Breadth Studies

Breadth is covered in all of the analyses in some form, but some of the analyses require additional investigation to fully demonstrate breadth. In particular, two breadths will be further addressed in order to maintain focus; Sustainability and Mechanical System Design. The focus on sustainability will be addressed in each of the Analysis Descriptions and the mechanical system design will be addressed primarily in *Analysis Description II*.

Sustainability:

The first area of breadth will be the overall sustainability of the project, a sustainable architecture breadth. It will focus on schedule and budget impacts of implementing additional or alternative features, materials, and construction methods into Ingleside at King Farm in order to acquire some of the LEED credits that are not currently attainable. Some additional or alternative features include, but are not limited to, an improvement in material selection, a reduction in energy consumption, and a consideration of life cycles.

This breadth will suggest the appropriate phase of the project that such features should be considered in order to be successfully implemented. In addition, the breadth will offer suggestions on greening the project team to allow a smooth and sustainable design and construction process. Each of the *Analysis Descriptions* are already leaning toward developing a more sustainable Ingleside, which not only aligns with the goals of the owner, but allows for integration of the various Analysis Descriptions.

Mechanical System Design:

Evaluating the mechanical system design will also require a significant amount of additional work to demonstrate breadth. Part of the goal in this area is to be able to incorporate the site pond into the mechanical system as a water source for a geothermal heatpump system. Ingleside at King Farm is built on a large and fairly open site with plans of constructing a site pond to be used for rainwater retention and resident enjoyment. This presents a great opportunity to utilize the body of water for mechanical purposes and potentially eliminate other pieces of mechanical equipment such as the cooling towers. This won't be possible without careful study and understanding of how the current mechanical system works. The mechanical system design breadth will also require a fair amount of research into the feasibility of incorporating the pond into the mechanical system design.