Executive Summary

This proposal consists of research on how sustainability can save energy, as well as money and redesign ideas for 320 W. Beaver Ave can be a sustainable building, giving it a memorable image. Each analysis will consist of a problem statement, goal, research steps, expected outcomes, and a summary.

Analysis 1: Sustainable College Apartment Buildings

Making student apartment buildings green could be a major upgrade to their current view. The main issue to consider is of course cost. If employed properly throughout the design and construction of a building as well as the inhabiting the building, a green student apartment building could be a win-win situation. The goal is to take 320 W. Beaver Ave, and implement green design but not increase the cost of the building over 10 years. There are 2 main factors that play into these costs. The first is the actual design and implementation of sustainability into the building. The second will look into what the owner can do in order to rearrange these costs to allow green student apartment building to work.

Analysis 2: Green Roof

The implementation of an intensive green roof can provide a positive architectural image including usable space, which can increase the amount of interest in living in the building. A properly installed green roof could potentially increase the worth of the building and the rent.

> **Breadth 1, Structural:** A redesign of the structure of 320 W Beaver Ave. in order to support the new intensive green roof.

Analysis 3: Mechanical Redesign

The existing mechanical system is divided into singular systems for each apartment. A consolidation of these systems will allow for energy recovery creating a more efficient system. This permits for there to be one generation system of heat as opposed to several scattered around the building, which will reduce costs. A cost and construction analysis will be performed in order to understand what this type of system entails.

> **Breadth 2, Mechanical:** A redesign of the HVAC system of The Palmerton could reduce upfront costs, while greatly increasing efficiency.