



Brookview Community Center Building Assessment

July 1, 2014



HGA COMMISSION NUMBER 2065-004-00

Golden Valley hired HGA to study three sites for a potential Community Center. One of the three sites is located at 200 Brookview Parkway and would involve reuse or demolition of the existing Community Center building. We have been asked to perform an assessment and write a short narrative on our recommendation as to whether a remodel or addition is feasible.

A thorough assessment of the existing facility was performed by HGA architectural, structural, mechanical and electrical professionals on May 14, 2014. We recognize some positive aspects of keeping the existing facility, including historical value, embodied energy of existing construction and cultural memory of the Center that has served its constituents well for almost 100 years. However, several critical issues that require extensive study and cost to correct were noted and are reported in more detail in the following pages. The facility has experienced significant deterioration over its life and needs corrective measures to fix moisture problems inside and out. The air handling units are past their expected life span and the chillers need replacement. There is questionable capacity of structural elements that must be addressed. In addition, as a Community Center, access is currently challenged. Restrooms and locker rooms do not meet current codes and vertical circulation between floors is only possible by navigating exterior ramps. In addition, this access from the exterior does not meet current code requirements.

A Golden Valley Task Force has established a vision for the project with important guiding principles at its core:

The new Golden Valley Community Center is envisioned as a gathering place for the entire Golden Valley community in its use and identity. Attraction of residents of all ages is central to this vision, including building accessibility as well as breadth of programming supported by its spaces and building systems. A facility that supports these goals will be physically accessible and programmatically flexible.

Given the goals of the project moving forward and the significant cost to correct existing problems, our recommendation is to replace the Brookview Community Center. This will allow the new facility to be right-sized, accessible, purpose-built and energy efficient for the long-term benefit of the community.

The Brookview Community Center in Golden Valley, Minnesota was originally constructed in 1918. Since that time, the Center has gone through a number of renovations and additions to meet the growing demands of the City of Golden Valley. The Center, once again, is at the point where a decision needs to be made, whether to expand and renovate the existing facility or build a new facility. This report addresses an assessment of the existing Community Center facility only. It should be noted that minimal drawings were available for this study, so some of the information provided is assumed at this time.

The Community Center is approximately 19,300 gross square feet (GSF) total, with 11,300 GSF on the Lower Level and roughly 8,000 GSF on the First Level. The building is primarily of wood construction, which would be classified as a Type III or Type V construction per the current edition of the Minnesota State Building Code (MSBC). The Lower Level perimeter appears to be of block construction. The Center appears to be at least partially-sprinklered. That said, per Table 503 of the MSBC, the facility is close to the maximum allowable area for this construction type, most likely Type III-B. Any addition would need a fire separation from the existing facility.

The Center comprises mixed occupancy types; A-3 primary occupancy (Community Rooms on First Level), B occupancy (Office Areas), A-2 occupancy (Dining at Lower Level), and type M occupancy (Pro Shop on Lower Level). For non-separated occupancies, the A-3 was used for checking allowable square footage from Table 503.

Checking the existing required egress components, it is observed that none of the existing stairs meet current code, mostly due to handrail and guardrail requirements. Given that this is a public facility, the exit stairs would need to be updated per current MSBC requirements as part of any renovation.

At present, the Brookview Community Center Building functions as two separate buildings. This is partially a result of function, but, more importantly, because there is no elevator. Any mobility challenged person trying to travel between floors is forced to go outside, traverse the ramping system and re-enter the building. This is unacceptable for any community facility. In order to meet the current Minnesota State Accessibility Code, much of the Center would need to be upgraded.

In addition to the elevator, it was observed that none of the toilet facilities meet the current accessibility requirements and would need to be fully renovated. To do so in the current footprint of the toilet rooms would likely result in the loss of one fixture in each room. It should be noted that this loss would likely result in a deficit of fixtures required based on occupancy classification, as set forth in the Plumbing Code. The locker rooms on the Lower Level also do not meet current accessibility requirements. Again, in the current space, the loss of one fixture is likely. One accessible shower stall in each locker room would also need to be added. To affectively address these issues, the locker rooms would require complete demolition and renovation.

It was observed that the original 1918 portion of the Center has settled and is not level (refer to the structural report for more information). Much of the main storage for the facility is within the mechanical room in the Lower Level, which is not permitted and would need correction.

The small kitchen facilities would also need a thorough evaluation and inspection from a code perspective. The kitchens are not for cooking, but only preparation. For large events at the Community Center, only off-site catering can be accommodated. Therefore, the kitchen functions as a catering and warming kitchen only.

The flat roof areas are not adequately sloped to the roof scuppers, resulting in ponding water. Not surprisingly, water damage to the rooms below this area, as well as to the foundation walls, can be observed. The existing windows are not thermally efficient and have some rot due to exposure to the elements and leaking over the years.

It was observed that the site retaining wall adjacent to the golf clubhouse area is settling and pulling away. Due to this, it is also pulling away portions of the patio, walkway and ramp. This uneven settlement has created uneven pavement, causing a tripping hazard. At the base of the ramp leading from this area to the First Level, the settlement differential is in excess of 1", which is greater than that allowed by code for an accessible ramp.

In summary, based on this site observation from May 14, 2014, and a limited review of available documents, the existing Brookview Community Center Building is in need of extensive renovation to bring the facility to current Minnesota State Building Code standards and Minnesota State Accessibility Code standards. Many corrections to the exterior would also need to be made to stop further damage due to exposure to the elements and settlement.

On May 14, 2014, a site visit was made to inspect the condition of the existing Brookview Community Center Building to determine the feasibility of continued use with future remodeling of the existing facility versus demolishing and building new. All information and recommendations within this report comes from visual observation during the tour, as well as existing drawings provided to HGA by Brookview Community Center. The original construction documents are not available; only some of the remodeling drawings exist at this time.

Without original existing drawings, the full structural evaluation requires the following efforts be undertaken:

First, a condition survey and forensic investigation will need to be conducted. This involves testing for moisture penetration, in-place nondestructive testing, as well as demolition for material sampling in preselected areas. These procedures will require isolated removal of existing finishes and testing in limited areas identified through the close collaboration of the engineering, architectural and investigation team.

Second, drawings based on these findings will need to be created illustrating representative as-built conditions along with any necessary retrofitting in areas impacted by new addition/retrofitting. Any additions, alternations or repairs should comply with current code provisions for new construction. These assumptions in design direction should be verified with the local building official having jurisdiction over the project.

The original Brookview Community Center was built in 1918 and constructed with a combination of materials including exterior wood studs bearing walls above ground, concrete walls below ground, roof glulam beams spanning over community rooms, and wood trusses spanning over administrative area. The floor above the Basement was constructed using timber columns, 2" x 6", 8" and 10" purlins spanning up to 16 inches on centers and wood girders spanning between the columns. Limited areas were exposed to verify the structural system throughout the whole structure.

As the result of visual observation of structure, the following are the concerns of structural distress and require future investigation and repairs to continue to use the building with current functions.

Basement Structural Condition

The main concern for structural stability is the current state of the wood structure supporting the Main Floor, particularly in the administrative portion of the building. Some of the wood purlins are damaged or cracked to the point that the capacity to carry the load is questionable. Also, the wood posts in several places are not properly supported to the girders above. Using wood shims for girder support in some areas is not acceptable.

The settlements of the structure below are noticeable by walking on the Main Floor in the entry hall and administrative part of the building. It appears that the structural problems with this part of the building are long-term and were repaired several times during the life of the structure. The most intensive strengthening and re-supporting of the structural wood floor system was done in 1984, based on TKDA drawings. However, only part of the floor was retrofitted; the rest of the structure has continued to deteriorate over the past 30 years.

We believe that the structural problem with the wood floor needs to be addressed as soon as possible to restore the capacity to carry the loads and prevent future deterioration of the structure.

Roof Structure over Community Rooms

The roof over the entire building consists of several steps in elevation. The top of the roof was not observed during our visit. The structure supporting the large and small community rooms consists of wood glulam beams spanning between exterior and interior bearing walls. In general, the beams appear to be in good shape. A small sag in beams at the large room and a small crack (split) at the bottom cord of one of the beams is visually noticeable. It is not a concern at this time based on the long life of the structure, and there is no heavy mechanical/electrical equipment load on the roof. However, it will be prudent to check the capacity of the structural elements to make sure they are in compliance with the code.

Building on top of the existing structure or adding additional load is not feasible, as it was not intended in the original building design.

Exterior of the Building Observations

There is significant deterioration visible on the walls in several locations due to moisture penetration and subsequent freeze-thaw action. The source of moisture infiltration can be traced to typical areas such as roof/plaza flashing, high sidewalk elevation with salt splashes and debonded mortar bed joints. Renovation work should not only involve repairing damaged areas, but also taking corrective measures at the sources of moisture infiltration to limit future deterioration.

Also, the soil retention wall at the west side of the building is separated vertically from the railing and leans toward the west, up to four-five inches at some points.

The structural part of the report covers only the main frame structural elements. However, many other architectural and engineering survey items are affecting the overall building integrity. Many areas of the building are covered with architectural finishes and the structural condition is unknown.

Based on the first impression and short-time observation, the large scale renovation of the building will be very costly. It will require rebuilding a large part of the structure, including floor, roof, bearing walls and retaining walls, as well as other major building systems mentioned in this report.

Air Handling Equipment

Any remodel of the existing building will require the ventilation systems to meet current codes for ventilation air. The cooling coil schedule from the 1984 drawings for the air handling units serving the Community Rooms and Seniors' Room shows that the units are designed to bring in 20% outside air. ASHRAE design standards require that meeting rooms be designed for 50 people per 1,000 SF. Using this standard, the Seniors' Room would have 58 people, and would require 580 cfm of outside air. The total supply air to the Seniors' Room is 600 cfm, or 120 cfm of outside air (20%). The two community rooms total approximately 3,140 SF, and would require 1,500 cfm of fresh air. The system supplies approximately 630 cfm of fresh air to the two rooms combined.

Some of the building's air handling units are located outside the building, which lessens the life of the equipment. A packaged rooftop unit installed outdoors in the Midwest has a median expected life span of 23 years according to the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE.) The newest unit at this facility is an outdoor air handling unit, Lennox Model RDE installed in 1991, making it 23 years old. All other air handling units are older than their expected service life.

Heating Equipment

The building's boiler was installed in 1984, making it 30 years old. The unit is well maintained, and boilers of this type can last 40 years or more if well maintained.

Chillers

The chillers are Trane split systems. They were installed in 1984. The average life expectancy of this type of chiller is 32 years. The chillers use refrigerant R22 which is an ozone-depleting refrigerant and has been scheduled for a complete phase-out. In 2010 the manufacturers of R22 were allowed to produce only 10% of the volume produced at peak production. By 2014 they will no longer be allowed to produce any of this refrigerant. A leak of this type of refrigerant could prove to be very costly to replace.

Fire Protection and Domestic Water

This facility is fully covered with fire sprinklers in every room, and the fire pump has passed its annual inspection. The domestic water service from the City has a backflow preventer as required by code. The domestic water heater is approximately five years old and in good condition.

In summary, it is our recommendation that all mechanical air handling systems be replaced due to the age of the equipment and the inadequate quantity of outside air being supplied to the current gathering spaces. Increasing the air supplied to these areas will require larger distribution ductwork and therefore all supply and return ducts would also have to be replaced. In addition, the chillers are also nearing the maximum estimated service life and will become more difficult to service as the refrigerant used is phased out of production.

The building electrical service was updated and enlarged with the building remodel designed in 1984. The remodel included the west large Community Rooms, Catering Kitchen, Lower Level Locker Rooms, and Offices.

The existing service is a 120/240V single-phase 800A underground service from an Xcel pad-mounted transformer outside the east wall of the building at the Lower Level. Maximum demand for 2013 was 93kW in May. This equates to 500 amps used of the 800A service. The existing building is approximately 19,300 square feet. This load equates to 6.6 Watts/SF for a maximum load. Basically, the existing service is at maximum load, with no capacity for expansion.

Electrical service equipment is in very good condition; however, it is in the Lower Level on the east exterior wall, and the Lower Level has experienced flooding in that area. This area also has very low structure which would hinder adding feeders to the existing switchgear. Considering these two issues, the service equipment should be in a different location, not below grade, and have adequate vertical clearance. The equipment has adequate clearance to the front and working space from side to side.

It should be noted that this service is a single-phase service, due to the fact that the building is in a residential neighborhood with single-phase primary overhead lines in the area owned by Xcel Energy. This is also the largest service size available from Xcel as single-phase, and the largest pad-mounted transformer available. Planning for an addition to this building or a larger building as a replacement will require Xcel Energy to extend three-phase primary power to the site for the electrical service. This should be investigated early with Xcel Energy as there may be significant cost associated with this construction.

Load centers are located in several locations on both levels. It was observed that circuits have been added without attention to area/closest panel.

Lighting is a mix of fluorescent and incandescent, with exterior and site lighting being mostly high-pressure sodium. There is no generator for the building. There is limited battery pack egress lighting and battery pack exit signs.

The building has a fairly new fiber optic service for phone and data connections. Fiber entrance is in the Lower Level adjacent the electric service equipment. On the Upper Floor Level there is a small staff room with IT equipment on wall-mounted racks and “chain suspended” shelves. It is typical practice to have a telecom closet, with a separate cooling system to provide 24/7 system cooling, to house IT equipment and in which cabling terminates.

There is a minimal fire alarm system in the building – notification and manual system. The system includes fire sprinkler system connections. The existing system is code compliant. The existing system may not have expansion capability.

In summary, the existing electrical system is in fair condition, yet operates at maximum load to serve current needs. Any expansion will require a new enlarged three-phase service. In addition, Xcel Energy should be contacted to discuss three-phase power access if renovation or expansion is pursued.

Main Entrance to Community Center

- First Level elevated from parking below by one story.
- Anyone disable forced to traverse ramping system to enter this level.
- Seniors forced to climb stairs to enter rather than at-grade.



Restroom Stall

Does not meet MN State Accessibility Code requirements

- Inadequate clearances within stall, typical for each
- Grab bars not to code



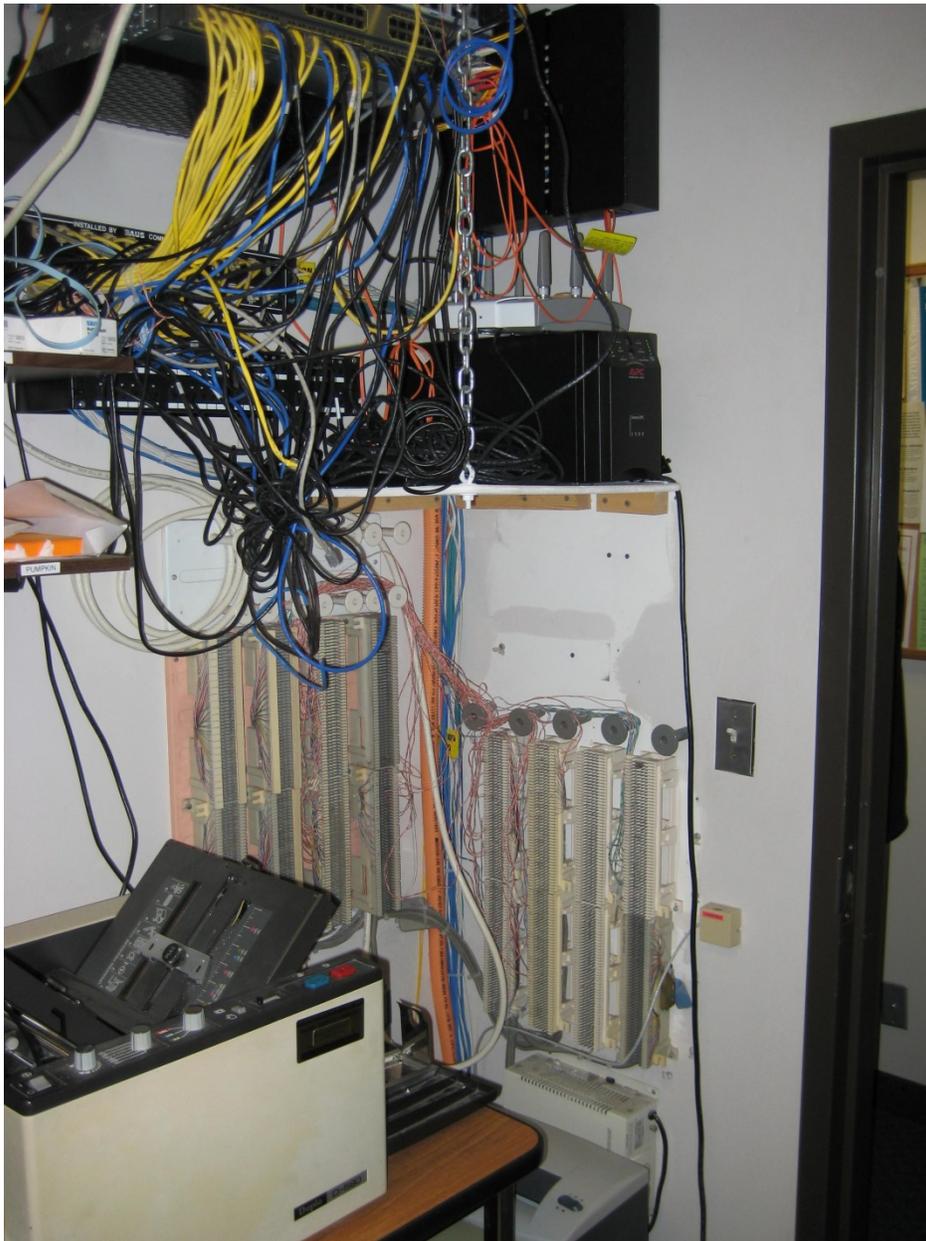
Restroom Urinals

Does not meet MN State Accessibility Code requirements.



IT Room, Office Storage, Copy Room

- Inadequate space
- Hazardous



Mechanical Room

- Building storage within Mechanical Room
- No sprinkler system in storage room



Ramp

Base of ramp leading to the First Level

- Does not meet MN State Accessibility Code requirements
- Greater than 1/2" permitted by code



Guardrails

Does not meet MSBC Chapter 10 requirements for guardrail at open side of stair an on Upper Level

- Dimension between pickets cannot exceed 4"



Roof

- Ponding water due to inadequate slope to roof scuppers at perimeter wall.
- Water damage observed to areas below.



Guardrail

- Rot at required guardrail.
- Guardrail a hazard; can move 6" either direction.

