

## **Executive Summary**

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In direct response to a number of observed problems within the Eberly Campus Community Center, a series of building renovations have been proposed. These problems include excess humidity and moisture, mold growth, underutilization of the building, and a lack of energy efficiency. The proposed renovation ideas have been divided into seven distinct sections to facilitate owner understanding and to supply a variety of different renovation options to the owner team without enforcing the use of all of the ideas. The proposed renovation work is detailed below.

Alternative 1 includes the most basic remediation efforts to fix the most prominent problems. Solved here will be the excess moisture, the possibility of retaining of mold after removal of the visible contaminant, and administrative solutions to the underutilization problem.

Alternative 2 provides a full mechanical system redesign that will increase energy efficiency and actively counteract the underutilization problem that affects the mechanical system.

Alternative 3 manages the building water use within the plumbing system.

Alternative 4, renewable energy sources, suggests some common site energy production methods that may be employed in Pennsylvania, the location of the project.

Alternative 5 addresses the possibility of a LEED EB certification and the requisite actions that must be followed to attain the certification.

Alternative 6 is the calculation of the carbon use of the facility, with a goal to achieve a building that is at least 50% carbon neutral through the previously suggested alternatives.

Finally, Alternative 7 contains the proposed acoustical and lighting analysis to provide a better interior environment as well as possible electricity savings.

Through the seven alternatives suggested above, it is possible for this previously unremarkable building to become a showcase for green and sustainable renovation. Not only will the building energy use be deflated, but the interior built environment will improve and the building will become more appealing to its occupants. These alternatives, once implemented, will create a sustainable and functional building for the entire course of the building life cycle.