**Further Considerations: Knoxville -- The Gay Street Bridge**

***The Eiffel Tower was the tallest building in the world at that time. What building would take its place as the tallest?***

*Completed in 1889, the Eiffel Tower was quite literally the “Height” of fashion in architecture. It was, at the time, the tallest building in the world. And it remained so until the Empire State Building was built in the 1930’s.*

***What impact did the introduction of steel have on design?***

*Steel Construction which was introduced in the 1850’s made both of these buildings possible. It allowed for greater spans and lighter construction than had ever been possible before.*

*These qualities made steel the ideal material for the construction of the oldest vehicle bridge in Knoxville. Utilizing the same style of spandrel-braced arches that Gustave Eiffel used in his tower allowed the Gay Street Bridge to make longer spans with fewer piers. And, allowed ships and barges to pass beneath, continuing to use the river for transit.*

***How do current events abroad impact local projects and daily life in Knoxville?***

When the Gay Street Bridge opened, a statement was issued by Knox County proclaiming the bridge was "for the use of all the world except Spain.”

It was July 9, 1898. What was going on in the world in 1898?   
The Spanish American War. Thus, Knoxville said that Spain was not allowed to use its new bridge. The Spanish-American War caused materials to be more expensive and less available. The designer of the bridge was forced to change the original design, and this also led to heated discussions and debates between the designer and Knox County officials.

While talking about the war going on during the time of construction, reflect upon how a current event in another location has a local impact. Because of the current event that was ongoing, the design process was layered with more complexities. This often happens to many different kinds of projects and may not be readily apparent.

***What similar professions to architecture use the same problem-solving tools?***

Both architects and engineers use critical thinking to solve design problems.

The Gay Street Bridge was designed by Charles E. Fowler, chief engineer of the [Youngstown Bridge Company](http://en.wikipedia.org/wiki/Youngstown_Bridge_Company) of [Ohio](http://en.wikipedia.org/wiki/Ohio). Fowler claimed that he had quickly sketched the design of the bridge during the train ride to Knoxville to meet with Knoxville officials. The bridge’s design had been chosen over three other bids.

**Further Considerations: The Knoxville Mass Transit Center**

***How is the environment protected in the way we design a building?***

The Transit Center was the first LEED certified facility for the City of Knoxville --- LEED stands for Leadership in Energy and Environmental Design. It is a rating system that verifies that a building has been designed to use less energy and was built using sustainable building practices, and with materials that are regionally sourced and manufactured locally.

***What is the economic value of a building or structure to a city?***

When you think of subways, train stations, and buses, you think of large cities. It is a vital part of the economy for workers, visitors, and shoppers. Cities are sometimes ranked by their mass transit systems. As Knoxville grows, so to its needs for transportation have grown. For Knoxville to compete with other larger cities, it would need to improve its mass transit system.

**In an article for The Atlantic, entitled, “Public Transit Is Worth Way More to a City Than You Might Think:”**

“The hidden economic value of transit could be worth anywhere from $1.5 million to $1.8 *billion* a year, depending on the size of the city. And the bigger the city, the bigger the benefit of expanding transit. City officials now have a much stronger argument for using taxpayer money to improve their public transportation service.”

***How could the decision to build a new transit center improve Knoxville’s rankings compared with other cities?***

Citing a Brookings Institution study, before the new mass transit center was constructed, Knoxville ranked No. 95 of 100 metropolitan areas in terms of access to public transit. Only 28 percent of working-age residents were near a transit stop. Studies of population and locations of employment were key considerations in the selection of a site for the new transit center that would improve Knoxville’s ranking and improve lifestyle and access to travel to jobs and to areas of commerce.

Further explanation about the transit center was given in a *Metropulse* article on May 25, 2011: "This facility will help connect downtown to the east across James White Parkway," said Bill Lyons, Sr. Director of Policy and Communications. ‘It creates useable space rather than taking land from other productive use.’ The new Knoxville Station Transit Center has a $29 million price tag, which includes land acquisition, planning and design costs, and is being paid for with a mix of city, state and federal dollars. The city's share is 10% or 2.9 million dollars.” Because of the benefit to the public and the use of taxpayer dollars, the design of the building was carefully considered in many meetings that were open to the public.

**Further Considerations: The Tennessee Theater**

*Why do we choose to preserve?*

*What an urban fabric of a city can do if it is cohesive or destroyed?*

*Why is it important to retain old buildings and styles to create a cohesive downtown?*

*What happens when we lose places like this?*

**For further information, refer to the article, “Smart Growth and Sustainable Preservation of Existing and Historic Buildings,” published by the Environmental Protection Agency, which states:**

“The preservation and renovation of historic properties is an important part of a sustainable, smart growth approach. An historic building or district can be a tangible symbol of a community's interest in honoring its heritage, valuing its character and sense of place, getting the most out of prior investments in infrastructure and development, and encouraging growth in already-developed areas. Rehabilitating historic properties can also be a critical part of promoting energy efficiency by preserving the energy already represented by existing buildings (known as "embodied energy"), rather than expending additional energy for new construction. It is estimated that a new, green, energy-efficient office building that includes as much as 40 percent recycled materials would nevertheless take approximately 65 years to recover the energy lost in demolishing a comparable existing building. Furthermore, repurposing old buildings—particularly those that are vacant—reduces the need for construction of new buildings and the consumption of land, energy, materials, and financial resources that they require…. The value in overcoming these obstacles is clear—not only for the energy benefits they offer, but also for broader economic, cultural, and land use preservation advantages.”

**Further Discussion**

**What additional insights or ideas do you have about the four Knoxville buildings in this presentation?**

**What other buildings would you like to know more about?**

**What is your favorite building or place in Knoxville? Why?**