Existing School Building Background

Constructed in 1954 and remodeled and expanded numerous times over the past 40 years, the Town of Hulett is looking into salvaging 18,000 square feet of school scheduled for demolition by the Wyoming School Facilities Commission.

The existing building is a single story structure. Exterior masonry walls are supported on cast-in-place concrete foundation walls with continuous spread footings. Foundations for the building are exposed at grade along the exterior walls and in the utility tunnel. Floors are typically concrete slab-on-grade except over the utility tunnel where the concrete slab is supported on corrugated steel form deck. Except for the gymnasium, the typical roof framing appears to consist of open web steel joists supported on masonry bearing walls. In the gymnasium, wood roof decking is supported on glue laminated wood frames spanning north south across the width of the gym. The roof is a single ply membrane over tapered insulation with interior roof drains; overflow scuppers and gutter and downspouts.

Existing Conditions

Overall, the building appears to be in fair to good structural condition. Malone Belton Abel’s inspection did not identify any areas of settlement or foundation problems, nor was there evidence of damage or significant deterioration or distress of structural members.

Exposed portions of concrete slab-on-grade appear in fair condition. The slabs contain isolated shrinkage cracking but do not show evidence of any substantial differential settlement. Exterior masonry is, for the most part, free of cracks or noticicable displacement. There are isolated areas of cracked masonry and of deteriorated mortar joints. These areas appear to be caused either by weathering or by exposure to excessive moisture, such as near roof drain.
downspouts or on parapets. Re-pointing mortar joints and isolated repairs should correct these deficiencies. Exposed masonry on the interior appears in good structural condition.

Roof framing which is exposed to view appears to be in good condition. No evidence was seen of corroded, damaged or overloaded decking or framing members. Portions of the steel form deck on the tunnel ceiling do exhibit light to moderate rust in areas. This is likely due to ambient moisture in the unventilated tunnel. The wood framing in the gymnasium appears in good condition. MBA did not observe any cracking or splitting in the wood decking or glue laminated frames, nor was there evidence of any rot or other moisture related problems.

The roof membrane is nearing its life expectancy and will need to be replaced within 5 years. At that time, it is recommended that the roof detailing at parapets, roof edges and roof drains be addressed as it is in poor condition and signs of water/ice problems are becoming noticeable on the building’s sofit and fascia. If funds were available, a standing seam metal roof on the gymnasium would compliment the gym roofline and provide 25+ years of maintenance free protection.

The building’s existing windows appear to be original and consist of painted wood frames with single pane float glass. Although the windows could be scraped clean, repainted and remain as part of the project, it is recommended that they be removed and a commercial aluminum framing system with insulated glass be installed to reduce future maintenance and add to the building’s thermal efficiency.

**North Gymnasium Wall**

The north wall of the gymnasium is concrete block set between the glue-laminated frame columns. It appears that at one time this was an exterior wall, and as such, was probably constructed to resist lateral wind loads. MBA recommends that this condition be verified by means of X-ray, as this is economically viable and locally available. The existing foundation
aligns with the north face of the concrete block, and future brick veneer will need to be supported by a continuous ledger angle bolted to the foundation or a brick ledge cast against the existing wall. The size of the existing footing should be checked to ensure adequate width to support the additional load of the veneer. If at all possible, brick should be salvaged from the planned demolition of the Junior High and then re-used as the exposed exterior veneer of the north gym wall as it would be difficult to match the building’s existing veneer.

**West Library Wall**

From MBA’s inspection, it is uncertain whether a foundation wall exists under the west wall of the library. Since this wall will become an exterior wall, a spread foundation extending to or below frost depth will be required. To enclose the building, the new wall will consist of a 6” studs with a masonry veneer. Again, it is recommended that brick be salvaged from the demolished portion of the building and re-used.

**ADA Conditions**

A quick visual study of the School’s ADA compliance reveals a building that is mostly accessible. The Boys and Girls Restrooms across from the Library will need to be remodeled for adult ADA compliance as well as some of the electrical switches and fire pull stations throughout the 18,000 square foot project will need to be lowered to meet maximum above floor height requirements. No exterior non-ADA compliance issues were noticed.

**Architectural Remodeling Options**

The Town of Hulett Building Committee had a number of ideas for building usage and we are presenting several alternative combinations that incorporate these ideas. The following is a description of each of the options. Schematic floor plans and cost estimates of possible future remodels follow this narrative.

**Option A:**

This option expands the existing Public Library by 970 SF and includes a daycare for approximately 20-40 children. Because of the library expansion the main entrance is moved to the southwest side of the building. The daycare is equipped with its own kitchen for health code issues and bathrooms that are sized for young children’s use. The existing school lockers would remain and be ideal for the children’s coats and clothing. The gymnasium remains, providing a place for the community to have sports, banquets, theatrical performances and large gatherings of all types. The gymnasium also offers a place for the daycare to have a large play/exercise area. The kitchen located next to the gymnasium provides an area for concessions during sporting events and a place for food preparation for banquets and wedding receptions. The existing exterior access to this room would make catering and other large deliveries easier. Locker/Rest rooms to the east of the gymnasium were added where
the existing weight room was located. The large exit corridor to the south of the
gymnasium could be utilized as a vending/waiting area.

Option B:
This option expands the existing Public Library by 970 SF and includes a Community
Health Clinic. Because of the library expansion the main entrance is moved to the
southwest side of the building. The health clinic has three large exam rooms and its
own separate reception and waiting area. New double doors have been added in the
main corridor to provide health clinic security. The existing school lockers would
remain and could be used by health clinic and public library employees. The
gymnasium remains, providing a place for the community to have sports, banquets,
theatrical performances and large gatherings of all types. The existing weight room
becomes storage for tables, chairs and theatrical equipment. The kitchen located near
the gymnasium provides an area for concessions during sporting events and a place
for food preparation for banquets and wedding receptions. Restrooms to the south of
the gymnasium were added for easy access during gymnasium events. (The health
clinic security doors block access to the existing public restrooms at the south of the
building.) The exit to the south of the gym is moved further south to allow room for
the Men’s Restroom. The information desk could be utilized by the Public Library or
for a Community Center employee to schedule events and maintain the building.

Option C:
This option has a minimal amount of remodeling. The gymnasium remains, providing
a place for the community to have sports, banquets, theatrical performances and large
gatherings of all types. The existing weight room becomes storage for tables, chairs
and theatrical equipment. Restrooms to the south of the gymnasium were added for
easy access during gymnasium events. The exit to the south of the gym is moved
further south to allow room for the Men’s Restroom. The existing foreign
language/home economics room would remain intact and become the community
kitchen for banquets and receptions and with the layout could even become a place
for adult cooking classes. The existing instructor’s workroom could become and
community arts and crafts room where classes or clubs could meet to do painting,
pottery, papermaking, scrap-booking, etc. The existing administration offices would
be remodeled into a large game room for pool tables and ping-pong tables and arcade
games. The existing social studies classroom would become community meeting
rooms that could be made into one large room with a movable partition wall. The
Public Library remains the same size, but the computers could be relocated to a
separate room and provide more space for the library. The existing multi-purpose
room south of the gymnasium would become the community computer lab.

Option D:
This option expands the existing Public Library by 1362 SF and keeps the main
entrance to the building on the southeast side. The existing reception desk would
become the check-out desk for the library and the existing school lockers could be
removed and display shelves installed for periodicals and current books. New double
doors have been added in the main north-south corridor to provide library security.
The gymnasium remains, providing a place for the community to hold sporting events, banquets, theatrical performances and large gatherings. Locker/Rest rooms to the east of the gymnasium were added where the existing weight room was located. The kitchen located near the gymnasium provides an area for concessions during sporting events and a place for food preparation for banquets and wedding receptions. The large exit corridor to the south of the gymnasium could be utilized as a vending/waiting area. The existing social studies classroom would become community meeting rooms that could be made into one large room with a movable partition wall. The existing administration offices would be remodeled into a large multi-purpose room for various activities.

Option E:
This option provides a space for adult education classes with the Eastern Wyoming College Outreach Program. The existing multi-purpose room south of the gymnasium would become a classroom and the administration offices would be remodeled into a large classroom. The existing instructor's workroom would become offices for the EWC Outreach Program and the foreign language/home economics room becomes a large computer lab. The gymnasium remains, providing a place for the community to have sporting events, banquets, theatrical performances and large gatherings. The kitchen located next to the gymnasium provides an area for concessions during sporting events and a place for food preparation for banquets and wedding receptions. The existing exterior access to this room would make catering and other large deliveries easier. Locker/Rest rooms to the east of the gymnasium were added where the existing weight room was located. The large exit corridor to the south of the gymnasium could be utilized as a vending/waiting area. The Public Library remains the same size, but some of the computers could be relocated to the EWC Outreach Computer classroom and provide more space for the library. The existing social studies classroom would become community meeting rooms that could be made into one large room with a movable partition wall.

With each option we propose adding entrance canopy structures that define the entries into the “new building”.
HVAC Existing System

Library and Classrooms:

The library and classrooms consist of unit ventilators and finned tube radiation. The system was converted from steam heat to hydronic heat around 1992. The heating piping is installed above the ceiling and exposed in some areas. Existing outdoor-air louvers on the unit ventilators are operable and can be adjusted to meet modern indoor air quality requirements. The existing control system is pneumatic serving individual thermostats. The control manufacturer is Johnson Controls.

Gym and Stage Areas:

The heating system serving the gym and stage areas are with heating coils within the suspended air handling units (AHU’s) and perimeter finned tube radiation. These were also converted from steam heat to hydronic heat around 1992. The heating piping is run mostly exposed on the ceiling in these areas. There do exist outdoor-air louvers serving the AHU’s, which can be used to accommodate modern indoor air quality requirements. The existing control system is pneumatic serving individual thermostats. The control manufacturer is Johnson Controls.

Ventilation:

It appears that there exists exhaust serving the abandoned locker areas. It is undetermined at this time the condition and operation of the exhaust system and shall be assumed to require replacement/abandonment based on the typical useful life of a power roof ventilator.

Boiler Plant:

The existing boilers and pumps shall be removed as part of the K-12 school remodel and addition project.

Domestic Water:

The existing domestic water service shall remain. A hot water heater within the existing Mechanical space shall remain in service. It does not appear that hot water recirculation to the plumbing fixtures is currently installed.

Fire Protection:

The existing fire sprinkler service entrance appears to be separate from the domestic water service. A Siamese connection (fire department
connection) exists on the east exterior wall. The existing service shall require code compliant upgrades (post indicator valve, etc.). The sprinkler system currently serves only the Stage area.

**Existing Electrical System**

The utility-owned outdoor service transformer and the indoor main electrical switchboard serving the entire existing school complex are both located at the northeast corner of the original school building. Since the outdoor transformer is located just south of the north demolition line, this location can probably remain unchanged. The electric utility, Powder River Energy Corporation, may choose to change out the transformer to a smaller unit more suitable for the reduced load. The existing service voltage is 120/208 volt, 3-phase, and will not change.

However, the indoor switchboard is located on the north side of the north demolition boundary. Therefore, a new location for the service equipment for the original building must be established. **NOTE:** If the small room containing the main switchboard could remain, the costs for electrical service and distribution modifications would be reduced significantly.

The majority of the electrical loads in the original building are served from a 600 amp, 3-phase distribution panel ‘DPB’ located in the original building boiler room. Panel ‘DPB’ has sufficient capacity to serve the original 18,000 square foot building. We therefore recommend that a new 600 amp fusible service disconnect switch be installed, either inside or outside, near the utility transformer location. This new switch would supply Panel ‘DPB’. With only minor electrical distribution system modifications, the entire original building could be served from ‘DPB’.

Some components of the distribution system (i.e. branch circuit panel boards, feeder and branch circuit wiring) appear to be original equipment, and as such would typically be near the end of their useful life. However, based upon visual inspection, this equipment appears to be well maintained and in fairly good condition. We believe that beyond the modifications described above, no additional work is required for this equipment to remain in service.

Some additional electrical power work will be required to support the recommended upgrades for heating, temperature control and domestic water recirculation.

Some convenience receptacles appeared to be worn with age and use, and there are a few cracked cover plates. We recommend that new grounding receptacles and new cover plates be installed throughout the original building for reasons of safety.
**Lighting Systems:**

Existing lighting consists mostly of fluorescent fixtures with magnetic ballasts and T12 lamps. Some of the smaller utility rooms have incandescent lights. The gymnasium is served with a combination of incandescent and HID type fixtures.

In general, the lighting equipment appears to be in good enough condition for continued service. It was noticed that few missing or burned out lamps and cracked lenses. It’s recommended that any damaged fixtures be repaired or replaced, and all fixtures are cleaned and re-lamped. We observed that some light switches appear to be worn with age and use. Therefore it also recommended that all light switches and cover plates be replaced with new, again for reasons of safety.

We have assumed that the theater performance lighting located in the gym and above the stage, including all associated lighting control equipment, will be retained by the School District and installed in the stage area planned for the new school. If this is the case, the stage area in the original building will have no performance lighting. We have further assumed that this is not an issue, and have not included any costs in our estimate for replacement of this equipment.

Finally, we recommend that additional building mounted exterior lighting be installed, especially on the new exterior walls created by demolition, for safety and security purposes. New exterior light fixtures will require some additional branch circuit wiring.

**Fire Alarm System:**

The central control panel for the Fire Alarm System serving the entire existing school complex is located in the Administration office area, within the original building. Other areas of the existing school will either be demolished, or will be served from a new fire alarm system to be installed as part of the K-12 school remodel and addition. As such, the existing FA control panel can remain in place, and be modified as required to serve only the original building.

The existing FA system is a conventional zoned system as manufactured by Edwards System Technologies. The system is approximately 20 years old, but appears to be in serviceable condition and suitable for continued use. The system will require the following modifications to serve the original building:

- Existing zones and devices serving other parts of the school must be disconnected from the existing FA control panel.
- Additional audible and visual notification appliances (i.e. horns, strobes) must be installed to bring the original building into compliance with ADA requirements.
- New connections will be required to interface and monitor the new fire protection sprinkler lines to be installed.
- All existing initiation and indication devices to remain, and the modified FA control panel, should be completely tested and certified to be functional and trouble-free.

**Clock/Intercom System:**

The central console for the Clock/Intercom System serving the entire existing school complex is located in the Administration office area, within the original building. This system, along with the existing speakers and clocks within the original building, can simply remain in place and be used as they are now. Existing devices within other parts of the school would be disconnected. No additional work would be required.

**Telephone/Voice/Data System:**

The telephone service entrance and central voice and data equipment serving the entire existing school complex are located in the Administration office area, within the original building. The existing phone service entrance can remain physically unchanged. The existing telephone service has T1 bandwidth capabilities, and as such would be costly to maintain. The City should consider reducing the phone service capacity as appropriate for the original building only.

We have assumed that the School will retain all of their active phone and data equipment. If this is the case, the City will be required to procure replacement equipment to serve their needs.

Existing voice and data outlets and wiring within the original building can remain and be reused by simply re-terminating the signal lines to the replacement front-end equipment.

**Cable TV:**

The Cable TV service entrance for the existing school complex is located in the Administration office area, within the original building. Again, little work other than disconnecting Cable TV lines serving other areas of the school is required.
**Estimated Construction Costs**

**Entire Building (stand alone facility):**

- Site concrete and landscaping: $35,000
- Repoint/repair existing masonry: $6,500
- West Library Wall: $15,240
- North Gym Wall: $22,950
- Roofing: $162,000
- Alum. glass & glazing: $40,000
- Existing bathrooms: $10,000
- Misc. interior: $9,500
- Misc. exterior: $8,500

**Mechanical**

- LP Boilers: $28,275
- LP Storage and Vaporizer/Bulkhead: $16,250
- Pumps: $7,575
- Exhaust Ventilation (includes crawlspace): $5,750
- DDC Controls: $16,500
- Hot Water Recirculation: $975
- Code Compliant Plumbing Fixtures: $10,000
- Fire Protection: $27,000

**Electrical**

- Service and Distribution Modifications: $40,600**
- Branch Circuit Wiring Modifications & Additions: $8,600
- Interior Lighting Upgrades: $9,200***
- Exterior Lighting Upgrades: $2,400***
- New Switches and Receptacles: $2,600***
- Fire Alarm System Modifications: $4,800
- Intercom/Paging/Master Clock System Modifications: $500***
- Voice/Data Cabling and Outlet System Modifications: $1,000****
- Cable TV Modifications: $500***
- Miscellaneous Demolition & Re-construction: $1,500

**Total costs to become stand alone facility:** $493,715*

* Cost estimate does not include design fees, nor recommended project contingencies
** This cost assumes that the existing main switchboard will be removed, and a new service will be developed to serve only the original building. If the existing main switchboard could remain, this cost could be reduced by approximately $25,000.
*** Recommendations only – not required by Code.
**** Does not include replacement active telephone or data front end equipment, such as a telephone system or data servers and routers.
Option “A” Additional Costs:
New Locker room/ restrooms $ 65,000
Kitchen/ concessions $ 10,000
Vending $ 5,000
Library remodel $ 51,000
Daycare areas $ 53,100
Misc. interior $ 7,500
New entries $ 40,000

Total additional costs for Option “A” $231,600

Option “B” Additional Costs:
New restrooms $ 35,000
Kitchen/ concessions $ 10,000
Health Clinic $ 41,500
Info desk $ 2,800
Misc. interior $ 12,500
New entries $ 40,000

Total additional costs for Option “B” $141,800

Option “C” Additional Costs:
New restrooms $ 35,000
Community rooms $ 48,000
Misc. interior $ 5,500
Reception $ 2,800
New entries $ 60,000

Total additional costs for Option “C” $151,300

Option “D” Additional Costs:
New Locker room/ restrooms $ 65,000
Vending $ 5,000
Kitchen/ concessions $ 10,000
Community rooms $ 28,000
Library expansion $ 25,000
Misc. interior $ 7,500
New entries $ 60,000

Total additional costs for Option “D” $200,500
### Option “E” Additional Costs:

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<td>EWC Outreach</td>
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<tr>
<td>New entries</td>
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**Total additional costs for Option “E”** $202,000

### Gym Only Scheme:

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<tbody>
<tr>
<td>North Gym Wall</td>
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<td>New South Wall</td>
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<td>Kitchen/ concessions</td>
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### Central Section Only Scheme:

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### Library Only Scheme:

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