

May 09, 2017

Dr. Rich Moore  
District Superintendent  
Oneida School District  
Malad City, Idaho 83252

**Re: Malad Elementary School Rehabilitation Evaluation**

Rich,

My team has looked at the exiting Malad Elementary school structure with the specific aim of finding a way to remodel the school for adequate and safe educational use for an extended period of time.

The school's design is simple and very beautiful. It appears to be in excellent condition structurally (based on 1952 standards only). Initially, our goal was to find a way to preserve this iconic Malad structure to the continued enjoyment and benefit of the community. It was and is a marvelous school building which we would have great satisfaction in rehabilitating for continued use. Should the district want to do so we would be excited to participate in that effort. We would suggest the district evaluate the respective costs of rehabilitation and new construction and make a decision based on need as well as emotional attachment to the historical school.

As our team of architects and engineers looked at the cost to rehabilitate the facility it has become obvious that the cost of remodeling the existing 65-year-old school would be close to the cost of construction of a brand-new school. The cost difference between building a completely new school and doing a comprehensive remodel of the existing school systems would be in the 30.00/square foot range. Possibly less when you factor in the issue of unknown conditions like asbestos and costly surprises that are part of every remodel project.

The building was built in 1952 based on the existing drawings dated 1951. The overall estimated building area of the school is approximately 78,000 square feet. The elementary school without the auditorium is approximately 44,000 square feet. The building consists of classrooms in the main area of the building with an auditorium at the west end and an activity room stacked over a cafeteria space on the east end of the main core.

While the school has a relatively new boiler the piping for the hydronic delivery system is largely original construction as is the domestic piping throughout the building. There is limited air-conditioning for the facility and if desired a comprehensive new air-conditioning system would need to be incorporated into the design of the remodel. The electrical system also appears to largely original construction. In order to upgrade the school to present day codes and life safety requirements the facility will need to be remodeled with completely new mechanical delivery system, plumbing, electrical systems and an extensive structural upgrade.

Again, this cost is similar to new systems provided in a new school with the added cost of working in an existing structure (with associated cutting, patching and repair requirements). Based on the age of the facility it is likely that all work would potentially require asbestos mitigation. We typically see asbestos in the piping insulation, floor tiles and window sealant in buildings of this age. This required mitigation adds cost and time to the construction process. Along with the potential asbestos problem there will always be hidden elements that no one can predict, such as deteriorating structural elements, mold and post construction modifications.

It is assumed that all of the interior finishes would need to be upgraded based on the age of the facility again, there is little if any cost difference between this work and the same work for a new facility. All of the windows and doors would need to be replaced with new, insulated systems. The restrooms would need to be completely upgraded and modified to accommodate present day accessibility requirements. This accessibility requirement is clearance dictated and would probably require increasing the size of the existing restrooms. An expansion of the restroom size would compromise the already small size of the adjacent classrooms. If the adequate number of fixtures could not be accommodated in the existing structures footprint we would need to add additional restrooms to the existing facility.

Since the school is a two-story structure and the remodel on the school would represent a major modification to the existing facility, it is likely the requirement for an elevator would be required by the accessibility legislation for disabled students.

The roof system has several persistent leaks and it is likely that the roofing would need to be replaced depending on the age of the material and the number of existing leak problems. The damage done by these persistent leaks, to substructure inside the facility, is unknown at this time and would only be exposed in construction.

The perimeter walls are unreinforced masonry with large expanses of opening for windows which increases the overall lateral weakness of the facility. The floor and roof framing is supported by the exterior and interior walls by methods that allow for the support and transfer of gravity (vertical) loads but not lateral (seismic) forces. Simple sheathed floors and roofs similar to those present in the building do not typically have adequate strength to transfer forces through the structure to the exterior walls.

Due to the configuration of the walls and lack of reinforcement, the walls may not perform as needed to transfer lateral forces of the building to the ground. The lack of a strong positive tie of the roof and floor framing to the masonry walls may allow the walls to pull away from the floor and wall framing in a seismic event.

Experience indicates that structures such as Malad Elementary School can be seismically retrofitted and rehabilitated to resist some levels of seismic forces. While not inexpensive, methods are available to upgrade walls, floor, roofs, etc., as well as connecting the structural elements together.

Levels of seismic upgrade vary. The minimum level that should be considered is "Life Safety". This level of building performance is aimed at providing a structure that in general allows occupants to exit the building without major injury or "loss of life". The structure itself may not be usable or repairable after the event. An enhanced level of building performance is "immediate Occupancy". This level of performance is intended to allow a building to be used soon after a major catastrophic event with minor non-structural repairs. For an existing building such as Malad Elementary the cost difference between these two performance levels could be significant. We are confident that a "Life Safety" level of rehabilitation can be completed at cost. An "immediate Occupancy" level of upgrade may not be feasible due to costs and potential building functionality issues. It should be noted that any upgrade or remodel would include maintaining in place many structural elements that would not be deemed to meet current building code requirements for new construction.

Due to the nature of any significant structural upgrades, it is highly unlikely that the building can remain in use during upgrade construction work. Based on past experience with similar structures we estimate that the "Life Safety" level seismic rehabilitation costs may be in the range of \$35 - \$55 per floor area square foot. These estimates are based solely on experience and not on specific analysis and design for this facility.

Based on the limited evaluation and observation completed the Malad Elementary School it is our opinion that the structure lacks the necessary strength and construction detailing to resist significant seismic (earthquake) forces. It is likely with proper evaluation, analysis, and design, the building can be rehabilitated to resist limited specified levels of seismic force beyond it's present capacity.

It is the team's opinion that by the time new mechanical, plumbing and electrical systems are incorporated into the facility, new interior finishes are added, the site is upgraded and the structural system is brought up to code for minimum life safety requirements the cost of the remodel could be as high as 180.00/square foot. (\$180.00/sf is based on present bidding cost obtained for similar remodel in the region). This cost if focused only on the elementary portion of the school (leaving the auditorium largely as is) would result in a project order of magnitude cost of eight million dollars (\$8,000,000.00).

A new school of similar size, for comparison sake, would cost in the ten-million-dollar order of magnitude range (\$10,000,000.00. Cost based on new school construction averages for the region). Outside of preserving historically significant buildings it is the consensus in the industry that, for the reason outlined above, the remodeling and rehabilitation of a school of this age for long-term use is not a good capital investment for a school district. With a remodeled facility, you typically do not receive the full operational, thermal, safety, health and maintenance savings that result over the life time of a new facility.

There is also the problem of maintaining school function while a comprehensive remodel is underway. This type of a comprehensive upgrade would close the school for an extended period of time and could not be completed during a summer shut down. This would add to the costs incurred by the district to accommodate school at another location during the construction.

Less comprehensive remodels can be accomplished at a lower cost (new finishes, windows and doors) but these too are shown historically to cost the district in both the short term and the long term since the major facility maintenance costs are not mitigated in any measurable way under this model. This is however one option should you choose to pursue it.

Finally, we have looked preliminarily at the option of demolishing the existing school wing while retaining the Auditorium space. Based on our view of the original drawings the Auditorium could likely be maintained for use with the understanding that it does not conform to present seismic code requirements. If the district decided to keep the Auditorium we would suggest it be upgraded structurally to at least a minimum "Life Safety" level.

Hopefully this information will be helpful in your consideration of options for your district facility needs. I would be happy to answer any questions you may have or attend a meeting to discuss in further detail.

Sincerely,  
design west | architects

A handwritten signature in black ink, appearing to read 'Kent Craven'.

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