

## 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: The Cost of Sustainability*

In depth research will be performed on projects that have successfully designed and built green buildings at minor additional cost, buildings that have short payback periods, and most importantly buildings that saved money by going green. This research will look particularly at design decisions that influence performance and cost, in an effective way for the project. The overall goal is to develop a system of classifying these green money savers, along with how and what they impact on the project.

### *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.

**Breadth 2, Architectural:** A green roof design that allows the users quiet relaxing spaces while providing privacy for the residents. A design of a railing system that enhances the view of the vegetation from the street, that is affordable. A redesign of the 2<sup>nd</sup> floor will also be necessary to allow access to the green roof.

### *Analysis 3: Radiant Floor System*

A comparison between the in place mechanical system and a hydronic radiant floor heating system allows for a simpler, more effective heating 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.