

EXISTING LIBRARY OBSERVATIONS
Considerations in remodeling the existing Library Facility.

Date: 07/17/17

Project: **Logan City Existing Library Building**

Report: Evaluation - Empirical Data

Items of Consideration

Total Square Footage: 41,200 S. F.

Age of Building: 1930 forward.

Structural Considerations:

Concrete post and beam construction spans the basement space. The basement is not usable public library space due to limited headroom. Concrete post and beam construction limits the ability to modify openings in the floor slab system and hence impacts mechanical modifications required for an extensive remodel. This could impact what remodel goals are reachable within the constraints of the mechanical system.

This is typical of most remodels where existing system constraints have a directional impact on the final solution. New structures do not suffer from these system constraints. The systems are designed around the program and not vice versa.

Framing in the older section of the library is wood trusses and unreinforced masonry. It is doubtful, based on observation and age of construction, that the building would meet existing structural safety requirements. Based on current codes the braced frames may need to be retrofitted to meet higher seismic diaphragm forces that were not requirements when the building was upgraded in 1984. Existing structural connections appear to be the most problematic portion of the building.

Roof diaphragm to shear wall connections, connections of roof to masonry walls and braced frame connections, drag struts and collectors would all need to be evaluated before a final rehabilitation scope could be defined for the building.

The second floor of the existing library is approximately 5,100 s.f. It is not likely that this floor was designed for the loads associated with book stacks. If any collections are located on the upper floor this floor will need to be reinforced.

Remodel Contingency:

Due to age of construction and multiple remodels/additions the potential for unknown conditions and change orders is high during construction, adding to the project costs. This is not unusual with remodel construction. It is suggested that a 20% contingency be added to the final construction budget for any remodel to cover the unknown conditions that are introduced during construction.

More Open Feel:

The building is constructed of large full span trusses that have a low bottom chord member. It is the low height of these trusses that create the low, uncomfortable feel of the main stack space. These trusses are presently wrapped in gyp board and painted. The space could possibly be more open if these trusses were exposed, offering a more expansive sense of place. Some of these older trusses were not designed for exposure. This would be one of the issues that would need to be evaluated prior to any remodel design. Regardless, the bottom chord of the truss will limit the openness of the space.

Mold and Asbestos:

Mold appears to be present in the facility and, due to the buildings age, it is likely there are asbestos problems as well. Both can substantially increase the cost of any remodel. These again, are unknown conditions that are exposed during construction or require extensive testing of the facility prior to design work.

Increased Windows:

Rooms on north side have limited windows. New window openings will need to be added if structurally feasible through unreinforced masonry. Additional window openings will impact the cost of the structural rehabilitation since openings will reduce shear capacity of the existing walls.

Long Term Building Costs:

A long-term cost associated with remodels of older buildings includes long term maintenance costs. Cost of a building is typically 10% for construction and 90% for operational costs over the life of the building. Even with extensive remodel it is likely that the existing building will continue to have a higher operational cost than a new building over the same period of use.

Shutting down the library during the extensive 12-month remodel is an obvious operational concern. Staging the work for continued operation will increase the overall cost and schedule of the construction.

Mechanical Systems:

Due to the goal of a complete and extensive remodel, the majority of the existing mechanical systems would need to be replaced. While salvaging some of the existing systems may be possible it may not prove to be cost effective. Some of the existing chillers and condensers may accommodate the remodel with modification and/or relocation however, new ducting, boilers, controls, new domestic water and a code compliant make-up air heating system will be required for the remodel.

Plumbing systems:

Plumbing systems will need to be evaluated for life cycle. In remodels of older buildings it is provident to replace plumbing systems at life cycle to avoid leak and maintenance problems once the systems are enclosed with new construction.

Power systems:

The existing electrical and alarm system will require major replacement and/or upgrade due to age and reconfiguration. A new main electrical panel will be required to replace the existing water damaged panel. The overall system capacity will likely require an upgrade to comply with current power company requirements.

The existing generator will require replacement since the existing generator is 30 years old and at the end of its life cycle. Exterior, interior lighting and controls will be replaced. The fire alarm system will be completely upgraded, with the exception of the main panel, for compliance to present addressable, notification and detection requirements. Communication and security systems would also require replacement for an extensive remodel.

General Recommendations:

Three factors generally trigger a decision to take a serious look at an aging facility: health and safety deficiencies, outdated or poorly operating building systems, and program changes. All three factors are considered high for the existing Logan Library.

The cost associated with the extensive remodel of an existing older facility can often reach a similar level to new construction. These high levels of remodel costs, versus the cost of a new facility, are typically justified only for historically significant buildings. The existing building is not historically significant and has limited appeal as a community space.

Design West shares a rule of thumb with our clients, if renovation costs are 60 to 65 percent of the existing building's value, we recommend building a new facility for the long-term value. But, again, the ultimate decision still resides with the community. Given the age of existing systems, the extent of a remodel required to develop desired civic appeal and function, and high expectations of unknown conditions this evaluation does not suggest the expenditure of monies to remodel the existing library as a responsible use of civic funds.

Cost of construction comparison:

Based on recent experience with Malad High School the cost of an extensive remodel could be as much as 175.00/s.f. on the low end with a possible high cost of 200.00/s.f. depending on unknown conditions/scope.

175.00 x 41,000 = \$7,175,000 remodel vs. \$9,500,00 new (12 million budget less soft costs)
200.00 x 41,000 = \$8,200,000 remodel vs. \$9,500,00 new (12 million budget less soft costs)

After a substantial investment, you still have a building which is:

Less environmentally efficient.

Less safe and healthy.

Less sustainable and maintainable.

Less appealing.

Lessened life cycle.

Less responsive to 21st century library design since it is forced into existing system and space constraints.

End of report.