

**EXECUTIVE SUMMARY:**

Based on the feedback received from Technical Assignment 3, this proposal was created to highlight the proposed areas of study for future research of the new Dickinson School of Law building located in University Park, PA. It has been concluded that the following specific areas will be examined for this project:

- **Proposed Building Analyses:**
  - BIM Research: This analysis will look at the problems facing certain trades with regards to BIM and 3-D modeling as it relates to building coordination.
  - Architectural Redesign of Key Building Elements: This analysis will examine the possibilities related to using both alternative materials and alternative building elements to reduce construction costs without sacrificing overall building quality.
  - Analysis of Glazing Alternative: This will involve proposing a new type of glass to be installed on the exterior glazing in the building which will consist of triple pane glass and may employ Building Integrated Photo Voltaics (BIPV) into the glass or shades to generate electricity from the sun.
  - Analysis of Utility Tunnel Construction: This final study will examine the feasibility and potential schedule savings of boring under Park Avenue to construct a utility tunnel under the road as opposed to the actual method of digging up the road.
  
- **Breadth Studies:**
  - Architectural Breadth Study: This breadth will involve using experience gained from prior architectural classes to propose alternative design elements to reduce building costs without hindering the overall building aesthetic. This goal will involve compiling a list of design changes, speaking with industry professionals to determine cost savings, and ultimately making a recommendation about each design alternative.
  - Mechanical Breadth Study: This study will look at how using the alternative glazing solution proposed in the analysis mentioned above could potentially save costs by sizing down some of the HVAC equipment used in the building. To perform this study a takeoff of the total area of glass in the building will be performed, the heat loss reduction will be calculated and the total heating/cooling required to be supplied by the HVAC equipment will (hopefully) be less such that some of the equipment may be sized down.