings dating from the late 19th century and early 20th century. Extremely inefficient and inoperable, the windows are a constant frustration to faculty and students whose offices, laboratories and classrooms are in these old buildings. In most cases, these old buildings can only be air-conditioned with window units that vibrate the windows and create enough noise that students cannot hear their professor lecture.

Uneven Floors:

Recently, a new department head in Journalism toured the building at the request of her department. At the north wing of Kedzie Hall are offices and classrooms that have floors extremely out of level. Although structurally safe, the floors of this building and other old wood-framed buildings have settled to a degree that one side of a desk, bookshelf, or file must be shimmed anywhere from one to two inches so that they will not fall over. These building are reminiscent to walking on the deck of a ship that has permanently listed to one side.

Leaking Roofs:

Many of Kansas State University's roofs are in dire need of replacement. Leaking roofs at the Manhattan and Salina campuses are causing interior damage to the structures and room finishes, as well as property losses. Classes have had to be moved, so students would not be harmed by water or falling wet ceiling materials. Research in labs has been halted or ruined. Art displays, performing arts, cultural programs and speeches have been relocated or canceled because of the magnitude of roof leaks. Some college accreditation renewal will be in question because of roof conditions. The KSU campuses, excluding agricultural experiment stations, have 70 acres of roofs and 75% of these roofs need to be replaced. Manhattan campus buildings that need immediate roof replacement are: McCain Auditorium, Chester Peters Recreation Center, Chemical Storage building, and Seaton's saw-tooth roof area. Salina campus buildings are: Tech. West, Tech. Center, and the Facilities building.