

While doing the mechanical system sustainability research, it is also necessary to research how these implementations will affect the other building systems and execution of such. These areas will be covered in the sustainable breadth topics with focus on two major topics: construction management and architecture. Below are the proposed areas and the description of how each will be achieved.

Architecture

In order to improve the energy and water efficiency, changes in architecture may need to take place. Solar shades, improved glass and insulation, efficient water landscaping and other architectural impacts may need to take place to save energy and reduce the water consumption.

This research will be concluded by choosing landscape that does not require a lot of water to sustain while not comprising the overall landscape aesthetics of the building. Shading of the building façade over the 53% glass makeup, or installing new glass, will help reduce the thermal loads of the spaces, therefore reducing the size and requirements of the present system.

Construction Management

The mechanical system has been design/build for all four phases of the construction process; it is possible to assume a retrofit will be constructed in the same way. Special research and adjustment will need to be taken into account for the cost, schedule and commissioning for any adjustment or addition to the mechanical system.

This will be accomplished by analyzing previous construction schedules and costs for similar systems and comparing it to the current system. A schedule can then be created for the retrofit timeline and crew sizes. Also, a compilation of costs and payback can also be determined by using previous data. This will provide raw data for the owner to use to decide if any of the recommendations should be implemented based on time and cost.

With the study of these two breadth topics, a more accurate alternative suggestion for the Hershey Building sustainable retrofit can be made.